FSH-PH Publication

MASTERING AGRICULTURE: YOUR ULTIMATE GUIDE TO ACING THE BOARD EXAM

Authors :

Magna Anissa Edding Aming-Hayudini, RN,RM,LPT,MAN,MPA,DPA,PD-SML
Albert R. Cabolbol, L. Agri., MSFS
Alwajir Tuttuh, BSA,L. Agri.,MSFS
Merhama M. Sammah, BSA, MSA
Nedzfa Abdurahman Ahajani, L. Agri.,MSFS
Fatima Sheirene Muktadir-Marajuli, L. Agri., MPA,MSFS
Neriza J. Kiram, L. Agri., MSFS CAR
Abey K. Sobrepeña, L. Agri.
Rasmalyn Sarahan Samla, L. Agri.
Muksidal L. Hasim, BSA
Milda M. Aming, BSABM, MSFS
Aldimar S. Murphy, L. Agri., MSFS(U)
Munib J. Baki, BSA, MSFS(C)
Rugiya J. Janing, BSA, MSFS (C)

ISBN (PDF) 978-621-8438-05-7

ISBN: 978-621-8438-05-7

PDF (Dowloadable)

Published by:

FSH-PH Publications

Block 4 Lot 6, Lumina Homes,

Pamatawan, Subic, Zambales

https://fsh-publication.com/

Foreword

The agricultural sector is an important sector for developing economie ensuring food security, and supporting communities. As faculty members and instructors of the College of Agriculture of Mindanao State University-Sulu and MSU-Lanao del Norte Agricultural College, we recognize the necessity to empower future agricultural professionals to become more competent, knowledgeable, and technically equipped for the challenges of their profession. With this in mind, we are pleased to introduce Mastering Agriculture: Your Ultimate Guide to Acing the Board Exam—a detailed review book specifically created to guide students and practitioners in confidently preparing for the licensure exam.

This book is the fruit of our joint expertise, effort, and dedication to academic excellence. It presents basic and advanced concepts required in the board exam, designed in a manner that makes complex concepts easy to understand while consolidating major principles. This book is not merely a review material, but it is a helpful learning guide, taking students not just to pass the exam, but to become effective and knowledgeable professionals in the field of agriculture.

In Mindanao State University-Sulu and MSU-LNAC, we believe in the mission of creating graduates who will meaningfully contribute to agricultural development, research, and innovation. We also hope that this book will be a stepping stone for future agricultural professionals to be successful, not just in the licensure examination but also in their careers and activities in nation-building.

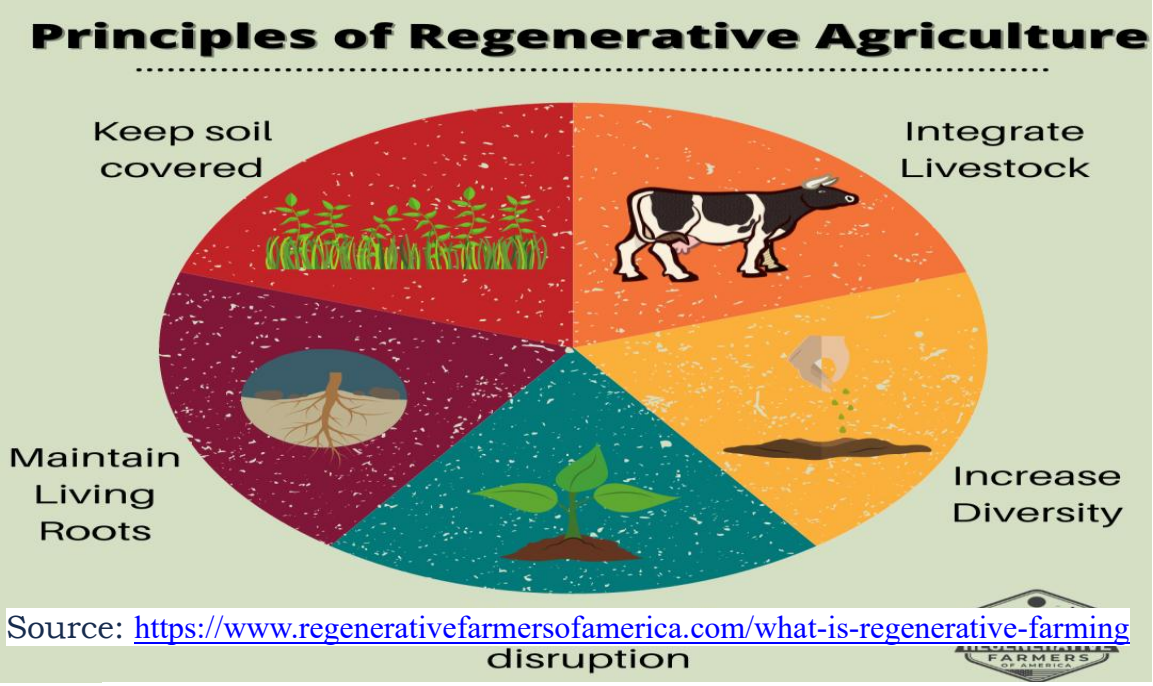
We wish all the examinees the best of luck—may your path to mastering agriculture be successful, and may this book be your most trusted companion towards achieving greatness.

Introduction

Agriculture is the pillar of a country, supporting lives, economies, and communities. For future agricultural practitioners, passing the common board exam is a key to being able to contribute meaningfully in the profession. Mastering Agriculture: Your Ultimate Guide to Acing the Board Exam is made to assist you in this endeavor with confidence and success.

This book is a comprehensive but easy-to-use guide, covering general topics, key concepts, and winning strategies to be at the top of the board exam. Whether you are a student giving the exam for the first time or an in-service practitioner who wants to update your knowledge, this book simplifies the difficult concepts and presents them to you in easy and step-by-step manners.

Apart from just passing the exam, this book aims to make you appreciate agriculture and its significance in society. With adequate preparation, attitude, and study habits, you can do better and serve the agricultural sector.



Source: https://www.regenerativefarmersofamerica.com/what-is-regenerative-farming

Regenerative agriculture is an innovative approach to healing the land while delivering lasting farm productivity. It is an approach that actively seeks to renew soil health, increase biodiversity, enhance water cycles, and drive farm profitability—while reducing climate change.

Deep within its principles, regenerative agriculture knows nature is highly interdependent. Healthy soils form the base, full of life and organic material that nourish vibrant ecosystems. When soil is healthy, biodiversity thrives, building resilient plant and animal populations. The result is increased biodiversity, where every drop of water seeps into the earth and feeds the land instead of flushing away precious nutrients.

The advantages of this natural, self-replenishing cycle extend far beyond rehabilitating the environment—they benefit farmers directly as well. Healthier soil leads to stronger, more durable plants, which result in higher yields and reduced dependency on costly chemical inputs. This translates into reduced expenses, increased profits, and a farm that is profitable for generations to come. Regenerative agriculture isn't merely a matter of being kind to the land; it's about establishing a farming system that regenerates itself so that the earth and the humans who work on it can both thrive together.

Although the precise origin of this visual model is not certain, its principles are established and applied in agriculture. Many studies and publications endorsing these regenerative practices abound, offering a wealth of information for those wishing to create a world where agriculture regenerates, rather than destroys, the earth.

What's in the Review Content

COMMON BOARD EXAMINATION REVIEWER FOR AGRICULTURE

The Board Examination for Agriculture in the Philippines typically covers a range of subjects relevant to agricultural practices, science, and management. Common areas of coverage include:

A. **Agronomy** - Study of crop production and soil management.
B. **Horticulture** - Focus on fruits, vegetables, and ornamental plants.
C. **Animal Science** - Livestock management and animal production.
D. **Agricultural Engineering** - Application of engineering principles to agriculture.
E. **Soil Science** - Understanding soil properties and management.
F. **Plant Pathology** - Study of plant diseases and their control.
G. **Entomology** - Insect biology and pest management.
H. **Agricultural Economics** - Economic principles applied to agriculture.
I. **Extension Education** - Methods for disseminating agricultural knowledge.

The exam may also include general subjects such as statistics, ecology, and agricultural policies. It is advisable for takers or students to check the specific syllabus from the Professional Regulation Commission (PRC) or relevant governing body for the most accurate and updated information.

A. Agronomy

1. **Which of the following is considered a primary macronutrient for plant growth?**
    A) Iron
    B) Nitrogen
    C) Manganese
    D) Zinc

2. **What is the ideal pH range for most crops?**
    A) 4.0 - 5.0
    B) 5.5 - 7.0
    C) 7.5 - 8.5
    D) 9.0 - 10.0

3. **Which of the following crops is primarily grown for its tubers?**
    A) Rice
    B) Corn
    C) Sweet potato
    D) Soybean

4. **What is the process of adding organic matter to the soil to improve its fertility?**
    A) Irrigation
    B) Fertilization
    C) Mulching
    D) Composting

5. **Which of the following is a method of irrigation?**
    A) Crop rotation
    B) Furrow irrigation
    C) Cover cropping
    D) Green manuring

6. **What is the primary purpose of crop rotation?**
    A) To increase pest populations
    B) To enhance soil fertility
    C) To reduce labor costs
    D) To use more water

7. **Which plant hormone is primarily responsible for cell elongation?**
    A) Ethylene
    B) Gibberellin
    C) Auxin
    D) Abscisic acid

8. **What is the main benefit of cover crops?**
    A) Increase crop yield
    B) Suppress weed growth
    C) Enhance soil erosion
    D) Increase fertilizer use

9. **Which of the following is a method of organic farming?**
    A) Use of synthetic fertilizers
    B) Crop monoculture
    C) Green manuring
    D) Pesticide application

10. **What is the recommended planting depth for most vegetable seeds?**
    A) 1-2 cm
    B) 5-7 cm
    C) 10-15 cm
    D) 20-25 cm

11. **Which of the following is a symptom of nitrogen deficiency in plants?**
    A) Yellowing of older leaves
    B) Stunted growth
    C) Leaf curling
    D) Browning of leaf edges

12. **What is the purpose of tillage in agriculture?**
    A) To increase soil compaction
    B) To control pests
    C) To prepare the seedbed
    D) To increase water runoff

13. **Which crop is commonly associated with the use of a "transplanter"?**
    A) Corn
    B) Rice
    C) Wheat
    D) Barley

14. **What is "soil erosion"?**
    A) Increase in soil fertility
    B) Loss of topsoil due to water or wind
    C) Addition of organic matter
    D) Compaction of soil

15. **Which of the following practices helps conserve soil moisture?**
    A) Tilling
    B) Cover cropping
    C) Excessive irrigation
    D) Crop monoculture

16. **Which nutrient is primarily responsible for root development in plants?**
    A) Phosphorus
    B) Potassium
    C) Calcium
    D) Magnesium

17. **What is the term for the practice of growing two or more crops in the same area during a single growing season?**
    A) Crop rotation
    B) Intercropping
    C) Monoculture
    D) Agroforestry

18. **Which of the following is a leguminous cover crop commonly used for nitrogen fixation?**
    A) Maize
    B) Sorghum
    C) Cowpea
    D) Barley

19. **Which factor is most critical in determining the type of crops that can be grown in a particular area?**
    A) Soil texture
    B) Market demand
    C) Farmer's experience
    D) Crop rotation

20. **What is the purpose of mulching in agriculture?**
    A) To increase soil temperature
    B) To suppress weed growth and retain moisture
    C) To improve soil compaction
    D) To facilitate pest attraction

21. **What is the primary method of controlling weeds in organic farming?**
    A) Herbicides
    B) Manual weeding
    C) Soil fumigation
    D) Genetic modification

22. **Which of the following is an indicator of good soil health?**
    A) Low organic matter content
    B) High erosion rates
    C) Presence of earthworms
    D) High acidity

23. **Which irrigation method is most water-efficient?**
    A) Flood irrigation
    B) Drip irrigation
    C) Furrow irrigation
    D) Surface irrigation

24. **What is the primary reason for applying compost to soil?**
    A) To increase soil pH
    B) To enhance microbial activity and nutrient availability
    C) To compact the soil
    D) To reduce soil temperature

25. **Which of the following is a characteristic of loamy soil?**
    A) High sand content
    B) High clay content
    C) Balanced mixture of sand, silt, and clay
    D) Low organic matter content

26. **What is the main purpose of crop diversity?**
    A) To simplify pest management
    B) To increase soil compaction
    C) To enhance ecosystem resilience
    D) To reduce labor costs

27. **Which fertilizer type is typically high in potassium?**
    A) Urea
    B) Superphosphate
    C) Muriate of potash
    D) Ammonium sulfate

28. **What is the process of breaking down organic matter into simpler substances by microorganisms called?**
    A) Fermentation
    B) Composting
    C) Mineralization
    D) Photosynthesis

29. **Which of the following practices is used to improve soil aeration?**
    A) Tillage
    B) Mulching
    C) Irrigation
    D) Fertilization

30. **What is the term for planting crops in rows with alternating plants of different species?**
    A) Intercropping
    B) Monoculture
    C) Strip cropping
    D) Relay cropping

31. **What is the primary benefit of using green manures?**
    A) Reduces soil pH
    B) Enhances soil fertility and structure
    C) Increases soil compaction
    D) Suppresses beneficial microbes

32. **Which of the following is a sign of phosphorus deficiency in plants?**
    A) Yellowing of older leaves
    B) Purplish coloration of leaves
    C) Leaf curling
    D) Brown leaf tips

33. **Which practice is effective for reducing soil erosion on sloped lands?**
    A) Contour farming
    B) Intensive tillage
    C) Monocropping
    D) Burning crop residues

34. **What is the term for the maximum amount of water a soil can hold against the force of gravity?**
    A) Field capacity
    B) Wilting point
    C) Saturation
    D) Hygroscopic water

35. **Which of the following crops is typically classified as a cereal?**
    A) Potato
    B) Rice
    C) Tomato
    D) Carrot

36. **What is the role of potassium in plants?**
    A) Promotes root development
    B) Enhances disease resistance and drought tolerance
    C) Increases photosynthesis rate
    D) Fixes atmospheric nitrogen

37. **Which of the following is a method to test soil fertility?**
    A) Visual inspection
    B) Soil sampling and analysis
    C) Measuring temperature
    D) Counting earthworms

38. **What type of plant is often used as a cover crop to prevent soil erosion?**
    A) Legumes
    B) Grasses
    C) Succulents
    D) Ferns

39. **Which farming practice involves planting crops in different seasons to maximize productivity?**
    A) Intercropping
    B) Crop rotation
    C) Monoculture
    D) Agroforestry

40. **What is the best time to plant rice in the Philippines?**
    A) Dry season
    B) Wet season
    C) Winter
    D) Anytime

41. **What is the primary purpose of soil conservation practices?**
    A) Increase crop yields
    B) Prevent soil erosion and degradation
    C) Promote monoculture
    D) Enhance pest populations

42. **Which nutrient is essential for chlorophyll synthesis in plants?**
    A) Nitrogen
    B) Phosphorus
    C) Potassium
    D) Calcium

43. **What is a benefit of practicing agroforestry?**
    A) Increased soil erosion
    B) Enhanced biodiversity and resource efficiency
    C) Higher pesticide use
    D) Monoculture promotion

44. **Which of the following is a common method of pest management in sustainable agriculture?**
    A) Monoculture
    B) Integrated Pest Management (IPM)
    C) Sole use of chemical pesticides
    D) Ignoring pest problems

45. **Which factor is most critical in determining the suitability of land for agriculture?**
    A) Proximity to urban areas
    B) Climate and soil type
    C) Government policies
    D) Availability of machinery

46. **Which crop is often referred to as a "cash crop"?**
    A) Wheat
    B) Sugarcane
    C) Corn
    D) Barley

47. **What is the ideal soil moisture level for most crops at planting?**
    A) Saturated
    B) Field capacity
    C) Below wilting point
    D) Completely dry

48. **Which of the following is a key feature of sustainable agriculture?**
    A) High chemical input
    B) Preservation of natural resources
    C) Intensive monoculture
    D) Focus on short-term profits

49. **What is the function of a soil amendment?**
    A) To prevent erosion
    B) To improve soil structure and fertility
    C) To increase water runoff
    D) To create hardpan

50. **Which of the following practices is NOT recommended for maintaining soil health?**
    A) Crop rotation
    B) Cover cropping
    C) Excessive tillage
    D) Organic matter addition

51. **Which of the following is an example of a leguminous crop?**
    A) Rice
    B) Wheat
    C) Soybean
    D) Barley

52. **What does the term "sustainable agriculture" primarily focus on?**
    A) Maximizing short-term yields
    B) Environmental health and resource conservation
    C) Use of synthetic fertilizers and pesticides
    D) Increasing land use intensity

53. **Which soil type is best for water retention and nutrient availability?**
    A) Sandy soil
    B) Clay soil
    C) Loamy soil
    D) Silt soil

54. **What is the primary advantage of using drought-resistant crop varieties?**
    A) Higher market prices
    B) Reduced fertilizer requirements
    C) Increased resilience to water scarcity
    D) Improved pest resistance

55. **Which of the following is NOT a benefit of using cover crops?**
    A) Suppressing weeds
    B) Enhancing soil fertility
    C) Increasing soil erosion
    D) Improving soil structure

56. **What is the main purpose of soil pH testing?**
    A) To determine soil texture
    B) To assess nutrient availability
    C) To evaluate soil moisture
    D) To measure compaction

57. **Which practice helps to reduce the spread of soil-borne diseases?**
    A) Monocropping
    B) Crop rotation
    C) Excessive watering
    D) Tillage

58. **What is the main benefit of implementing precision agriculture?**
    A) Decreased yields
    B) Increased resource efficiency
    C) Higher labor costs
    D) Simplified farming practices

59. **Which nutrient deficiency is characterized by interveinal chlorosis in younger leaves?**
    A) Nitrogen
    B) Magnesium
    C) Potassium
    D) Phosphorus

60. **What is the primary function of mycorrhizal fungi in agriculture?**
    A) Fix atmospheric nitrogen
    B) Decompose organic matter
    C) Enhance nutrient uptake for plants
    D) Suppress weeds

61. **What is the primary advantage of using organic fertilizers?**
    A) Immediate nutrient release
    B) Improvement of soil structure and health
    C) Higher toxicity to pests
    D) Lower cost than synthetic fertilizers

62. **Which of the following is considered a secondary macronutrient?**
    A) Calcium
    B) Nitrogen
    C) Phosphorus
    D) Potassium

63. **What does "no-till farming" primarily aim to achieve?**
    A) Increase soil compaction
    B) Reduce erosion and improve soil health
    C) Simplify pest management
    D) Maximize chemical input use

64. **Which of the following is a common method for improving soil drainage?**
    A) Tillage
    B) Adding organic matter
    C) Installing drainage tiles
    D) Cover cropping

65. **What is the term for the practice of planting different crops in alternating rows?**
    A) Crop rotation
    B) Monocropping
    C) Intercropping
    D) Agroforestry

66. **Which crop is typically grown in a relay cropping system?**
    A) Rice
    B) Corn
    C) Soybean
    D) All of the above

67. **What is the primary function of foliar fertilizers?**
    A) To enhance root growth
    B) To provide nutrients through leaves
    C) To improve soil structure
    D) To increase water retention

68. **Which of the following practices can lead to soil salinization?**
    A) Crop rotation
    B) Over-irrigation
    C) Cover cropping
    D) Reduced tillage

69. **What is the ideal temperature range for seed germination for most crops?**
    A) 0-10°C
    B) 10-20°C
    C) 20-30°C
    D) 30-40°C

70. **Which of the following is a benefit of using integrated nutrient management?**
    A) Increased dependence on synthetic fertilizers
    B) Enhanced soil and crop productivity
    C) Higher risk of soil degradation
    D) Reduced crop diversity

71. **Which of the following practices is effective for pest control in organic farming?**
    A) Use of chemical pesticides
    B) Crop rotation
    C) Soil fumigation
    D) Monoculture

72. **What is the primary role of calcium in plants?**
    A) Energy transfer
    B) Structural support
    C) Photosynthesis
    D) Nitrogen fixation

73. **Which nutrient is most commonly associated with fruit development?**
    A) Nitrogen
    B) Phosphorus
    C) Potassium
    D) Magnesium

74. **What is the main cause of soil acidity?**
    A) Excessive organic matter
    B) Leaching of basic cations
    C) High clay content
    D) High rainfall

75. **Which of the following is NOT a characteristic of sustainable agriculture?**
    A) Use of renewable resources
    B) Maintenance of ecological balance
    C) Reliance on synthetic chemicals
    D) Preservation of biodiversity

76. **What is the purpose of using a soil amendment like gypsum?**
    A) To increase soil acidity
    B) To improve soil drainage and structure
    C) To suppress weeds
    D) To enhance water retention

77. **Which of the following is an indicator of soil compaction?**
    A) High organic matter content
    B) Poor root growth and reduced water infiltration
    C) Increased earthworm activity
    D) Good soil aeration

78. **What is the function of a seed treatment?**
    A) To enhance germination
    B) To protect against pests and diseases
    C) To improve soil fertility
    D) To increase water retention

79. **Which of the following is a major benefit of agroecology?**
    A) Increased reliance on chemical inputs
    B) Greater ecological balance and resilience
    C) Simplified farming systems
    D) Higher labor costs

80. **What is the primary goal of conservation tillage?**
    A) To increase soil compaction
    B) To reduce soil erosion and improve soil health
    C) To eliminate the need for cover crops
    D) To maximize crop yield through intensive tillage

81. **Which practice helps in controlling soil erosion on agricultural lands?**
    A) Overgrazing
    B) Contour plowing
    C) Excessive tillage
    D) Monoculture

82. **What is the main advantage of using mulch in agriculture?**
    A) To increase soil compaction
    B) To suppress weed growth and retain moisture
    C) To promote pest infestations
    D) To enhance soil acidity

83. **Which of the following practices is essential for improving soil organic matter content?**
    A) Continuous cropping
    B) Crop rotation with legumes
    C) Intensive tillage
    D) Use of chemical fertilizers

84. **What is the primary purpose of plant breeding?**
    A) To reduce crop yields
    B) To develop varieties that resist diseases and pests
    C) To simplify planting processes
    D) To encourage monoculture

85. **Which nutrient is primarily responsible for root development in plants?**
    A) Nitrogen
    B) Phosphorus
    C) Potassium
    D) Calcium

86. **What is the purpose of using a soil fertility map?**
    A) To determine crop rotation schedules
    B) To visualize nutrient distribution across a field
    C) To measure soil moisture levels
    D) To identify pest hotspots

87. **Which of the following is a common indicator of nitrogen deficiency in plants?**
    A) Yellowing of older leaves
    B) Stunted growth
    C) Leaf curl
    D) Purplish discoloration

88. **What is the main goal of agroecology?**
    A) Increase chemical fertilizer use
    B) Enhance agricultural sustainability and biodiversity
    C) Simplify farming techniques
    D) Maximize short-term yields

89. **Which of the following is a benefit of using biochar in soil management?**
    A) Increased soil acidity
    B) Improved soil fertility and carbon sequestration
    C) Higher leaching of nutrients
    D) Reduction in soil aeration

90. **What is the primary benefit of using cover crops in a cropping system?**
    A) Increase in soil erosion
    B) Suppression of weeds and enhancement of soil structure
    C) Higher fertilizer dependency
    D) Reduced biodiversity

91. **What is the primary role of nitrogen-fixing bacteria in agriculture?**
    A) To decompose organic matter
    B) To convert atmospheric nitrogen into a usable form for plants
    C) To enhance soil drainage
    D) To improve soil acidity

92. **Which of the following practices helps in conserving water in agriculture?**
    A) Flood irrigation
    B) Drip irrigation
    C) Overhead spraying
    D) Soil compaction

93. **What is the main reason for implementing integrated weed management?**
A) To increase chemical herbicide use
B) To maximize soil disturbance
C) To reduce reliance on a single control method and enhance effectiveness
D) To promote monoculture

94. **Which of the following is a characteristic of clay soil?**
A) Quick drainage
B) High nutrient-holding capacity
C) Poor aeration
D) Light weight

95. **What is the purpose of intercropping?**
A) To grow a single crop variety
B) To reduce biodiversity
C) To maximize land use and improve crop yields
D) To simplify pest management

96. **Which method is commonly used to improve the pH of acidic soils?**
A) Applying sulfur
B) Adding lime
C) Increasing organic matter
D) Using ammonium fertilizers

97. **What is the main characteristic of precision agriculture?**
A) Use of traditional farming techniques
B) Adoption of technology to optimize field-level management
C) Reliance on high chemical inputs
D) Single crop cultivation

98. **Which of the following is a benefit of planting windbreaks on farms?**
A) Increased soil erosion
B) Enhanced soil fertility
C) Protection against wind damage and reduced evaporation
D) Decreased crop diversity

99. **What is the purpose of soil testing in agriculture?**
A) To identify soil texture
B) To evaluate nutrient levels and pH for informed management decisions
C) To assess crop yield potential
D) To measure soil compaction

100. **What is the primary purpose of using organic amendments like compost?**
A) To increase soil erosion
B) To enhance soil fertility and structure
C) To promote chemical dependency
D) To decrease microbial activity

B. HORTICULTURE

1. **What is the primary purpose of pruning fruit trees?**
   A) To increase height
   B) To improve air circulation and fruit production
   C) To reduce pest populations
   D) To enhance leaf size

2. **Which of the following is a common method for propagating mango trees?**
   A) Division
   B) Air layering
   C) Grafting
   D) Seed planting

3. **What nutrient is particularly important for flower development in plants?**
   A) Nitrogen
   B) Phosphorus
   C) Potassium
   D) Calcium

4. **Which of the following is a typical pest of vegetables in the Philippines?**
   A) Aphids
   B) Cabbage worms
   C) Fruit flies
   D) All of the above

5. **What is the best time to plant rice in the Philippines?**
   A) During the dry season
   B) During the rainy season
   C) Throughout the year
   D) Only in the summer

6. **Which fruit is considered a tropical fruit native to the Philippines?**
   A) Apple
   B) Banana
   C) Cherry
   D) Grapes

7. **What is the main advantage of using organic fertilizers?**
   A) Quick nutrient release
   B) Long-term soil health improvement
   C) Higher salt content
   D) Reduced labor requirements

8. **Which of the following is a common symptom of nutrient deficiency in plants?**
   A) Green leaves
   B) Wilting
   C) Leaf yellowing
   D) Excessive fruiting

9. **What is the primary benefit of mulching around plants?**
   A) Attracting pests
   B) Weeding prevention and moisture retention
   C) Soil compaction
   D) Increasing soil temperature

10. **Which of the following is a major challenge in urban gardening?**
   A) Lack of sunlight
   B) Soil erosion
   C) Pest control
   D) Water availability

11. **What type of soil is best suited for growing most vegetables?**
   A) Sandy soil
   B) Clay soil
   C) Loamy soil
   D) Saline soil

12. **Which method is commonly used to control plant diseases in horticulture?**
   A) Tillage
   B) Crop rotation
   C) Fertilization
   D) Overwatering

13. **What is the best time to harvest ripe mangoes?**
   A) When they are fully green
   B) When they start to turn yellow
   C) After they have fallen from the tree
   D) When they are hard and firm

14. **Which type of irrigation is most efficient for fruit orchards?**
   A) Flood irrigation
   B) Drip irrigation
   C) Sprinkler irrigation
   D) Surface irrigation

15. **Which of the following practices can enhance pollination in fruit crops?**
   A) Using chemical pesticides
   B) Planting more flowers nearby
   C) Reducing biodiversity
   D) Limiting water availability

16. **What is the purpose of hardening off seedlings?**
   A) To decrease their size
   B) To acclimate them to outdoor conditions
   C) To increase their growth rate
   D) To enhance disease resistance

17. **Which of the following fruits is known for being high in Vitamin C?**
   A) Banana
   B) Mango
   C) Papaya
   D) All of the above

18. **Which horticultural practice involves growing plants without soil?**
    A) Traditional farming
    B) Hydroponics
    C) Organic farming
    D) Monoculture

19. **What is the primary goal of Integrated Pest Management (IPM)?**
    A) Complete eradication of pests
    B) Reducing pest populations while minimizing harm to beneficial organisms
    C) Reliance solely on chemical pesticides
    D) Increasing pest diversity

20. **Which type of plant is commonly used for landscaping in the Philippines due to its vibrant flowers?**
    A) Bamboo
    B) Bougainvillea
    C) Palm trees
    D) Ferns

21. **What is the effect of too much nitrogen in soil?**
    A) Stunted growth
    B) Leaf yellowing
    C) Excessive leaf growth at the expense of flowers
    D) Increased fruiting

22. **Which of the following is a common method for controlling weeds?**
    A) Manual weeding
    B) Chemical herbicides
    C) Mulching
    D) All of the above

23. **What is the primary benefit of using a greenhouse?**
    A) Lower crop yields
    B) Protection from adverse weather and pests
    C) Increased labor costs
    D) Decreased sunlight

24. **Which variety of rice is commonly cultivated in the Philippines?**
    A) Basmati
    B) Jasmine
    C) Sinandomeng
    D) Arborio

25. **What is the main reason for using cover crops?**
    A) To decrease soil fertility
    B) To improve soil health and prevent erosion
    C) To increase pest populations
    D) To reduce crop diversity

26. **What type of climate is best for growing orchids?**
    A) Arid
    B) Tropical
    C) Temperate
    D) Polar

27. **Which of the following is a common organic pest control method?**
    A) Chemical sprays
    B) Beneficial insects
    C) Soil fumigation
    D) Monoculture

28. **What is the main advantage of planting fruit trees in staggered rows?**
    A) Increased sunlight for all plants
    B) Better air circulation and access for harvesting
    C) Decreased water availability
    D) Reduced biodiversity

29. **Which of the following practices can help in conserving soil moisture?**
    A) Tilling the soil
    B) Cover cropping
    C) Flooding fields
    D) Planting in rows

30. **Which fruit is often referred to as the "king of fruits" in the Philippines?**
    A) Mango
    B) Durian
    C) Rambutan
    D) Papaya

31. **What is a common symptom of overwatering in plants?**
    A) Leaf wilting
    B) Leaf drop
    C) Root rot
    D) Stunted growth

32. **Which method is effective for improving soil fertility in vegetable gardens?**
    A) Monoculture
    B) Crop rotation
    C) Tillage
    D) Reducing organic matter

33. **What is the primary goal of organic farming?**
    A) Maximizing chemical inputs
    B) Enhancing environmental sustainability
    C) Increasing pest reliance
    D) Focusing on monoculture

34. **Which flower is commonly used for landscaping and has vibrant colors?**
    A) Sunflower
    B) Marigold
    C) Dahlia
    D) All of the above

35. **What is the benefit of using native plants in landscaping?**
    A) High maintenance requirements
    B) Attracting local wildlife
    C) Limited adaptability
    D) Low resilience

36. **Which of the following is a common issue in greenhouse production?**
    A) Pest invasions
    B) Excess sunlight
    C) Poor soil quality
    D) High elevation

37. **What is the primary benefit of using seedless varieties in fruit production?**
    A) Higher pest resistance
    B) Easier consumption and processing
    C) Longer shelf life
    D) Increased water requirements

38. **Which type of fertilizer is typically slow-release?**
    A) Urea
    B) Ammonium sulfate
    C) Compost
    D) Triple superphosphate

39. **What is the best method for determining the right time to harvest fruits?**
    A) Color change and firmness
    B) Soil moisture content
    C) Leaf size
    D) Stem length

40. **Which of the following is essential for successful seed germination?**
    A) Darkness
    B) Moisture
    C) High salinity
    D) Cold temperatures

41. **What is the main purpose of using row covers in horticulture?**
    A) To increase soil temperature
    B) To reduce sunlight exposure
    C) To protect plants from frost and pests
    D) To promote weed growth

42. **Which of the following factors is crucial for successful hydroponic systems?**
    A) Soil quality
    B) Nutrient solutions
    C) Frequent tillage
    D) Natural sunlight only

43. **What is the primary advantage of grafting in horticulture?**
    A) Increased genetic diversity
    B) Enhanced disease resistance and yield
    C) Simplicity in planting
    D) Lower maintenance

44. **Which fruit is often used to make a popular local beverage called "calamansi juice"?**
    A) Lemon
    B) Calamansi
    C) Orange
    D) Grapefruit

45. **What is the purpose of using fungicides in horticulture?**
    A) To enhance root growth
    B) To control fungal diseases
    C) To promote flowering
    D) To increase fruit size

46. **Which of the following is a primary source of potassium for plants?**
    A) Nitrogen fertilizers
    B) Wood ash
    C) Phosphate rock
    D) Compost

47. **What is the primary function of plant hormones such as auxins?**
    A) Promote photosynthesis
    B) Regulate growth and development
    C) Increase pest resistance
    D) Enhance soil fertility

48. **Which plant is commonly used for ground cover in tropical gardens?**
    A) Bermuda grass
    B) Fescue
    C) Zoysia
    D) St. Augustine grass

49. **What is the main objective of using vertical gardening techniques?**
    A) Maximize space utilization
    B) Decrease plant diversity
    C) Reduce sunlight exposure
    D) Increase soil erosion

50. **Which of the following is a characteristic of tropical fruits?**
    A) They require cold climates
    B) They are typically high in fiber
    C) They thrive in warm, humid conditions
    D) They have a long shelf life

51. **What is the main purpose of using stakes for plants?**
    A) To enhance pest attraction
    B) To provide support for growth
    C) To increase soil temperature
    D) To decrease water availability

52. **Which type of flower is best for attracting pollinators?**
    A) Simple, single blooms
    B) Hybrid flowers with complex structures
    C) Dull-colored flowers
    D) Fragrant flowers only

53. **What is a key benefit of organic mulching in gardens?**
    A) Increased evaporation
    B) Nutrient release as it decomposes
    C) Soil compaction
    D) Decreased microbial activity

54. **Which plant part is primarily responsible for photosynthesis?**
    A) Roots
    B) Stems
    C) Leaves
    D) Flowers

55. **What is the main purpose of using a trellis in gardening?**
    A) To reduce plant height
    B) To provide support for climbing plants
    C) To increase shade
    D) To prevent soil erosion

56. **Which of the following is a common method for preserving fruits?**
    A) Fertilization
    B) Canning
    C) Watering
    D) Composting

57. **What is a common characteristic of tropical vegetables?**
    A) Low water requirements
    B) High temperature tolerance
    C) Cold climate preference
    D) Short growing seasons

58. **Which of the following is a common sign of pest damage on leaves?**
    A) Leaf wilting
    B) Discoloration or holes
    C) Excessive leaf growth
    D) Root expansion

59. **What is the main goal of plant breeding?**
    A) To decrease crop diversity
    B) To develop plants with desirable traits
    C) To increase chemical usage
    D) To simplify pest management

60. **Which of the following fruits is known for its high antioxidant content?**
    A) Watermelon
    B) Blueberry
    C) Banana
    D) Coconut

61. **What is the primary role of bees in horticulture?**
    A) Planting seeds
    B) Pollination
    C) Weeding
    D) Watering plants

62. **Which of the following is a common symptom of over-fertilization?**
    A) Leaf curl and burn
    B) Healthy growth
    C) Improved flowering
    D) Increased pest resistance

63. **What is the main advantage of companion planting?**
    A) Increased pest problems
    B) Improved growth and pest control
    C) Reduced biodiversity
    D) Higher water requirements

64. **Which type of lighting is most effective for indoor plant growth?**
    A) Incandescent bulbs
    B) LED grow lights
    C) Fluorescent lights
    D) Natural sunlight only

65. **What is the primary benefit of using raised beds in gardening?**
    A) Increased soil compaction
    B) Improved drainage and soil quality
    C) Decreased plant height
    D) Reduced pest access

66. **What is the primary function of plant roots?**
    A) Photosynthesis
    B) Nutrient absorption and anchorage
    C) Flowering
    D) Fruit production

67. **Which of the following is a common method for preventing soil erosion?**
    A) Tilling
    B) Planting cover crops
    C) Overgrazing
    D) Soil compaction

68. **What is the primary advantage of drip irrigation over traditional irrigation methods?**
    A) Higher water waste
    B) Targeted water delivery to roots
    C) Greater labor requirements
    D) Reduced efficiency

69. **Which type of vegetable is best suited for growing in shaded areas?**
    A) Tomatoes
    B) Lettuce
    C) Peppers
    D) Corn

70. **What is a common practice to enhance soil fertility in organic farming?**
    A) Using synthetic fertilizers
    B) Applying chemical pesticides
    C) Incorporating green manure
    D) Reducing crop diversity

71. **Which of the following is a key characteristic of drought-resistant plants?**
    A) High water requirements
    B) Deep root systems
    C) Low sunlight tolerance
    D) High nutrient needs

72. **What is the primary role of leaf cuttings in plant propagation?**
    A) Enhancing soil structure
    B) Reducing water loss
    C) Initiating new plant growth
    D) Increasing pest resistance

73. **Which of the following fruits is considered a superfood due to its health benefits?**
    A) Apple
    B) Avocado
    C) Mango
    D) Banana

74. **What is the purpose of using insect netting in horticulture?**
    A) To increase sunlight exposure
    B) To prevent pest access
    C) To enhance soil drainage
    D) To improve air circulation

75. **Which of the following is a method of preserving the quality of harvested fruits?**
    A) Excessive watering
    B) Proper storage conditions
    C) Ignoring temperature controls
    D) Overexposure to sunlight

76. **What is the primary goal of using plant markers in a garden?**
    A) To confuse gardeners
    B) To identify plant varieties
    C) To increase weed growth
    D) To reduce sunlight

77. **Which of the following is a benefit of organic gardening?**
    A) Increased pesticide usage
    B) Enhanced soil health and biodiversity
    C) Higher dependency on synthetic fertilizers
    D) Lower crop yields

78. **What is the primary advantage of using mulch in gardens?**
    A) Decreased soil temperature
    B) Weed suppression and moisture retention
    C) Increased soil erosion
    D) Reduced soil fertility

79. **Which vegetable is known for its ability to grow in low-nutrient soils?**
    A) Carrot
    B) Spinach
    C) Swiss chard
    D) Kale

80. **What is the purpose of using a pH meter in soil management?**
    A) To measure soil temperature
    B) To determine soil moisture levels
    C) To assess soil acidity or alkalinity
    D) To evaluate soil texture

81. **What is the main purpose of using companion planting?**
    A) To increase monoculture
    B) To enhance growth and deter pests
    C) To reduce crop yields
    D) To simplify watering needs

82. **Which type of lighting is most effective for seedlings?**
    A) Incandescent bulbs
    B) LED grow lights
    C) Natural sunlight only
    D) Fluorescent lights

83. **What is a common sign that a plant is not receiving enough water?**
    A) Leaf wilting and drooping
    B) Excessive leaf growth
    C) Bright green foliage
    D) Increased flowering

84. **What is the purpose of a compost bin?**
    A) To store weeds
    B) To facilitate decomposition of organic waste
    C) To increase soil salinity
    D) To create air pollution

85. **Which of the following is a benefit of using organic fertilizers?**
    A) Quick nutrient release
    B) Improved soil structure and health
    C) Increased reliance on synthetic chemicals
    D) Higher water runoff

86. **What is the main purpose of soil testing?**
    A) To identify pest populations
    B) To determine soil fertility and nutrient levels
    C) To measure plant height
    D) To assess water retention

87. **Which of the following is a characteristic of perennial plants?**
    A) They complete their life cycle in one season
    B) They can live for several years
    C) They require constant replanting
    D) They only produce flowers in spring

88. **What is the primary advantage of using companion planting techniques?**
    A) Higher pest populations
    B) Improved growth and pest control
    C) Increased reliance on herbicides
    D) Reduced crop yields

89. **Which vegetable is best known for its high water content?**
    A) Carrot
    B) Tomato
    C) Potato
    D) Cucumber

90. **What is the primary benefit of using a greenhouse?**
    A) To limit plant growth
    B) To control environmental conditions for optimal growth
    C) To reduce pest populations entirely
    D) To decrease sunlight exposure

91. **What is the primary function of nitrogen in fertilizers?**
    A) Promoting root development
    B) Enhancing flowering and fruiting
    C) Stimulating leafy growth
    D) Improving soil texture

92. **Which of the following is an example of a legume?**
    A) Spinach
    B) Carrot
    C) Bean
    D) Cabbage

93. **What is the main purpose of using cover crops?**
    A) To increase pest populations
    B) To improve soil health and prevent erosion
    C) To reduce plant diversity
    D) To decrease moisture retention

94. **Which type of plant is best for attracting butterflies?**
    A) Native flowering plants
    B) Dull-colored plants
    C) Non-flowering plants
    D) Plants with a strong odor

95. **What is the primary benefit of crop rotation?**
    A) Increased pest infestations
    B) Improved soil fertility and health
    C) Reduced crop diversity
    D) Lower yields

96. **Which of the following is a common indicator of nutrient deficiency in plants?**
    A) Healthy, green leaves
    B) Stunted growth and yellowing leaves
    C) Abundant flowering
    D) Increased pest resistance

97. **What is the primary advantage of using heirloom seeds?**
    A) Higher susceptibility to disease
    B) Greater flavor and diversity
    C) Limited availability
    D) Lower germination rates

98. **Which of the following practices is key for maintaining organic garden health?**
    A) Using synthetic fertilizers
    B) Promoting biodiversity
    C) Monoculture planting
    D) Heavy pesticide use

99. **What is the main purpose of using a soil amendment?**
    A) To change soil structure and fertility
    B) To limit plant growth
    C) To increase pest attraction
    D) To reduce water retention

100. **What is the primary role of chlorophyll in plants?**
    A) Protecting against pests
    B) Storing nutrients
    C) Absorbing light for photosynthesis
    D) Enhancing root growth

C. ANIMAL SCIENCE

1. **What is the primary purpose of animal husbandry?**
   A) To increase wild animal populations
   B) To manage and breed domesticated animals for human use
   C) To create animal habitats
   D) To preserve endangered species

2. **Which of the following is a major livestock species raised in the Philippines?**
   A) Elephant
   B) Pig
   C) Zebra
   D) Kangaroo

3. **What is the main dietary requirement for ruminant animals?**
   A) High protein
   B) High carbohydrates
   C) Fiber
   D) Low fat

4. **What is the primary function of vaccines in animal health management?**
   A) To enhance growth
   B) To prevent diseases
   C) To improve reproduction
   D) To increase feed efficiency

5. **Which breed of cattle is commonly raised in the Philippines for dairy production?**
   A) Brahman
   B) Jersey
   C) Angus
   D) Holstein

6. **What is the most common method of poultry production in the Philippines?**
   A) Free-range
   B) Intensive system
   C) Organic system
   D) Pasture-based

7. **Which of the following is a common parasite that affects livestock?**
   A) E. coli
   B) Coccidia
   C) Salmonella
   D) Listeria

8. **What is the primary advantage of rotational grazing?**
   A) Increased soil compaction
   B) Enhanced pasture recovery
   C) Higher feed costs
   D) Limited biodiversity

9. **Which nutrient is essential for building muscle in livestock?**
    A) Carbohydrates
    B) Fiber
    C) Protein
    D) Fats

10. **What is the main cause of heat stress in livestock?**
    A) Low feed intake
    B) High humidity and temperature
    C) Insufficient water
    D) Lack of shelter

11. **Which of the following practices is important for maintaining animal welfare?**
    A) Overcrowding
    B) Adequate space and shelter
    C) Ignoring veterinary care
    D) Low-quality feed

12. **What is the primary purpose of feed additives in animal diets?**
    A) To reduce feed costs
    B) To enhance growth and health
    C) To decrease feed intake
    D) To prolong shelf life

13. **Which animal is commonly referred to as a "bovine"?**
    A) Sheep
    B) Goat
    C) Cow
    D) Pig

14. **What is the primary product derived from goats in the Philippines?**
    A) Wool
    B) Milk
    C) Eggs
    D) Leather

15. **What is the term for the process of giving birth in pigs?**
    A) Calving
    B) Kidding
    C) Farrowing
    D) Lambing

16. **Which of the following is a common disease affecting poultry?**
    A) Foot and Mouth Disease
    B) Avian Influenza
    C) Bovine Tuberculosis
    D) Rift Valley Fever

17. **What is the primary source of energy in livestock diets?**
    A) Proteins
    B) Fats
    C) Carbohydrates

D) Vitamins

18. **Which breed of chicken is commonly raised for meat production?**
    A) Leghorn
    B) Rhode Island Red
    C) Broilers
    D) Bantam

19. **What is the primary benefit of deworming livestock?**
    A) Increased feed intake
    B) Improved growth and health
    C) Reduced breeding rates
    D) Higher mortality rates

20. **Which of the following is a common breed of sheep raised for wool in the Philippines?**
    A) Suffolk
    B) Merino
    C) Dorset
    D) Boer

21. **What is the role of the rumen in ruminant animals?**
    A) Digestion of fats
    B) Fermentation of fibrous feeds
    C) Absorption of nutrients
    D) Storage of water

22. **What is the term for the selection of animals for breeding based on desirable traits?**
    A) Genetic drift
    B) Selective breeding
    C) Inbreeding
    D) Crossbreeding

23. **What is the primary advantage of artificial insemination in livestock?**
    A) Increased genetic diversity
    B) Lower reproductive rates
    C) Higher animal mortality
    D) Reduced genetic variation

24. **Which nutrient is essential for the development of strong bones in animals?**
    A) Protein
    B) Calcium
    C) Iron
    D) Fiber

25. **What is the main role of the liver in livestock?**
    A) Digestion of cellulose
    B) Production of bile and detoxification
    C) Absorption of water
    D) Storage of fat

26. **Which of the following is a method for improving animal breeding?**
    A) Inbreeding
    B) Crossbreeding
    C) Random breeding
    D) Cloning

27. **What is the main purpose of using probiotics in livestock feed?**
    A) To enhance flavor
    B) To improve gut health
    C) To increase body weight
    D) To lower feed costs

28. **Which animal is known for its ability to produce milk rich in butterfat?**
    A) Jersey cow
    B) Angus cow
    C) Holstein cow
    D) Beefmaster

29. **What is the primary purpose of feed formulation?**
    A) To minimize costs
    B) To meet the nutritional needs of animals
    C) To reduce feed intake
    D) To improve growth rates

30. **What is the most common method of castrating male pigs?**
    A) Surgical castration
    B) Chemical castration
    C) Immunocastration
    D) Hormonal therapy

31. **Which of the following is a major factor affecting animal production in tropical climates?**
    A) Cold temperatures
    B) High humidity and heat
    C) Low rainfall
    D) Snowfall

32. **What is the primary benefit of providing adequate water to livestock?**
    A) Increased feed conversion
    B) Improved animal welfare and performance
    C) Reduced feed costs
    D) Higher reproductive rates

33. **Which breed of goat is primarily raised for meat in the Philippines?**
    A) Saanen
    B) Boer
    C) Nubian
    D) Alpine

34. **What is the primary purpose of using bedding in animal housing?**
    A) To provide nutrition
    B) To absorb moisture and provide comfort

C) To prevent heat stress
D) To enhance growth rates

35. **Which vitamin is crucial for blood clotting in animals?**
A) Vitamin A
B) Vitamin C
C) Vitamin K
D) Vitamin D

36. **What is the primary role of the pancreas in livestock?**
A) Producing bile
B) Digesting fiber
C) Producing digestive enzymes and hormones
D) Storing fat

37. **Which of the following practices helps prevent the spread of animal diseases?**
A) Biosecurity measures
B) Overcrowding
C) Feeding low-quality feed
D) Ignoring sanitation

38. **What is the primary cause of milk fever in dairy cows?**
A) Excessive protein intake
B) Calcium deficiency
C) Dehydration
D) Vitamin A deficiency

39. **What is the term for the process of feeding animals high-energy feeds before slaughter?**
A) Fattening
B) Breeding
C) Weaning
D) Grazing

40. **Which of the following is an important biosecurity measure for poultry farms?**
A) Allowing free access to wild birds
B) Regular disinfection of equipment and housing
C) Overcrowding chickens
D) Ignoring vaccination schedules

41. **What is the main benefit of feeding livestock a balanced diet?**
A) Increased risk of disease
B) Higher feed costs
C) Improved growth and productivity
D) Reduced water intake

42. **Which animal is often referred to as a "porcine"?**
A) Cow
B) Goat
C) Pig
D) Sheep

43. **What is the term for the natural behavior of animals to graze and forage?**
    A) Browsing
    B) Roaming
    C) Pasturing
    D) Feeding

44. **Which breed of sheep is known for its high meat production?**
    A) Merino
    B) Hampshire
    C) Suffolk
    D) Dorper

45. **What is the primary function of a livestock feedlot?**
    A) To breed animals
    B) To provide grazing land
    C) To fatten animals for market
    D) To produce milk

46. **Which disease is commonly associated with overfeeding grain to livestock?**
    A) Bloat
    B) Milk fever
    C) Foot and Mouth Disease
    D) Avian Influenza

47. **What is the primary use of the term "culling" in animal production?**
    A) Breeding animals
    B) Removing unfit animals from the herd
    C) Feeding practices
    D) Fattening for market

48. **Which vitamin is essential for vision in animals?**
    A) Vitamin A
    B) Vitamin D
    C) Vitamin E
    D) Vitamin K

49. **What is the main advantage of using artificial insemination in cattle?**
    A) Reduced genetic diversity
    B) Improved herd health
    C) Access to superior genetics
    D) Increased costs

50. **What is the primary source of protein in animal feed?**
    A) Grains
    B) Legumes
    C) Vegetables
    D) Fruits

51. **Which of the following is a sign of good animal welfare?**
    A) Aggressive behavior
    B) Healthy body condition and active behavior

C) Reduced feed intake
D) Excessive vocalization

52. **What is the role of enzymes in livestock digestion?**
    A) To provide energy
    B) To break down complex nutrients
    C) To absorb vitamins
    D) To store fat

53. **Which breed of cattle is known for its ability to thrive in tropical climates?**
    A) Holstein
    B) Brahman
    C) Hereford
    D) Angus

54. **What is the term for the process of raising animals in a controlled environment?**
    A) Pastoral farming
    B) Intensive farming
    C) Free-range farming
    D) Organic farming

55. **Which mineral is vital for preventing anemia in livestock?**
    A) Calcium
    B) Iron
    C) Zinc
    D) Copper

56. **What is the main role of a veterinarian in livestock management?**
    A) Marketing animals
    B) Breeding animals
    C) Disease prevention and treatment
    D) Feeding animals

57. **Which type of feed is typically high in energy?**
    A) Silage
    B) Hay
    C) Grains
    D) Forages

58. **What is the primary purpose of using a cattle squeeze chute?**
    A) To enhance feeding
    B) To confine animals for treatment or examination
    C) To increase weight gain
    D) To improve breeding

59. **Which of the following is a common poultry disease that affects respiratory health?**
    A) Newcastle disease
    B) Bovine spongiform encephalopathy
    C) Avian leukosis
    D) Foot and mouth disease

60. **What is the main advantage of pasture-based systems for raising livestock?**
    A) Higher feed costs
    B) Natural foraging behavior
    C) Increased disease risk
    D) Limited space

61. **Which livestock management practice helps reduce the risk of disease transmission?**
    A) Overcrowding
    B) Regular cleaning and sanitation
    C) Ignoring vaccination
    D) Mixed-species grazing

62. **What is the main component of a balanced diet for livestock?**
    A) Water
    B) Fiber
    C) Vitamins
    D) All of the above

63. **Which breed of chicken is primarily raised for egg production?**
    A) Plymouth Rock
    B) Cornish
    C) Leghorn
    D) Silkie

64. **What is the primary risk associated with feeding livestock moldy feed?**
    A) Improved digestion
    B) Toxicity and health problems
    C) Increased weight gain
    D) Enhanced flavor

65. **What is the term for the age at which a female animal is first bred?**
    A) Weaning age
    B) Maturity age
    C) Breeding age
    D) Fattening age

66. **Which factor is most critical for ensuring high-quality milk production?**
    A) Genetic selection
    B) Stress levels
    C) Feeding practices
    D) All of the above

67. **What is the purpose of a livestock nutritionist?**
    A) To market animals
    B) To breed animals
    C) To formulate diets that meet animal needs
    D) To treat diseases

68. **Which of the following is a common method of identifying livestock?**
    A) Branding
    B) Painting
    C) Feeding
    D) Fencing

69. **What is the role of a farrier in animal husbandry?**
    A) Breeding animals
    B) Managing feed
    C) Caring for hoof health in horses
    D) Vaccinating livestock

70. **Which type of feed is known for being high in fiber?**
    A) Grains
    B) Silage
    C) Forage
    D) Concentrates

71. **What is the term for the transition period before and after calving?**
    A) Lactation
    B) Gestation
    C) Dry period
    D) Transition period

72. **Which livestock species is most commonly used in integrated farming systems in the Philippines?**
    A) Cattle
    B) Goats
    C) Pigs
    D) Sheep

73. **What is the primary health benefit of regular vaccinations in livestock?**
    A) Increased weight gain
    B) Reduced feed costs
    C) Disease prevention
    D) Higher reproductive rates

74. **Which mineral is important for the prevention of milk fever in dairy cows?**
    A) Sodium
    B) Magnesium
    C) Potassium
    D) Calcium

75. **What is the term for the method of raising animals without the use of synthetic chemicals?**
    A) Organic farming
    B) Intensive farming
    C) Conventional farming
    D) Pastoral farming

76. **Which animal is primarily used for fiber production?**
    A) Goat (Angora)
    B) Cow
    C) Sheep (Merino)
    D) Both A and C

77. **What is the role of antioxidants in animal feed?**
    A) To enhance growth
    B) To prevent oxidative stress
    C) To increase fat content
    D) To improve palatability

78. **What is the main reason for providing shelter to livestock?**
    A) To increase feed intake
    B) To enhance comfort and protection from the elements
    C) To promote social interactions
    D) To reduce stress from handling

79. **Which poultry breed is known for its rapid growth and meat production?**
    A) Rhode Island Red
    B) Leghorn
    C) Cornish
    D) Silkie

80. **What is the primary purpose of rotational grazing?**
    A) To reduce animal weight
    B) To improve pasture health and productivity
    C) To increase feed costs
    D) To promote overcrowding

81. **Which type of animal is often referred to as "ruminant"?**
    A) Swine
    B) Cattle
    C) Poultry
    D) Equine

82. **What is the key factor in determining the quality of hay?**
    A) Color and moisture content
    B) Length of storage
    C) Type of grass used
    D) Region of production

83. **Which disease is characterized by swollen joints and lameness in livestock?**
    A) Mastitis
    B) Foot rot
    C) Brucellosis
    D) Coccidiosis

84. **What is the role of probiotics in animal health?**
    A) Increase feed intake
    B) Enhance nutrient absorption and gut health
    C) Prevent respiratory diseases
    D) Promote weight gain

85. **What is the most common method of deworming livestock?**
    A) Feeding hay
    B) Chemical anthelmintics
    C) Increasing water intake
    D) Organic herbs

86. **Which animal is known for producing the finest wool?**
    A) Rambouillet sheep
    B) Hampshire sheep
    C) Suffolk sheep
    D) Dorper sheep

87. **What is the main factor in achieving high reproductive performance in livestock?**
    A) Proper nutrition
    B) Genetics
    C) Health management
    D) All of the above

88. **Which feed is primarily used for young, growing animals?**
    A) High-fiber forage
    B) Concentrates
    C) Silage
    D) Mature pasture

89. **What is the primary cause of ketosis in dairy cows?**
    A) High protein intake
    B) Energy deficit
    C) Excessive body weight
    D) Lack of minerals

90. **Which breed of cattle is known for its high milk production?**
    A) Angus
    B) Jersey
    C) Hereford
    D) Charolais

91. **What is the primary goal of animal welfare programs?**
    A) Increase production efficiency
    B) Reduce labor costs
    C) Ensure humane treatment of animals
    D) Maximize profit margins

92. **What is the role of a livestock handler?**
    A) Breeding animals
    B) Managing nutrition
    C) Handling and caring for animals
    D) Marketing livestock

93. **Which feed component is most important for growth in young animals?**
    A) Carbohydrates
    B) Fats
    C) Protein

D) Fiber

94. **What is the primary cause of mastitis in dairy cows?**
A) Poor nutrition
B) Bacterial infection
C) Viral infection
D) Parasitic infection

95. **Which animal is primarily used for land reclamation and weed control?**
A) Horses
B) Sheep
C) Goats
D) Cattle

96. **What is the term for the period of time an animal is not producing milk?**
A) Lactation
B) Dry period
C) Gestation
D) Weaning

97. **Which animal is known for its ability to thrive on poor-quality forage?**
A) Horse
B) Goat
C) Cow
D) Sheep

98. **What is the main health benefit of proper hoof care in livestock?**
A) Increased feed intake
B) Improved weight gain
C) Prevention of lameness
D) Enhanced reproduction

99. **Which practice helps in the management of animal waste?**
A) Composting
B) Ignoring waste management
C) Overcrowding
D) Feeding low-quality feed

100. **What is the term for the amount of time an animal spends in a pen or housing unit?**
A) Housing duration
B) Stay period
C) Pen time
D) Residence time

D. AGRICULTURAL ENGINEERING

1. **What is the primary function of a plow in agricultural engineering?**
   A) Planting seeds
   B) Tilling soil
   C) Harvesting crops
   D) Irrigating fields

2. **Which of the following is an essential component of an irrigation system?**
   A) Tractor
   B) Pump
   C) Seeder
   D) Fertilizer

3. **What does CAD stand for in agricultural engineering design?**
   A) Computer Aided Design
   B) Crop Area Distribution
   C) Centralized Agricultural Data
   D) Controlled Agricultural Development

4. **Which type of irrigation system delivers water directly to the roots of plants?**
   A) Surface irrigation
   B) Drip irrigation
   C) Sprinkler irrigation
   D) Flood irrigation

5. **What is the purpose of soil compaction in agricultural engineering?**
   A) To increase aeration
   B) To reduce erosion
   C) To improve crop yield
   D) To increase soil density

6. **Which tool is commonly used for measuring soil moisture content?**
   A) Hygrometer
   B) Tensiometer
   C) Barometer
   D) Anemometer

7. **What type of machine is primarily used for harvesting rice in the Philippines?**
   A) Combine harvester
   B) Reaper
   C) Mower

D) Thresher

8. **Which of the following is a renewable energy source used in agricultural engineering?**
   A) Natural gas
   B) Biomass
   C) Coal
   D) Nuclear

9. **What is the primary advantage of using greenhouses in agriculture?**
   A) Reduced labor costs
   B) Extended growing seasons
   C) Increased land usage
   D) Decreased water use

10. **In agricultural engineering, what does the term "hydroponics" refer to?**
    A) Soil-based farming
    B) Growing plants in water without soil
    C) Organic farming
    D) Integrated pest management

11. **What is the purpose of a seed drill?**
    A) To fertilize soil
    B) To plant seeds at a specific depth and spacing
    C) To harvest crops
    D) To till the land

12. **Which structure is essential for livestock housing in tropical climates?**
    A) Insulated barn
    B) Open-sided shed
    C) Climate-controlled facility
    D) Concrete blockhouse

13. **What is the main benefit of contour farming?**
    A) Increased soil erosion
    B) Enhanced water conservation
    C) Higher planting density
    D) Reduced labor requirements

14. **Which of the following is a key advantage of using no-till farming?**
    A) Increased soil erosion
    B) Reduced soil structure
    C) Improved soil moisture retention
    D) Increased compaction

15. **What type of structure is used for rainwater harvesting?**
    A) Silo
    B) Reservoir
    C) Greenhouse

D) Grain bin

16. **Which agricultural machine is primarily used for tilling soil?**
    A) Harvester
    B) Disc plow
    C) Seeder
    D) Sprayer

17. **What is the main goal of agricultural drainage systems?**
    A) To increase water supply
    B) To manage excess water and improve soil conditions
    C) To reduce soil fertility
    D) To prevent erosion

18. **Which of the following is a key feature of precision agriculture?**
    A) Uniform crop management
    B) Variable rate technology
    C) Manual labor
    D) Randomized planting

19. **What does the term "agricultural mechanization" refer to?**
    A) Use of organic farming practices
    B) Implementation of machines and technology in farming
    C) Soil conservation techniques
    D) Crop rotation strategies

20. **Which method is often used to reduce soil erosion in sloped areas?**
    A) Deep plowing
    B) Terracing
    C) Monoculture planting
    D) Overgrazing

21. **What is the primary purpose of a grain dryer?**
    A) To enhance flavor
    B) To reduce moisture content in harvested grains
    C) To increase weight
    D) To cool grains

22. **Which of the following systems is designed to monitor environmental conditions in farming?**
    A) GPS
    B) Weather station
    C) Irrigation system
    D) Soil sampler

23. **What is a major benefit of using organic fertilizers?**
    A) Instant nutrient release
    B) Environmental sustainability
    C) High cost
    D) Toxicity to plants

24. **What type of irrigation is characterized by rotating sprinklers?**
    A) Surface irrigation
    B) Drip irrigation
    C) Sprinkler irrigation

D) Flood irrigation

25. **Which device is commonly used to measure soil pH?**
    A) Soil thermometer
    B) pH meter
    C) Soil auger
    D) Moisture meter

26. **What is the main purpose of a tillage implement?**
    A) To fertilize soil
    B) To prepare seedbeds and control weeds
    C) To harvest crops
    D) To water plants

27. **Which of the following is a sustainable practice in agricultural engineering?**
    A) Overusing chemical fertilizers
    B) Crop rotation
    C) Monoculture
    D) Soil depletion

28. **What is the primary function of a harvester?**
    A) To plant seeds
    B) To till soil
    C) To cut and gather crops
    D) To irrigate fields

29. **Which of the following best describes hydroponic systems?**
    A) Soil-based growing methods
    B) Water-based growing methods
    C) Outdoor farming practices
    D) Monoculture farming

30. **What is the term for the process of applying chemicals to control pests and diseases?**
    A) Fertilization
    B) Irrigation
    C) Pest management
    D) Crop rotation

31. **Which type of tractor is best suited for small-scale farming in the Philippines?**
    A) Utility tractor
    B) Row-crop tractor
    C) Track tractor
    D) Garden tractor

32. **What is the purpose of using cover crops?**
    A) To increase soil erosion
    B) To improve soil health and prevent weeds
    C) To reduce biodiversity
    D) To decrease nutrient availability

33. **Which of the following is a benefit of using conservation tillage?**
    A) Increased soil erosion
    B) Reduced water retention

C) Improved soil structure
D) Higher labor costs

34. **What is the primary function of a windbreak in agriculture?**
    A) To increase crop yield
    B) To reduce wind speed and protect crops
    C) To provide shade
    D) To increase soil temperature

35. **Which technology is often used in precision agriculture to gather data about crop conditions?**
    A) Drones
    B) Tractors
    C) Plows
    D) Seeders

36. **What is the purpose of a soil conservation program?**
    A) To increase chemical use
    B) To reduce soil degradation and erosion
    C) To promote monoculture
    D) To enhance pest populations

37. **Which of the following is a key factor in designing an efficient irrigation system?**
    A) Crop rotation
    B) Water availability
    C) Soil texture
    D) All of the above

38. **What is the role of a soil survey?**
    A) To evaluate water sources
    B) To assess soil properties and suitability for crops
    C) To measure air quality
    D) To test crop yield

39. **What is the primary advantage of using renewable energy in agriculture?**
    A) Decreased costs
    B) Environmental sustainability
    C) Increased labor needs
    D) Limited application

40. **Which piece of equipment is essential for mixing fertilizers and soil amendments?**
    A) Tiller
    B) Spreaders
    C) Cultivator
    D) Seeder

41. **What is the main purpose of a crop rotation system?**
    A) To increase soil degradation

B) To improve soil fertility and reduce pests
C) To promote monoculture
D) To decrease biodiversity

42. **Which agricultural engineering practice helps improve drainage in wet soils?**
    A) Tillage
    B) Raised beds
    C) Cover cropping
    D) Irrigation

43. **What is the primary role of a forage harvester?**
    A) To till soil
    B) To harvest forage crops
    C) To plant seeds
    D) To apply pesticides

44. **Which type of equipment is used to plant seeds in rows?**
    A) Seeder
    B) Tiller
    C) Harvester
    D) Spreader

45. **What is the primary objective of agricultural drainage?**
    A) To improve soil moisture
    B) To remove excess water
    C) To retain nutrients
    D) To increase soil erosion

46. **Which of the following is used to enhance the efficiency of water usage in agriculture?**
    A) Flood irrigation
    B) Drip irrigation
    C) Surface irrigation
    D) Overhead irrigation

47. **What is the main function of a cultivator?**
    A) To plant seeds
    B) To break up soil and control weeds
    C) To harvest crops
    D) To irrigate fields

48. **Which agricultural practice helps in reducing soil compaction?**
    A) Continuous tillage
    B) Use of cover crops
    C) Overgrazing
    D) High traffic from machinery

49. **What is the primary goal of sustainable agriculture?**
    A) Maximize profit
    B) Minimize labor

C) Maintain ecological balance
D) Increase chemical use

50. **Which system is designed for collecting and storing rainwater?**
A) Irrigation system
B) Hydroponics
C) Rainwater harvesting system
D) Drainage system

51. **What type of equipment is commonly used for soil sampling?**
A) Soil auger
B) Seeder
C) Tiller
D) Cultivator

52. **Which irrigation method uses a network of pipes and emitters to deliver water?**
A) Surface irrigation
B) Sprinkler irrigation
C) Drip irrigation
D) Flood irrigation

53. What is the primary purpose of irrigation in agriculture?
A) Soil erosion control
B) Pest management
C) Water supply for crops
D) Harvest optimization

54. **Which of the following is a common type of irrigation system used in the Philippines?**
A) Drip irrigation
B) Subsurface irrigation
C) Flood irrigation
D) Hydroponic irrigation

55. **What is the purpose of soil conservation techniques?**
A) Increase crop yield
B) Prevent soil erosion
C) Improve pest resistance
D) Enhance fertilizer absorption

56. **What is the recommended slope for terracing in mountainous areas?**
A) 1-5%
B) 5-10%
C) 10-20%
D) 20-30%

57. **Which of the following is a disadvantage of monocropping?**
A) Increased yield
B) Soil nutrient depletion
C) Pest control
D) Simplified farming

58. **What type of technology is commonly used to improve pest management?**
A) Manual weeding

B) Chemical pesticides
C) Integrated Pest Management (IPM)
D) Crop rotation

59. **What is the main advantage of using organic fertilizers?**
A) Immediate nutrient availability
B) Long-term soil health improvement
C) Cost-effectiveness
D) Higher nitrogen content

60. **In agricultural engineering, what is the significance of CAD (Computer-Aided Design)?**
A) Reduces labor costs
B) Facilitates design and planning of agricultural structures
C) Increases crop yield
D) Minimizes pest occurrence

61. **Which of the following is an effective way to conserve water in agriculture?**
A) Open field irrigation
B) Rainwater harvesting
C) Excessive tillage
D) Overwatering

62. **What is the role of a soil engineer in agriculture?**
A) Design irrigation systems
B) Manage pest control
C) Assess and improve soil properties
D) Control crop diseases

63. **Which of the following crops is commonly grown in the Philippines using agroforestry systems?**
A) Rice
B) Corn
C) Coffee
D) Sugarcane

64. **What is the primary benefit of using greenhouse technology in agriculture?**
A) Reduces labor requirements
B) Controls environmental conditions
C) Lowers water usage
D) Increases pest prevalence

65. **Which machine is commonly used for land preparation in the Philippines?**
A) Harvester
B) Tractor
C) Sprayer
D) Seeder

66. **What is the main goal of precision agriculture?**
A) Increase fertilizer use

B) Maximize crop yield through data analysis
C) Reduce machinery costs
D) Eliminate the need for labor

67. **Which of the following is a key component of sustainable agriculture?**
A) Chemical dependence
B) Biodiversity
C) Monoculture
D) Intensive tillage

68. **What is the primary purpose of drainage systems in agricultural fields?**
A) Increase soil moisture
B) Prevent waterlogging
C) Enhance nutrient absorption
D) Improve pest control

69. **Which of the following tools is essential for measuring soil moisture?**
A) Tiller
B) Soil moisture sensor
C) Seeder
D) Cultivator

70. **In agricultural engineering, what does "farm mechanization" refer to?**
A) Use of manual labor only
B) Application of machines in farming
C) Organic farming methods
D) Crop rotation practices

71. **Which irrigation method is most efficient in terms of water usage?**
A) Surface irrigation
B) Drip irrigation
C) Flood irrigation
D) Sprinkler irrigation

72. **What type of soil is ideal for rice cultivation in the Philippines?**
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Saline soil

73. **Which of the following is a renewable energy source that can be utilized in agriculture?**
A) Natural gas
B) Solar power
C) Coal
D) Nuclear energy

74. **What is the main disadvantage of using chemical pesticides?**
A) High effectiveness
B) Environmental pollution

C) Quick action
D) Ease of application

75. **What is the function of a tiller in agriculture?**
A) Harvesting crops
B) Planting seeds
C) Soil preparation
D) Watering plants

76. **Which agricultural practice helps maintain soil fertility over time?**
A) Intensive monoculture
B) Crop rotation
C) Heavy chemical use
D) Overgrazing

77. **What is the primary focus of agricultural research in the Philippines?**
A) Increasing chemical use
B) Sustainable farming practices
C) Monoculture techniques
D) Traditional farming methods

78. **Which of the following factors affects crop yield the most?**
A) Weather conditions
B) Soil type
C) Pest management
D) Crop variety

79. **What is the purpose of a windbreak in agriculture?**
A) Enhance soil fertility
B) Protect crops from wind damage
C) Increase sunlight exposure
D) Control pest populations

80. **Which crop is most widely cultivated in the Philippines?**
A) Corn
B) Rice
C) Sugarcane
D) Pineapple

81. **Which tool is commonly used for measuring soil pH?**
A) Tiller
B) pH meter
C) Soil compactor
D) Seeder

82. **What is the main goal of agroecology?**
A) Maximize chemical inputs
B) Promote ecological sustainability
C) Increase crop uniformity
D) Focus on monoculture practices

83. **Which type of energy is primarily used in modern agricultural machinery?**
A) Solar energy
B) Diesel fuel
C) Wind energy

D) Human power

84. **What is the significance of plant breeding in agriculture?**
A) Increase pesticide use
B) Develop improved crop varieties
C) Reduce labor costs
D) Promote monoculture

85. **What is a common consequence of soil salinity in agriculture?**
A) Increased crop growth
B) Reduced crop yield
C) Improved soil structure
D) Enhanced water retention

86. **Which of the following practices is essential for sustainable livestock farming?**
A) Overgrazing
B) Rotational grazing
C) High-density feeding
D) Monoculture pastures

87. **What type of pest management strategy involves using natural predators?**
A) Chemical control
B) Cultural practices
C) Biological control
D) Mechanical control

88. **Which factor is most important for determining the viability of a crop?**
A) Soil texture
B) Seed quality
C) Local climate
D) Market demand

89. **What is the primary goal of agricultural extension services?**
A) Increase chemical sales
B) Provide farmers with information and education
C) Promote monoculture practices
D) Control market prices

90. **Which of the following is a common method for controlling soil erosion?**
A) Monocropping
B) Cover cropping
C) Excessive tillage
D) Chemical fertilizers

91. **What is the impact of climate change on agriculture?**
A) Increased crop diversity
B) Improved weather patterns
C) Altered growing seasons
D) Consistent yields

92. **What is the main purpose of a moisture retention strategy in agriculture?**
A) Reduce nutrient loss
B) Enhance pest control
C) Improve water availability for crops

D) Increase machinery efficiency

93. **Which of the following is a key advantage of hydroponics?**
A) Requires large land areas
B) Involves soil usage
C) Reduces water consumption
D) Needs high pesticide application

94. **What is the main environmental concern associated with intensive agriculture?**
A) Increased biodiversity
B) Soil depletion and pollution
C) Enhanced crop yields
D) Improved food security

95. **Which engineering principle is applied in the design of agricultural machinery?**
A) Structural analysis
B) Chemical engineering
C) Electrical engineering
D) Environmental engineering

96. **What is the primary benefit of using organic pesticides?**
A) Immediate action
B) Environmental safety
C) Higher efficacy
D) Lower cost

97. **Which type of crop is most suitable for intercropping systems?**
A) High nutrient-demand crops
B) Legumes and cereals
C) Monoculture varieties
D) Perennial crops only

98. **What is the primary challenge faced by smallholder farmers in the Philippines?**
A) Excessive land ownership
B) Limited access to technology
C) High market prices
D) Abundant resources

99. **Which of the following is a benefit of agroforestry?**
A) Decreased biodiversity
B) Enhanced soil erosion
C) Improved carbon sequestration
D) Increased land degradation

100. **What is the role of drainage in rice farming?**
A) Increase soil salinity
B) Control flooding
C) Enhance waterlogging
D) Promote weed growth

E. SOIL SCIENCE

1. **What is the primary component of soil?**
   A) Air
   B) Water
   C) Minerals
   D) Organic matter

2. **Which soil type is best for agriculture in the Philippines?**
   A) Sandy soil
   B) Clayey soil
   C) Loamy soil
   D) Saline soil

3. **What is the pH range considered optimal for most crops?**
   A) 3.0 - 4.0
   B) 4.5 - 5.5
   C) 6.0 - 7.0
   D) 8.0 - 9.0

4. **What is soil erosion?**
   A) Accumulation of soil
   B) Loss of soil due to water or wind
   C) Soil fertility improvement
   D) Soil compaction

5. **Which factor contributes most to soil formation?**
   A) Time
   B) Plants
   C) Animals
   D) Water

6. **What does the term "soil texture" refer to?**
   A) Soil color
   B) Soil moisture
   C) Particle size distribution
   D) Soil temperature

7. **What is the main advantage of using cover crops?**
   A) Increased soil erosion
   B) Nutrient depletion
   C) Soil fertility improvement

D) Pesticide requirement

8. **Which soil horizon is rich in organic matter?**
   A) O horizon
   B) A horizon
   C) B horizon
   D) C horizon

9. **What role do earthworms play in soil health?**
   A) Decrease soil aeration
   B) Increase soil compaction
   C) Enhance soil structure and fertility
   D) Promote soil erosion

10. **Which nutrient is essential for plant growth and is often deficient in tropical soils?**
    A) Nitrogen
    B) Potassium
    C) Phosphorus
    D) Magnesium

11. **What is the process of adding organic matter to soil called?**
    A) Tilling
    B) Composting
    C) Aeration
    D) Mulching

12. **Which type of soil is most prone to waterlogging?**
    A) Sandy soil
    B) Clayey soil
    C) Loamy soil
    D) Silty soil

13. **What is the primary function of soil microorganisms?**
    A) Compaction of soil
    B) Breakdown of organic matter
    C) Increase soil salinity
    D) Soil erosion

14. **What does soil permeability refer to?**
    A) Soil fertility
    B) Soil texture
    C) Ability of soil to transmit water
    D) Soil temperature

15. **Which soil type has the highest water retention capacity?**
    A) Sandy soil
    B) Clayey soil
    C) Loamy soil
    D) Silty soil

16. **What is soil compaction?**
    A) Increase in organic matter
    B) Reduction of soil volume and density
    C) Increase in soil aeration
    D) Increase in soil porosity

17. **Which practice helps prevent soil erosion?**
    A) Deforestation
    B) Overgrazing
    C) Contour farming
    D) Intensive tillage

18. **What is the term for the ability of soil to hold nutrients?**
    A) Soil pH
    B) Cation exchange capacity (CEC)
    C) Soil texture
    D) Soil structure

19. **Which soil amendment is commonly used to improve soil structure?**
    A) Peat moss
    B) Gypsum
    C) Lime
    D) Sand

20. **What is the primary cause of soil salinization?**
    A) Excessive rainfall
    B) Deforestation
    C) Poor irrigation practices
    D) Crop rotation

21. **What type of soil is typically found in volcanic regions of the Philippines?**
    A) Alluvial soil
    B) Loamy soil
    C) Andisol
    D) Podzol

22. **Which of the following is a sign of nutrient deficiency in plants?**
    A) Green leaves
    B) Stunted growth
    C) Abundant flowers
    D) Increased fruit yield

23. **What is the process by which nutrients are washed away from the soil?**
    A) Leaching
    B) Erosion
    C) Sedimentation
    D) Compaction

24. **Which soil property affects its ability to retain moisture?**
    A) Soil texture
    B) Soil color
    C) Soil temperature
    D) Soil density

25. **What is a common symptom of soil compaction in crops?**

A) Increased yield
B) Root growth restriction
C) Enhanced aeration
D) Increased organic matter

26. **Which of the following practices improves soil aeration?**
A) Tilling
B) Overgrazing
C) Excessive irrigation
D) Cover cropping

27. **What is the primary purpose of soil testing?**
A) Determine soil color
B) Assess soil structure
C) Evaluate nutrient status and pH
D) Measure soil temperature

28. **Which nutrient is most mobile in the soil?**
A) Nitrogen
B) Phosphorus
C) Potassium
D) Calcium

29. **What is the effect of soil acidity on nutrient availability?**
A) Increases availability of all nutrients
B) Decreases availability of certain nutrients
C) Has no effect
D) Increases soil salinity

30. **Which soil horizon is known for its accumulation of leached materials?**
A) O horizon
B) A horizon
C) B horizon
D) C horizon

31. **What does the term "soil fertility" refer to?**
A) Soil structure
B) Soil texture
C) Ability to support plant growth
D) Soil moisture content

32. **Which crop is often used as a cover crop to improve soil health?**
A) Corn
B) Wheat
C) Legumes
D) Rice

33. **What is the main function of lime in soil management?**
A) Increase acidity
B) Decrease nutrient availability
C) Raise soil pH
D) Promote erosion

34. **Which soil type is most susceptible to wind erosion?**

A) Clayey soil
B) Loamy soil
C) Sandy soil
D) Silty soil

35. **What is the primary benefit of mulching?**
A) Decreases soil moisture
B) Reduces soil temperature
C) Conserves soil moisture
D) Increases pest activity

36. **What is the role of mycorrhizal fungi in soil?**
A) Decompose organic matter
B) Fix nitrogen
C) Enhance nutrient uptake for plants
D) Promote soil erosion

37. **What is a common effect of deforestation on soil?**
A) Increased soil fertility
B) Decreased erosion
C) Loss of topsoil
D) Enhanced biodiversity

38. **What does the term "soil structure" refer to?**
A) Color of soil
B) Arrangement of soil particles
C) Moisture content
D) Soil temperature

39. **Which nutrient is crucial for photosynthesis?**
A) Nitrogen
B) Phosphorus
C) Potassium
D) Iron

40. **What practice can improve soil aeration?**
A) Excessive watering
B) Tillage
C) Deforestation
D) Compacting

41. **What is the most effective way to reduce soil erosion on slopes?**
A) Strip cropping
B) Monoculture
C) Deforestation
D) Excessive tillage

42. **Which soil amendment is used to improve drainage in heavy soils?**
A) Gypsum
B) Peat moss
C) Lime
D) Sand

43. **What is the role of potassium in plant growth?**

A) Root development
B) Photosynthesis
C) Water regulation and enzyme activation
D) Nitrogen fixation

44. **What is the primary cause of nutrient runoff into water bodies?**
A) Excessive rainfall
B) Fertilizer application
C) Soil compaction
D) Crop rotation

45. **Which soil property is critical for understanding erosion potential?**
A) Soil color
B) Soil texture
C) Soil temperature
D) Soil moisture

46. **Which crop is best for reclaiming degraded soils?**
A) Corn
B) Legumes
C) Rice
D) Wheat

47. **What is the effect of soil salinity on plant growth?**
A) Promotes growth
B) Enhances nutrient uptake
C) Reduces growth and yield
D) Has no effect

48. **What is the primary goal of sustainable soil management?**
A) Maximize short-term yields
B) Maintain soil health for future generations
C) Reduce labor costs
D) Increase chemical inputs

49. **What is the effect of compaction on soil porosity?**
A) Increases porosity
B) Decreases porosity
C) Has no effect
D) Changes soil color

50. **Which of the following best describes the "A horizon" of soil?**
A) Unconsolidated material
B) Organic layer
C) Topsoil rich in organic matter
D) Subsoil layer

51. **Which soil property primarily influences water infiltration?**
A) Soil density
B) Soil texture
C) Soil color
D) Soil temperature

52. **What is the primary benefit of rotating crops?**

A) Decreases soil fertility
B) Reduces pest and disease pressure
C) Requires more fertilizer
D) Promotes monoculture

53. **What is the effect of excessive tillage on soil?**
A) Improves soil structure
B) Increases organic matter
C) Leads to soil degradation
D) Enhances water retention

54. **Which soil property is important for nutrient retention?**
A) Soil color
B) Cation exchange capacity (CEC)
C) Soil moisture
D) Soil temperature

55. **What is the primary function of gypsum in soil management?**
A) Increase soil acidity
B) Improve drainage and reduce compaction
C) Add nitrogen
D) Increase soil fertility

56. **Which nutrient is most important for root development?**
A) Nitrogen
B) Phosphorus
C) Potassium
D) Sulfur

57. **What is a common effect of acid rain on soil?**
A) Decreases soil salinity
B) Increases nutrient availability
C) Leaches essential nutrients
D) Improves soil structure

58. **What is the term for the practice of growing different crops in succession?**
A) Intercropping
B) Crop rotation
C) Monoculture
D) Cover cropping

59. **Which soil type has the highest infiltration rate?**
A) Clayey soil
B) Silty soil
C) Sandy soil
D) Loamy soil

60. **What is the primary cause of nutrient depletion in tropical soils?**
A) Low rainfall
B) High temperature
C) Leaching due to high rainfall
D) Poor soil management

61. **What is the main purpose of using green manure in soil management?**

A) Reduce soil temperature
B) Increase soil acidity
C) Enhance soil fertility
D) Promote erosion

62. **Which of the following is a characteristic of acidic soils?**
A) High nutrient retention
B) Low availability of essential nutrients
C) Increased crop yield
D) Enhanced microbial activity

63. **What practice is effective for improving soil organic matter content?**
A) Monoculture
B) Continuous cropping
C) Crop rotation
D) Intensive tillage

64. **Which nutrient is essential for flowering and fruiting?**
A) Nitrogen
B) Phosphorus
C) Potassium
D) Calcium

65. **What is the effect of excessive nitrogen on soil?**
A) Improves soil health
B) Increases soil acidity
C) Decreases organic matter
D) Enhances microbial activity

66. **Which soil amendment is commonly used to reduce soil acidity?**
A) Gypsum
B) Lime
C) Sand
D) Peat

67. **What is the primary purpose of using soil mulches?**
A) Promote weed growth
B) Retain soil moisture and suppress weeds
C) Increase soil temperature
D) Enhance soil erosion

68. **What type of soil is characterized by a high organic matter content and good water retention?**
A) Sandy soil
B) Clayey soil
C) Peaty soil
D) Saline soil

69. **Which agricultural practice can lead to soil degradation?**
A) Crop rotation
B) No-till farming
C) Overgrazing
D) Cover cropping

70. **What does the term "soil profile" refer to?**
    A) Composition of soil
    B) Vertical section of soil layers
    C) Soil temperature changes
    D) Soil color variations

71. **What is the primary function of soil in agriculture?**
    A) Water storage
    B) Plant growth medium
    C) Habitat for animals
    D) Source of minerals

72. **What is the role of nitrogen-fixing bacteria in the soil?**
    A) Decompose organic matter
    B) Fix atmospheric nitrogen into usable forms for plants
    C) Promote soil acidity
    D) Increase soil erosion

73. **What is the term for the layer of soil that is leached and depleted of nutrients?**
    A) A horizon
    B) E horizon
    C) B horizon
    D) C horizon

74. **Which agricultural practice improves soil biodiversity?**
    A) Monoculture
    B) Crop rotation
    C) Excessive tillage
    D) Chemical fertilizers

75. **What is the purpose of soil conservation practices?**
    A) Increase soil erosion
    B) Maintain soil quality and prevent degradation
    C) Promote monoculture
    D) Reduce water retention

76. **Which type of soil is most beneficial for rice cultivation in the Philippines?**
    A) Sandy soil
    B) Clayey soil
    C) Loamy soil
    D) Saline soil

77. **What is a common effect of soil salinity on crops?**
    A) Increased yield
    B) Reduced growth
    C) Enhanced nutrient uptake
    D) Improved soil structure

78. **What is the primary benefit of composting organic waste?**
    A) Increases soil salinity
    B) Reduces soil nutrients
    C) Improves soil fertility
    D) Promotes soil erosion

79. **Which soil property affects its ability to support plant roots?**
    A) Soil moisture
    B) Soil density
    C) Soil texture
    D) Soil color

80. **What is the effect of heavy rainfall on tropical soils?**
    A) Increased nutrient retention
    B) Nutrient leaching and erosion
    C) Enhanced crop yield
    D) Decreased acidity

81. **What is the term for the process of water moving through the soil?**
    A) Evaporation
    B) Percolation
    C) Infiltration
    D) Capillarity

82. **Which crop is known for improving nitrogen levels in the soil?**
    A) Corn
    B) Soybeans
    C) Barley
    D) Oats

83. **What is the main purpose of soil erosion control methods?**
    A) Increase soil nutrients
    B) Reduce water infiltration
    C) Prevent soil degradation
    D) Promote monoculture

84. **What is the primary benefit of using cover crops?**
    A) Reduces soil fertility
    B) Prevents erosion and enhances soil health
    C) Promotes monoculture
    D) Increases pest populations

85. **Which nutrient is crucial for seed germination?**
    A) Nitrogen
    B) Phosphorus
    C) Potassium
    D) Calcium

86. **What is the role of soil microorganisms in the ecosystem?**
    A) Decompose organic matter and recycle nutrients
    B) Compete with plants for nutrients
    C) Increase soil salinity
    D) Decrease soil fertility

87. **What is the effect of monoculture on soil health?**
    A) Improves biodiversity
    B) Enhances nutrient cycling
    C) Decreases soil fertility over time
    D) Increases soil moisture

88. **What practice can improve soil texture?**

A) Overgrazing
B) Adding organic matter
C) Excessive tillage
D) Chemical fertilization

89. **Which type of soil is most suitable for vegetable gardening?**
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Saline soil

90. **What is the role of organic matter in soil?**
A) Decrease soil fertility
B) Improve soil structure and fertility
C) Increase soil salinity
D) Reduce water retention

91. **What is the effect of soil compaction on plant growth?**
A) Promotes root expansion
B) Increases nutrient availability
C) Restricts root growth and water infiltration
D) Improves aeration

92. **Which soil amendment can improve soil pH?**
A) Compost
B) Peat moss
C) Lime
D) Gypsum

93. **What is the primary cause of soil degradation?**
A) Proper management practices
B) Overuse of fertilizers and pesticides
C) Crop rotation
D) Organic farming

94. **What is the main benefit of no-till farming?**
A) Increases soil erosion
B) Improves soil structure and reduces compaction
C) Requires more water
D) Promotes monoculture

95. **Which nutrient is essential for overall plant growth and development?**
A) Nitrogen
B) Phosphorus
C) Potassium
D) All of the above

96. **What is the main objective of soil management practices?**
A) Maximize short-term yields
B) Enhance soil health and productivity
C) Increase chemical inputs
D) Promote monoculture

97. **What is the role of earthworms in soil health?**

A) Increase soil acidity
B) Decrease nutrient availability
C) Enhance soil structure and fertility
D) Compete with plants for nutrients

98. **What is the primary cause of soil salinization?**
A) Excessive rainfall
B) Over-irrigation and poor drainage
C) Natural soil formation processes
D) Crop rotation

99. **What practice is effective for improving soil biodiversity?**
A) Monoculture
B) Cover cropping
C) Excessive tillage
D) Chemical fertilizers

100. **What is the role of soil in the water cycle?**
A) Increases evaporation
B) Acts as a water storage medium
C) Decreases rainfall
D) Reduces groundwater recharge

F. PLANT PATHOLOGY

1. **What is the primary cause of plant diseases?**
   A) Nutrient deficiencies
   B) Environmental stress
   C) Pathogenic organisms
   D) Soil erosion

2. Which of the following is a common fungal disease affecting rice?
   A) Rice blast
   B) Bacterial blight
   C) Downy mildew
   D) Root knot

3. What is the main vector for the transmission of viral diseases in plants?
   A) Soil
   B) Insects
   C) Water
   D) Wind

4. Which plant disease is characterized by yellowing and stunted growth?
   A) Downy mildew
   B) Powdery mildew
   C) Viral infection
   D) Root rot

5. What is the term for the study of plant diseases?
   A) Mycology
   B) Entomology
   C) Plant pathology
   D) Agronomy

6. Which method is commonly used to manage fungal diseases?
   A) Fertilization
   B) Biological control
   C) Irrigation
   D) Crop rotation

7. What is the role of fungicides in plant disease management?
   A) Enhance growth
   B) Control fungal infections
   C) Increase nutrient availability

D) Improve soil structure

8. Which of the following is a bacterial disease that affects rice?

A) Downy mildew
B) Bacterial blight
C) Fusarium wilt
D) Root rot

9. **What is the significance of crop rotation in disease management?**

A) Decreases soil fertility
B) Disrupts pathogen life cycles
C) Reduces labor costs
D) Enhances pest populations

10. Which disease is caused by a nematode in plants?

A) Root knot
B) Leaf spot
C) Downy mildew
D) Bacterial wilt

11 **What is the term for a disease that causes wilting and yellowing of leaves?**

A) Chlorosis
B) Necrosis
C) Blight
D) Wilt

12. Which practice helps in the prevention of seed-borne diseases?

A) Using infected seeds
B) Seed treatment
C) Excessive irrigation
D) Over-fertilization

13. What is the primary symptom of powdery mildew?

A) Yellowing of leaves
B) White, powdery spots on leaves
C) Leaf curling
D) Root rot

14. Which of the following is NOT a method of disease management?

A) Cultural practices
B) Chemical control
C) Soil erosion
D) Biological control

15. **What type of pathogen causes the disease "frost injury"?**

A) Fungal
B) Bacterial
C) Viral
D) Environmental

16. Which plant is susceptible to late blight?

A) Corn
B) Tomato
C) Rice
D) Soybean

17. What is the primary way to manage bacterial wilt?
A) Improved drainage
B) Crop rotation
C) Fungicides
D) Biological control

18. **Which of the following symptoms indicates a viral infection?**
A) Water-soaked lesions
B) Leaf curl and mottling
C) Root decay
D) Wilting

19. **What is a common method of diagnosing plant diseases?**
A) Visual inspection
B) Soil testing
C) Weather forecasting
D) Nutrient analysis

20. Which organism is responsible for the disease known as "frost damage"?
A) Virus
B) Fungi
C) Environmental conditions
D) Bacteria

21 **What is the role of the stomata in plant health?**
A) Nutrient absorption
B) Gas exchange
C) Water retention
D) Root growth

22. Which disease is characterized by black streaks on the leaves of maize?
A) Leaf rust
B) Gray leaf spot
C) Southern corn leaf blight
D) Fusarium wilt

23. What type of pathogen is responsible for bacterial blight in rice?
A) Virus
B) Fungus
C) Bacteria
D) Nematode

24. What is the function of a disease-resistant variety in crop production?
A) Decreases yield
B) Increases vulnerability to diseases
C) Enhances plant health and yield
D) Requires more inputs

25. Which of the following is a primary method of controlling nematodes?

A) Soil solarization
B) Crop rotation
C) Chemical fumigation
D) All of the above

26. What is the major impact of plant diseases on agriculture?
A) Increased yields
B) Decreased labor costs
C) Reduced crop yields and quality
D) Improved soil fertility

27. What is the term for the manipulation of plant environments to prevent disease?
A) Genetic engineering
B) Cultural practices
C) Biological control
D) Chemical management

28. Which of the following diseases is known to be seed-borne?
A) Bacterial wilt
B) Fusarium wilt
C) Downy mildew
D) Damping-off

29. Which of the following factors contributes to the spread of plant diseases?
A) Adequate sunlight
B) Overcrowding of plants
C) Balanced fertilization
D) Proper irrigation

30. What is the primary characteristic of biotrophic pathogens?
A) They kill their host
B) They require living host tissue to survive
C) They cause root rot
D) They thrive in dead matter

31 **Which of the following is an example of a viral disease in cassava?**
A) Cassava mosaic
B) Bacterial wilt
C) Root rot
D) Leaf blight

32. What is the purpose of using resistant varieties in crop production?
A) To increase the cost of production
B) To minimize the use of pesticides
C) To encourage the spread of diseases
D) To limit crop diversity

33. Which of the following best describes a necrotrophic pathogen?
A) They require living host tissue.
B) They thrive on dead or decaying tissue.
C) They do not cause visible symptoms.
D) They induce systemic resistance in hosts.

34. Which condition favors the development of fungal diseases?

A) Low humidity
B) High temperatures
C) Excessive moisture
D) Bright sunlight

35. What is the primary management strategy for root rot diseases?
A) Excessive fertilization
B) Improved drainage
C) Overcrowding
D) High soil moisture

36. Which disease is known to cause a 'wilt' symptom in plants?
A) Root rot
B) Damping-off
C) Fusarium wilt
D) Leaf spot

37. What role do environmental conditions play in plant diseases?
A) They have no effect.
B) They can either exacerbate or mitigate disease severity.
C) They only cause diseases.
D) They are less important than pathogens.

38. Which method is used to control bacterial diseases in crops?
A) Crop rotation
B) Fungicides
C) Soil sterilization
D) Chemical bactericides

39. What symptom is indicative of bacterial infections?
A) Powdery growth
B) Water-soaked lesions
C) Wilting
D) Leaf curl

40. What is the purpose of using mulch in plant disease management?
A) Enhance nutrient availability
B) Control moisture levels and reduce disease pressure
C) Promote weed growth
D) Increase soil temperature

41 **Which organism is responsible for coffee leaf rust?**
A) Fungi
B) Bacteria
C) Nematodes
D) Viruses

42. What is a common symptom of root-knot nematode infestation?
A) Yellowing of leaves
B) Galls or nodules on roots
C) Wilting
D) Necrosis

43. What role do plant growth-promoting rhizobacteria (PGPR) play in agriculture?
A) They cause diseases.

B) They promote plant growth and suppress pathogens.
C) They increase soil salinity.
D) They decompose organic matter.

44. Which disease is characterized by a distinct 'mosaic' pattern on leaves?
A) Fusarium wilt
B) Bacterial blight
C) Viral infections
D) Root rot

45. Which plant is commonly affected by rust diseases?
A) Corn
B) Wheat
C) Rice
D) Soybean

46. What is the effect of high nitrogen levels on certain diseases?
A) It reduces disease incidence.
B) It increases disease susceptibility.
C) It has no effect.
D) It eliminates pathogens.

47. Which of the following is an effective method for managing downy mildew?
A) Excessive irrigation
B) Crop rotation with non-hosts
C) High nitrogen fertilization
D) Overcrowding

48. What is the primary benefit of integrated pest management (IPM)?
A) Increases chemical pesticide use
B) Reduces overall pest and disease pressure sustainably
C) Requires extensive resources
D) Relies solely on biological control

49. Which disease management strategy involves the use of natural predators?
A) Cultural control
B) Biological control
C) Chemical control
D) Mechanical control

50. Which symptom is commonly associated with bacterial wilt in crops?
A) Leaf yellowing
B) Water-soaked lesions
C) Sudden wilting
D) Leaf curling

51 **What is the term for the stage in a pathogen's life cycle that can survive unfavorable conditions?**
A) Pathogen
B) Spore
C) Host
D) Vector

52. What is the effect of planting resistant crop varieties on disease incidence?

A) Increases disease severity
B) Reduces disease incidence
C) Has no effect
D) Promotes more severe outbreaks

53. What is the primary symptom of a phosphorus deficiency in plants?
A) Leaf yellowing
B) Stunted growth and dark green foliage
C) Wilting
D) Necrosis

54. What is the function of quarantine measures in agriculture?
A) Increase biodiversity
B) Prevent the introduction of new diseases
C) Promote monoculture
D) Encourage pest populations

55. Which of the following is a method to identify plant pathogens?
A) DNA sequencing
B) Visual inspection
C) Soil testing
D) Weather analysis

56. What is the significance of temperature in fungal diseases?
A) It has no impact.
B) It only affects bacterial diseases.
C) It can influence spore germination and growth rates.
D) It increases disease resistance.

57. Which disease is caused by the fungus *Fusarium oxysporum*?
A) Powdery mildew
B) Fusarium wilt
C) Downy mildew
D) Bacterial blight

58. Which of the following is a symptom of downy mildew?
A) White powdery spots on leaves
B) Yellowing of leaves and stunted growth
C) Greyish mold on leaves
D) Leaf curling and necrosis

59. What role do soil-borne pathogens play in plant disease?
A) They increase crop yield.
B) They cause diseases in roots and lower plant parts.
C) They are beneficial organisms.
D) They only affect foliage.

60. Which of the following diseases affects the stem and leaves of plants?
A) Root rot
B) Blight
C) Wilt
D) Leaf spot

61 **What is a common symptom of nutrient deficiencies in plants?**
A) Wilting

B) Stunted growth
C) Chlorosis
D) All of the above

62. Which of the following is a significant disease in the cultivation of sugarcane?
A) Fusarium wilt
B) Sugarcane mosaic virus
C) Downy mildew
D) Root rot

63. What is the main environmental factor that contributes to the spread of downy mildew?
A) Low humidity
B) High temperatures
C) High humidity
D) Bright sunlight

64. Which of the following is a non-chemical method to manage pests and diseases?
A) Pesticides
B) Cultural practices
C) Fertilizers
D) Herbicides

65. What is the significance of maintaining plant diversity in agriculture?
A) Increases susceptibility to diseases
B) Enhances resilience to pests and diseases
C) Requires more resources
D) Decreases yield

66. Which disease is caused by a combination of fungal and bacterial agents?
A) Leaf blight
B) Damping-off
C) Fusarium wilt
D) Soft rot

67. Which of the following diseases is a significant threat to banana production?
A) Rice blast
B) Banana bunchy top virus
C) Fusarium wilt
D) Bacterial wilt

68. What is a primary reason for the emergence of new plant diseases?
A) Improved agricultural practices
B) Climate change and globalization
C) Use of organic fertilizers
D) Increased biodiversity

69. Which management practice is crucial during wet seasons to control diseases?
A) Crop rotation
B) Mulching
C) Draining excess water
D) Irrigation

70. What role does genetic resistance play in sustainable agriculture?

A) It reduces pesticide use.
B) It increases disease severity.
C) It promotes monoculture.
D) It has no impact on disease management.

71 **What is the primary cause of anthracnose in plants?**
A) Bacteria
B) Fungi
C) Nematodes
D) Viruses

72. Which practice is effective in managing foliar diseases?
A) Overcrowding
B) Pruning and proper spacing
C) Excessive irrigation
D) High nitrogen application

73. What is the primary vector for the transmission of the tomato yellow leaf curl virus?
A) Aphids
B) Beetles
C) Nematodes
D) Fungi

74. What is the term for the symptoms observed on a plant due to a pathogen?
A) Disease cycle
B) Pathogenicity
C) Disease expression
D) Virulence

75. What environmental factor is critical for the development of fungal diseases?
A) Cold temperatures
B) Dry conditions
C) High humidity and warmth
D) Low light

76. Which of the following diseases is commonly associated with legumes?
A) Tomato blight
B) Pea wilt
C) Rice blast
D) Corn smut

77. **What is the main objective of using chemical fungicides?**
A) Promote growth
B) Control fungal infections
C) Improve soil structure
D) Increase crop diversity

78. Which disease is known to affect both the root and foliage of the plant?
A) Downy mildew

B) Bacterial wilt
C) Fusarium wilt
D) Damping-off

79. Which of the following is a preventive measure against root rot?
A) Deep planting
B) Excessive irrigation
C) Good drainage practices
D) Overcrowding

80. What is a typical symptom of crown gall disease?
A) Wilting
B) Galls on stems and roots
C) Leaf curling
D) Yellowing of leaves

81. **What is the main function of fungicides in plant disease management?**
A) Increase nutrient absorption
B) Kill or inhibit fungal pathogens
C) Promote plant growth
D) Enhance soil fertility

82. **Which of the following practices can help reduce the spread of viral diseases?**
A) Crop rotation with the same crop
B) Use of resistant varieties
C) Overhead irrigation
D) Excessive fertilization

83. **What type of pathogen is responsible for causing the disease known as black sigatoka in bananas?**
A) Bacteria
B) Viruses
C) Fungi
D) Nematodes

84. **Which disease is characterized by leaf spot lesions that can lead to defoliation?**
A) Bacterial blight
B) Anthracnose
C) Fusarium wilt
D) Root rot

85. **What type of nematodes are commonly associated with root damage in crops?**
A) Predatory nematodes
B) Plant-parasitic nematodes
C) Free-living nematodes
D) Fungal-feeding nematodes

86. **What is a common symptom of powdery mildew?**
A) Water-soaked lesions
B) White powdery spots on leaves
C) Galls on roots

D) Yellowing of leaves

87. **What is the primary vector for the spread of cucumber mosaic virus?**
A) Aphids
B) Thrips
C) Beetles
D) Nematodes

88. **Which of the following is an effective cultural practice to manage diseases?**
A) Continuous cropping of the same species
B) Proper sanitation and removal of infected plant debris
C) Over-fertilization
D) High-density planting

89. **What symptom is typically associated with a nitrogen deficiency in plants?**
A) Dark green leaves
B) Stunted growth and yellowing of older leaves
C) Wilting
D) Galls on roots

90. **Which pathogen is known for causing late blight in potatoes?**
A) *Phytophthora infestans*
B) *Fusarium oxysporum*
C) *Verticillium dahliae*
D) *Pythium* spp.

91. **What is the best method to control bacterial diseases in plants?**
A) Chemical fungicides
B) Biological control agents
C) Soil solarization
D) Use of copper-based bactericides

92. **Which of the following diseases is caused by a soil-borne pathogen?**
A) Downy mildew
B) Fusarium wilt
C) Powdery mildew
D) Viral infections

93. **What is the primary benefit of crop rotation in disease management?**
A) Increases soil fertility
B) Prevents build-up of soil-borne pathogens
C) Reduces labor costs
D) Enhances pest populations

94. **Which of the following diseases is associated with sudden wilting and yellowing of leaves?**
A) Root rot
B) Bacterial wilt
C) Powdery mildew
D) Leaf spot

95. **What management practice can help control downy mildew?**

A) Overhead irrigation
B) Reducing humidity through proper spacing
C) Excessive nitrogen application
D) Planting susceptible varieties

96. **What type of disease results from the action of multiple pathogens?**
A) Monocyclic disease
B) Polycyclic disease
C) Complex disease
D) Systemic disease

97. **Which symptom is most indicative of leaf rust disease?**
A) Dark spots on leaves
B) Orange or rust-colored pustules
C) Wilting and drooping
D) Leaf curling

98. **Which of the following is a common biological control agent against fungal diseases?**
A) Bacillus thuringiensis
B) Trichoderma spp.
C) Pseudomonas syringae
D) Rhizobium spp.

99. **What is the role of leaf litter in disease management?**
A) Increase humidity
B) Provide habitat for pests
C) Suppress soil-borne pathogens
D) Promote weed growth

100. **What is the primary cause of root rot in many crops?**
A) Excessive nitrogen
B) Poor soil drainage
C) Low humidity
D) High temperatures

G. ENTOMOLOGY

1. **What is the primary role of beneficial insects in agriculture?**
   A) Pest control
   B) Pollination
   C) Decomposition
   D) All of the above

2. **Which insect is known as a major pest of rice in the Philippines?**
   A) Fruit fly
   B) Brown planthopper
   C) Diamondback moth
   D) Leafcutter ant

3. **What type of metamorphosis do most agricultural pests undergo?**
   A) Ametabolous
   B) Hemimetabolous
   C) Holometabolous
   D) None of the above

4. **Which of the following is a method of biological control for pest management?**
   A) Chemical pesticides
   B) Release of parasitoids
   C) Soil fumigation
   D) Crop rotation

5. **What is the primary purpose of insect traps in agriculture?**
   A) Harvest insects
   B) Monitor pest populations
   C) Attract beneficial insects
   D) Increase soil fertility

6. **Which insect is known for causing significant damage to corn crops in the Philippines?**
   A) Cotton bollworm
   B) Fall armyworm
   C) Stem borer
   D) Whitefly

7. **What is Integrated Pest Management (IPM)?**
   A) A chemical-only approach to pest control
   B) A holistic approach combining various control methods
   C) A method that uses only natural pesticides

D) None of the above

8. **Which insect order do butterflies and moths belong to?**
   A) Coleoptera
   B) Lepidoptera
   C) Diptera
   D) Hymenoptera

9. **What is a common symptom of aphid infestation in crops?**
   A) Wilting leaves
   B) Honeydew secretion
   C) Leaf curling
   D) All of the above

10. **Which insect is a well-known vector of plant viruses?**
    A) Termite
    B) Whitefly
    C) Grasshopper
    D) Ladybug

11. **What is the main function of insecticidal soaps?**
    A) Kill all insects
    B) Control soft-bodied pests
    C) Enhance plant growth
    D) Improve soil health

12. **Which beneficial insect is known for its role in pollination?**
    A) Ladybug
    B) Honeybee
    C) Lacewing
    D) Parasitic wasp

13. **What type of damage do root-feeding nematodes cause?**
    A) Foliar damage
    B) Wilting and stunted growth
    C) Leaf spots
    D) Fruit rot

14. **Which of the following is a characteristic of the fruit fly pest?**
    A) It feeds on roots
    B) It lays eggs in fruit
    C) It is a beneficial insect
    D) It only affects vegetables

15. **What is a significant factor contributing to the development of insect resistance to pesticides?**
    A) Genetic diversity
    B) Overuse of the same pesticide
    C) Climate change
    D) Use of organic farming

16. **What is the primary role of parasitoid wasps in pest management?**
    A) Pollination

B) Feeding on nectar
C) Parasitizing pest insects
D) Soil aeration

17. **Which insect is a major pest of the coconut tree in the Philippines?**
    A) Coffee borer
    B) Coconut rhinoceros beetle
    C) Sugarcane borer
    D) Rice weevil

18. **What is the impact of pesticide drift?**
    A) It only affects the target crop.
    B) It can harm non-target plants and organisms.
    C) It improves pest control efficiency.
    D) It has no environmental effects.

19. **Which of the following insects is known for its role in biological control of aphids?**
    A) Green lacewing
    B) Cockroach
    C) Grasshopper
    D) Beetle

20. **What is the main consequence of monoculture in agriculture?**
    A) Increased biodiversity
    B) Enhanced pest populations
    C) Reduced soil fertility
    D) Higher crop yields

21. **Which insect is a common pest of vegetables in the Philippines?**
    A) Stink bug
    B) Leaf miner
    C) Both A and B
    D) None of the above

22. **What is the significance of using pheromone traps in pest management?**
    A) To kill pests
    B) To monitor pest populations
    C) To attract beneficial insects
    D) To improve soil health

23. **Which insect is notorious for causing damage to citrus crops?**
    A) Coconut beetle
    B) Asian citrus psyllid
    C) Ant
    D) Termite

24. **What is the role of ladybugs in agriculture?**
    A) Pollinators
    B) Pest predators
    C) Soil aerators
    D) Nutrient fixers

25. **Which type of insect is a major pest of sugarcane?**
    A) Cotton bollworm

B) Sugarcane borer
C) Stink bug
D) Leafcutter ant

26. **What is the impact of crop rotation on pest management?**
    A) It increases pest populations.
    B) It has no effect on pests.
    C) It disrupts pest life cycles.
    D) It makes pest management more difficult.

27. **Which pest is known for its ability to develop resistance to multiple insecticides?**
    A) Termite
    B) Cockroach
    C) Cotton bollworm
    D) Honeybee

28. **What is the primary cause of damage from locust swarms?**
    A) Feeding on leaves
    B) Reproduction
    C) Soil compaction
    D) Habitat destruction

29. **Which insect is known to be a vector of the bacterial wilt in tomatoes?**
    A) Thrips
    B) Leafhoppers
    C) Whiteflies
    D) Aphids

30. **What is a characteristic symptom of a mealybug infestation?**
    A) Wilting leaves
    B) Cotton-like wax on stems
    C) Yellowing of leaves
    D) Leaf drop

31. **Which pest is notorious for damaging rice crops through leaf feeding?**
    A) Rice weevil
    B) Green leafhopper
    C) Brown planthopper
    D) All of the above

32. **What is the main benefit of using trap crops?**
    A) Attract pests away from main crops
    B) Improve soil health
    C) Increase crop diversity
    D) Enhance irrigation

33. **What is a common method to control fall armyworms?**
    A) Chemical pesticides
    B) Biological control using natural enemies
    C) Both A and B
    D) None of the above

34. **Which insect is a common pest of the sweet potato crop?**
    A) Sweet potato weevil

B) Cabbage looper
C) Corn earworm
D) Thrips

35. **Which of the following is a significant pest of soybeans?**
A) Green stink bug
B) Rice bug
C) Spider mite
D) All of the above

36. **What is the primary method of pest management used in organic farming?**
A) Chemical pesticides
B) Cultural practices and biological control
C) Monoculture
D) Genetic modification

37. **What is the role of entomopathogenic fungi in pest management?**
A) They promote plant growth.
B) They are used to kill pests.
C) They improve soil fertility.
D) They enhance pollination.

38. **What is a common method for monitoring pest populations in the field?**
A) Soil testing
B) Visual inspections and traps
C) Irrigation management
D) Crop rotation

39. **Which insect is often referred to as a "sucking pest"?**
A) Grasshopper
B) Beetle
C) Aphid
D) Butterfly

40. **What is a significant consequence of insect infestation on crops?**
A) Improved crop quality
B) Reduced yields and quality
C) Increased soil fertility
D) Enhanced pollination

41. **What is the primary goal of pest scouting?**
A) To apply pesticides
B) To monitor pest populations and inform management decisions
C) To increase crop diversity
D) To enhance soil health

42. **Which insect is known for damaging stored grains?**
A) Termite
B) Grain weevil
C) Green bug
D) Ladybug

43. **What is a common cultural practice to manage insect pests?**
A) Crop rotation
B) Applying chemical pesticides

C) Increasing irrigation
D) Monocropping

44. **Which insect is known for its role in degrading plant material?**
A) Ladybug
B) Termite
C) Grasshopper
D) Butterfly

45. **What is the primary benefit of using neem oil in pest management?**
A) It repels all insects.
B) It disrupts the life cycle of pests.
C) It promotes plant growth.
D) It increases soil fertility.

46. **Which insect pest is known for feeding on the roots of various crops?**
A) Grasshopper
B) Root-knot nematode
C) Leafcutter ant
D) Caterpillar

47. **What is the main consequence of over-reliance on chemical pesticides?**
A) Decreased pest resistance
B) Increased biodiversity
C) Development of resistant pest populations
D) Improved soil health

48. **Which insect is a key pollinator for many crops in the Philippines?**
A) Butterfly
B) Honeybee
C) Moth
D) Ant

49. **What is a characteristic feature of the leafcutter ant?**
A) They lay eggs in soil.
B) They cut leaves to cultivate fungus.
C) They are nocturnal.
D) They have wings.

50. **Which insect pest affects tomato plants and causes leaf curl?**
A) Whitefly
B) Fruit fly
C) Leafhopper
D) Termite

51. **What is the role of parasitoid wasps in pest management?**
A) Pollination
B) Feeding on nectar
C) Killing pest insects
D) Soil aeration

52. **Which of the following insects can be beneficial for controlling scale insects?**
A) Aphids

B) Ladybugs
C) Grasshoppers
D) Ants

53. **What is a common practice to prevent the spread of insect pests?**
    A) Allowing open access to fields
    B) Implementing sanitation measures
    C) Planting only one crop
    D) Ignoring pest populations

54. **What type of insect is the coffee borer?**
    A) Leaf pest
    B) Root pest
    C) Wood-boring pest
    D) Soil pest

55. **Which method is often used to control pest populations in organic farming?**
    A) Genetically modified organisms
    B) Natural predators
    C) Synthetic pesticides
    D) Monoculture

56. **What is a major threat to the health of bee populations?**
    A) Increased biodiversity
    B) Habitat destruction
    C) Abundance of flowers
    D) Natural predators

57. **Which insect is known for being a significant pest of the papaya plant?**
    A) Papaya fruit fly
    B) Aphid
    C) Termite
    D) Leafcutter ant

58. **What is the primary benefit of using organic insecticides?**
    A) They are more toxic to pests.
    B) They are environmentally friendly.
    C) They are cheaper than synthetic insecticides.
    D) They are easier to apply.

59. **Which pest is commonly associated with wilting and yellowing of leaves in vegetables?**
    A) Stink bug
    B) Spider mite
    C) Aphid
    D) Root-knot nematode

60. **What is a significant consequence of pest-induced crop damage?**
    A) Higher market prices
    B) Increased crop yield
    C) Loss of farmer income
    D) Improved plant quality

61. **Which beneficial insect is known for its role in controlling aphid populations?**
    A) Honeybee
    B) Ladybug
    C) Termite
    D) Grasshopper

62. **What is the primary role of pollinators in agriculture?**
    A) Pest control
    B) Seed dispersal
    C) Enhancing fruit and seed production
    D) Soil aeration

63. **Which insect pest is commonly found on leafy vegetables?**
    A) Leaf miner
    B) Beetle
    C) Stink bug
    D) All of the above

64. **What is the best strategy to manage the fall armyworm?**
    A) Use the same pesticide repeatedly
    B) Rotate crops and implement cultural practices
    C) Ignore the infestation
    D) Plant only resistant varieties

65. **What is the main consequence of introducing non-native insect species into agriculture?**
    A) Improved biodiversity
    B) Harm to native species
    C) Enhanced crop production
    D) Increased pollination

66. **Which insect is often used as a model organism in entomological research?**
    A) Honeybee
    B) Fruit fly
    C) Grasshopper
    D) Termite

67. **What is the primary target of insect growth regulators (IGRs)?**
    A) Adult insects
    B) Eggs and larvae
    C) Soil organisms
    D) Beneficial insects

68. **What is a primary method for managing thrips populations?**
    A) Crop rotation
    B) Chemical pesticides
    C) Both A and B
    D) Ignoring the problem

69. **Which of the following pests is known to affect the yield of mangoes?**
    A) Mango weevil
    B) Cotton bollworm
    C) Armyworm
    D) All of the above

70. **What is the primary effect of climate change on insect populations?**
    A) Decreased pest populations
    B) Altered life cycles and distribution patterns
    C) Increased biodiversity
    D) None of the above

71. **What is a common sign of spider mite infestation?**
    A) Large holes in leaves
    B) Webbing on leaves
    C) Yellowing leaves
    D) All of the above

72. **Which of the following insects can cause significant damage to fruit trees?**
    A) Fruit fly
    B) Codling moth
    C) Both A and B
    D) None of the above

73. **What is the main ecological role of decomposer insects?**
    A) Pollination
    B) Nutrient cycling
    C) Pest control
    D) Seed dispersal

74. **Which insect pest is commonly associated with reduced fruit quality in grapes?**
    A) Leafcutter ant
    B) Fruit fly
    C) Aphid
    D) All of the above

75. **What is the main advantage of using cover crops in pest management?**
    A) They prevent soil erosion.
    B) They provide habitat for beneficial insects.
    C) They increase pest populations.
    D) Both A and B

76. **Which insect is known as a major pest of rice in the Philippines?**
    A) Locust
    B) Brown Planthopper
    C) Termite
    D) Aphid

77. **What is the primary benefit of integrated pest management (IPM) in agriculture?**
    A) Increased chemical use
    B) Reduced crop yields
    C) Sustainable pest control

D) Higher costs

78. **Which of the following is a beneficial insect commonly used in biological control?**
    A) Ladybug
    B) Cockroach
    C) Armyworm
    D) Cutworm

79. **What is the main disadvantage of relying heavily on chemical pesticides?**
    A) Increased crop diversity
    B) Environmental pollution
    C) Enhanced pest resistance
    D) Both B and C

80. **Which insect is known for causing the "bamboo borer" problem in the Philippines?**
    A) Rhinoceros beetle
    B) Termite
    C) Cossid moth
    D) Weevil

81. **The presence of which insect indicates a healthy ecosystem?**
    A) Mosquito
    B) Butterfly
    C) Cockroach
    D) Fruit fly

82. **Which of the following is an effective method for managing the fall armyworm in corn?**
    A) Increased irrigation
    B) Crop rotation
    C) Use of synthetic fertilizers
    D) Continuous planting

83. **What type of insect is the coffee borer beetle?**
    A) Herbivore
    B) Carnivore
    C) Detritivore
    D) Omnivore

84. **Which pest is known for damaging stored grains in the Philippines?**
    A) Grain weevil
    B) Spider mite
    C) Leafhopper
    D) Whitefly

85. **What is the primary function of pollinators in agriculture?**
    A) Pest control
    B) Seed dispersal
    C) Fertilization

D) Soil aeration

86. **Which of the following is an ecological impact of insect pests?**
    A) Enhanced biodiversity
    B) Soil erosion
    C) Disease transmission
    D) Increased water retention

87. **What insect is primarily responsible for the spread of the cacao pod borer disease?**
    A) Midge
    B) Leafcutter ant
    C) Cocoa pod borer
    D) Thrips

88. **Which practice can help reduce the population of the whitefly?**
    A) Monoculture planting
    B) Use of insect nets
    C) Excessive watering
    D) Chemical spraying

89. **The red palm weevil primarily affects which type of plant?**
    A) Rice
    B) Coconut
    C) Corn
    D) Sugarcane

90. **Which of the following is a characteristic of pest-resistant plant varieties?**
    A) Higher yield potential
    B) Increased vulnerability
    C) Requires more water
    D) Shorter lifespan

91. **Which natural enemy is used to control aphid populations?**
    A) Parasitic wasps
    B) Lacewing larvae
    C) Both A and B
    D) Ladybugs only

92. **Which insect is known for causing damage to sugarcane crops?**
    A) Stemborer
    B) Ant
    C) Butterfly
    D) Grasshopper

93. **What role do entomopathogenic fungi play in agriculture?**
    A) Promote plant growth
    B) Control pest populations
    C) Decompose organic matter
    D) Fix nitrogen

94. **Which pest is known to affect the production of mangoes in the Philippines?**
    A) Mango weevil
    B) Fruit fly
    C) Leafcutter ant
    D) Both A and B

95. **The term "IPM" stands for what in the context of pest management?**
    A) Intensive Pest Management
    B) Integrated Pest Management
    C) Insect Pest Monitoring
    D) Intermittent Pest Management

96. **Which insect is a common vector of plant viruses?**
    A) Grasshopper
    B) Aphid
    C) Ant
    D) Fly

97. **Which of the following is an example of a cultural control method?**
    A) Spraying pesticides
    B) Crop rotation
    C) Using insect traps
    D) Introducing natural predators

98. **The use of neem oil in agriculture is primarily for what purpose?**
    A) Fertilization
    B) Pest repellent
    C) Irrigation
    D) Soil amendment

99. **What is a significant impact of the use of invasive insect species in agriculture?**
    A) Improved crop yield
    B) Enhanced biodiversity
    C) Crop damage and economic loss
    D) Pest suppression

100. **Which practice can help in monitoring pest populations effectively?**
    A) Random spraying
    B) Regular scouting and trapping
    C) Ignoring pest signs
    D) Over-fertilization

H. AGRICULTURAL ECONOMICS

1. **What is the primary goal of agricultural economics?**
   A) To maximize crop yields
   B) To analyze resource allocation in agriculture
   C) To develop new farming technologies
   D) To promote organic farming

2. **What is a common measure of farm productivity?**
   A) Total land area
   B) Yield per hectare
   C) Number of livestock
   D) Total revenue

3. **Which sector contributes the most to the Philippines' agricultural GDP?**
   A) Livestock
   B) Fisheries
   C) Crops
   D) Forestry

4. **What is the primary purpose of the Philippine Crop Insurance Corporation (PCIC)?**
   A) To provide loans to farmers
   B) To insure crops against losses
   C) To promote crop diversification
   D) To manage irrigation systems

5. **What does "food security" refer to?**
   A) The availability of agricultural land
   B) The affordability and accessibility of food
   C) The quality of food produced
   D) The production capacity of farms

6. **What is the main purpose of agricultural subsidies?**
   A) To increase food prices
   B) To support farmers' income
   C) To discourage farming
   D) To promote exports

7. **Which economic concept describes the responsiveness of demand to changes in price?**
    A) Supply
    B) Elasticity
    C) Market equilibrium
    D) Opportunity cost

8. **What is a major challenge facing smallholder farmers in the Philippines?**
    A) High access to credit
    B) Advanced technology
    C) Limited access to markets
    D) Large farm sizes

9. **Which of the following is a common cause of agricultural market failure?**
    A) Perfect competition
    B) Externalities
    C) Government regulations
    D) Seasonal crops

10. **What role do cooperatives play in the agricultural sector?**
    A) They increase competition among farmers
    B) They provide a platform for collective bargaining
    C) They eliminate the need for government support
    D) They focus solely on export markets

11. **Which crop is known as the "backbone" of Philippine agriculture?**
    A) Corn
    B) Rice
    C) Sugarcane
    D) Coconut

12. **What is the primary aim of agrarian reform in the Philippines?**
    A) To increase agricultural exports
    B) To redistribute land to farmers
    C) To modernize farming techniques
    D) To promote urbanization

13. **Which economic principle explains the trade-offs in resource allocation?**
    A) Law of Demand
    B) Opportunity Cost
    C) Comparative Advantage
    D) Market Equilibrium

14. **What is the function of the Department of Agriculture (DA) in the Philippines?**
    A) To manage agricultural land
    B) To formulate policies for agricultural development
    C) To directly produce crops
    D) To regulate food prices

15. **Which factor is most important in determining agricultural productivity?**
    A) Weather conditions
    B) Soil fertility
    C) Technological innovation

D) Labor availability

16. **What does "agribusiness" refer to?**
    A) Non-profit farming initiatives
    B) All business activities related to agriculture
    C) Organic farming practices
    D) Small-scale farming operations

17. **Which policy aims to protect local farmers from foreign competition?**
    A) Liberalization
    B) Import tariffs
    C) Subsidies
    D) Export incentives

18. **Which of the following is a key indicator of agricultural development?**
    A) Urban migration
    B) Agricultural GDP growth
    C) Decrease in food production
    D) Increased reliance on imports

19. **What is the term for the practice of growing different crops in succession on the same land?**
    A) Monoculture
    B) Crop rotation
    C) Intercropping
    D) Agroforestry

20. **Which of the following best describes "sustainable agriculture"?**
    A) Agriculture that maximizes short-term profits
    B) Farming practices that do not deplete natural resources
    C) Industrial agriculture techniques
    D) Agriculture focused solely on export

21. **What is the primary reason for promoting organic farming in the Philippines?**
    A) To increase chemical pesticide use
    B) To ensure food safety and environmental protection
    C) To maximize short-term profits
    D) To focus on export markets

22. **What role does the Bureau of Agricultural Statistics (BAS) play?**
    A) Regulates prices of agricultural products
    B) Collects and analyzes agricultural data
    C) Provides loans to farmers
    D) Implements agrarian reform

23. **Which term describes the financial resources available to farmers for investment?**
    A) Capital
    B) Labor
    C) Land
    D) Technology

24. **What is the main benefit of agricultural diversification?**
    A) Higher market risks

B) Reduced vulnerability to market fluctuations
C) Increased reliance on single crops
D) Higher dependency on imports

25. **What is the primary source of income for most rural households in the Philippines?**
    A) Agricultural wages
    B) Remittances
    C) Government subsidies
    D) Tourism

26. **Which institution primarily provides credit to farmers in the Philippines?**
    A) Land Bank of the Philippines
    B) Philippine National Bank
    C) Department of Agriculture
    D) Cooperative Development Authority

27. **What does the term "value chain" refer to in agriculture?**
    A) The sequence of processes involved in producing a product
    B) The cost of inputs used in farming
    C) The geographical area of farming
    D) The market price of agricultural goods

28. **Which of the following is a government program aimed at improving rice production?**
    A) Rice Tariffication Law
    B) Comprehensive Agrarian Reform Program (CARP)
    C) Kadiwa ni Ani at Kita
    D) Philippine Rural Development Project

29. **What is the primary function of the Agricultural Credit Policy Council (ACPC)?**
    A) To provide land to farmers
    B) To develop agricultural credit policies
    C) To implement irrigation projects
    D) To manage agricultural statistics

30. **Which agricultural product is primarily exported from the Philippines?**
    A) Rice
    B) Pineapple
    C) Corn
    D) Wheat

31. **What is the term for the practice of growing two or more crops in the same space?**
    A) Crop rotation
    B) Monocropping
    C) Intercropping
    D) Agroforestry

32. **What is a common economic effect of climate change on agriculture?**
    A) Stable crop yields

B) Increased pest resistance
C) Crop yield variability
D) Decreased rainfall

33. **Which of the following is a characteristic of the Philippine agricultural labor force?**
    A) High levels of mechanization
    B) Young workforce
    C) Aging farmers
    D) Gender balance

34. **What is the role of the Philippine Center for Postharvest Development and Mechanization (PhilMech)?**
    A) To provide financial assistance to farmers
    B) To promote mechanization and improve postharvest practices
    C) To regulate agricultural prices
    D) To manage irrigation systems

35. **What is the term for the price at which the quantity of a product supplied equals the quantity demanded?**
    A) Market price
    B) Equilibrium price
    C) Floor price
    D) Ceiling price

36. **Which of the following is a direct impact of globalization on Philippine agriculture?**
    A) Decreased competition from imports
    B) Increased market access for farmers
    C) Reduced exposure to international markets
    D) Isolation from global agricultural trends

37. **What is the primary focus of the Philippine Rural Development Project (PRDP)?**
    A) Urban agriculture
    B) Enhancing rural infrastructure and livelihoods
    C) Promoting monoculture
    D) Exporting agricultural products

38. **Which of the following factors affects the demand for agricultural products?**
    A) Consumer income
    B) Prices of substitutes
    C) Consumer preferences
    D) All of the above

39. **What is the term for the practice of rotating grazing areas for livestock?**
    A) Overgrazing
    B) Rangeland management
    C) Pasture rotation
    D) Monoculture

40. **Which agricultural policy aims to improve farmers' incomes through price support?**
    A) Trade liberalization
    B) Price stabilization program
    C) Deregulation
    D) Land reform

41. **What is the economic term for the loss of potential gain from other alternatives when one alternative is chosen?**
    A) Cost-benefit analysis
    B) Opportunity cost
    C) Marginal cost
    D) Market failure

42. **Which factor is crucial for determining the pricing of agricultural goods?**
    A) Production costs
    B) Climate
    C) Land ownership
    D) Availability of water

43. **What does "agricultural productivity" refer to?**
    A) The amount of labor used in farming
    B) The efficiency of production in agriculture
    C) The total area under cultivation
    D) The number of farmers in a region

44. **What is the impact of land tenure security on agricultural development?**
    A) It decreases investment in farming
    B) It encourages long-term investment and productivity
    C) It leads to land grabbing
    D) It has no significant impact

45. **Which of the following best defines "comparative advantage"?**
    A) The ability to produce a good at a lower opportunity cost than others
    B) The ability to produce more goods than competitors
    C) The advantage of having more resources
    D) The dominance of a particular market

46. **What is the purpose of the Agricultural Competitiveness Enhancement Fund (ACEF)?**
    A) To reduce import tariffs
    B) To provide financial assistance to agricultural projects
    C) To promote urban agriculture
    D) To manage agricultural statistics

47. **Which type of agriculture focuses on producing crops primarily for sale?**
    A) Subsistence agriculture
    B) Commercial agriculture
    C) Organic agriculture
    D) Integrated farming

48. **What is a significant factor contributing to rural poverty in the Philippines?**
    A) High levels of education

B) Lack of access to credit and resources
C) Abundance of agricultural land
D) Strong agricultural policies

49. **Which of the following is an example of a negative externality in agriculture?**
A) Increased food production
B) Soil erosion from over-farming
C) Higher crop prices
D) Improved rural infrastructure

50. **What is the main objective of food marketing programs?**
A) To restrict food production
B) To increase food prices
C) To improve market access for farmers
D) To eliminate competition

51. **What is the significance of agricultural research and development (R&D)?**
A) It focuses solely on crop yields
B) It promotes outdated practices
C) It drives innovation and enhances productivity
D) It reduces investment in agriculture

52. **What is the impact of high-interest rates on agricultural investment?**
A) It encourages more borrowing
B) It discourages investment in farming
C) It has no effect
D) It increases agricultural output

53. **Which term describes the risk of crop failure due to environmental factors?**
A) Market risk
B) Production risk
C) Financial risk
D) Price risk

54. **What is the role of the Food and Agriculture Organization (FAO) in the Philippines?**
A) To regulate food prices
B) To support food security initiatives
C) To implement land reforms
D) To provide loans to farmers

55. **What is the main focus of rural development programs in the Philippines?**
A) Urbanization
B) Improving the quality of life in rural areas
C) Reducing agricultural production
D) Increasing imports of agricultural products

56. **Which of the following is a consequence of land degradation in agriculture?**
A) Increased crop yields

B) Reduced food security
C) Improved soil fertility
D) Higher farmer incomes

57. **What is a key characteristic of subsistence agriculture?**
A) High market orientation
B) Production for household consumption
C) Extensive use of technology
D) Large-scale farming operations

58. **Which of the following strategies can enhance resilience in agriculture?**
A) Monoculture farming
B) Diversification of crops
C) Reduced investment in R&D
D) Increased reliance on chemical inputs

59. **What is the primary function of agricultural extension services?**
A) To provide legal support to farmers
B) To deliver education and resources to farmers
C) To manage agricultural subsidies
D) To regulate food safety

60. **Which policy aims to stabilize prices for agricultural commodities?**
A) Free trade agreements
B) Price support programs
C) Deregulation
D) Export bans

61. **What is the economic impact of high unemployment rates in rural areas?**
A) Increased agricultural productivity
B) Reduced household incomes
C) Greater investment in farming
D) Enhanced food security

62. **Which of the following is a common method to assess agricultural productivity?**
A) Cost-benefit analysis
B) Soil testing
C) Yield comparison
D) Land surveys

63. **What does "land use planning" involve in the context of agriculture?**
A) Managing urban development
B) Allocating land for different agricultural activities
C) Restricting farming practices
D) Increasing land taxes

64. **Which of the following is a potential benefit of agroforestry?**
A) Increased soil erosion
B) Enhanced biodiversity
C) Lower crop yields
D) Higher dependence on pesticides

65. **What does the term "agricultural value addition" refer to?**
A) The total cost of production

B) Enhancing the value of raw agricultural products through processing
C) Reducing agricultural exports
D) Increasing the size of farms

66. **What is a primary goal of food safety regulations?**
A) To increase food prices
B) To ensure the safety of food for consumers
C) To limit agricultural production
D) To promote unhealthy eating

67. **Which of the following factors can lead to food price inflation?**
A) Increased agricultural production
B) Supply chain disruptions
C) Higher agricultural subsidies
D) Improved transportation

68. **What is the role of the National Food Authority (NFA)?**
A) To regulate agricultural exports
B) To ensure stable supply and price of rice
C) To implement agrarian reform
D) To provide technical assistance to farmers

69. **Which of the following is a challenge of implementing agricultural technology?**
A) Increased efficiency
B) High initial costs
C) Improved productivity
D) Enhanced crop quality

70. **What is the primary purpose of agricultural trade policies?**
A) To limit imports of agricultural goods
B) To promote exports and enhance competitiveness
C) To reduce agricultural productivity
D) To control food prices

71. **Which crop is most affected by fluctuating global prices?**
A) Rice
B) Corn
C) Coffee
D) Sweet potatoes

72. **What is the effect of inflation on farmers' purchasing power?**
A) It increases purchasing power
B) It has no effect
C) It decreases purchasing power
D) It only affects urban consumers

73. **Which term describes the practice of using a single crop variety over time?**
A) Monocropping
B) Polyculture
C) Biodiversity
D) Intercropping

74. **What is the main benefit of organic farming?**
A) Higher pesticide use

B) Improved soil health and reduced chemical residues
C) Increased dependency on synthetic fertilizers
D) Higher water usage

75. **Which of the following is an example of an agricultural cooperative?**
A) A private farm
B) A farmer's market
C) A group of farmers pooling resources for mutual benefit
D) A government agency

76. **What is the term for the practice of combining crop and livestock production?**
A) Integrated farming
B) Monoculture
C) Agroforestry
D) Hydroponics

77. **Which of the following is a potential advantage of genetically modified organisms (GMOs) in agriculture?**
A) Reduced crop yields
B) Increased resistance to pests and diseases
C) Increased reliance on traditional farming methods
D) Higher costs of production

78. **What is the main purpose of agricultural insurance?**
A) To eliminate all agricultural risks
B) To provide financial protection against losses
C) To increase premiums for farmers
D) To guarantee profits for farmers

79. **What is the role of cooperatives in supporting small farmers?**
A) To increase competition among farmers
B) To provide access to markets and resources
C) To reduce collective bargaining power
D) To eliminate subsidies

80. **Which agricultural practice involves planting crops in rows with wide spaces between them?**
A) Intercropping
B) Monocropping
C) Row cropping
D) Cover cropping

81. **What is the significance of crop diversification?**
A) It increases market risk
B) It reduces resilience to market changes
C) It enhances food security and farm income
D) It complicates farming practices

82. **What does the term "sustainable agriculture" refer to?**

A) Farming practices that do not consider environmental impacts
B) Agricultural practices that maintain productivity without depleting resources
C) The use of only organic fertilizers
D) Maximizing production at any cost

83. **What is a common challenge faced by smallholder farmers?**
A) Access to modern technology
B) Excessive land size
C) High levels of income
D) Sufficient market access

84. **What is the main objective of crop insurance?**
A) To increase crop production
B) To provide financial coverage against crop losses
C) To eliminate pests
D) To ensure market prices

85. **Which of the following can negatively affect soil health?**
A) Crop rotation
B) Organic farming
C) Over-reliance on chemical fertilizers
D) Cover cropping

86. **What is the primary goal of food security programs?**
A) To increase agricultural exports
B) To ensure all individuals have access to sufficient food
C) To promote urbanization
D) To eliminate smallholder farming

87. **Which of the following is a potential benefit of precision agriculture?**
A) Decreased efficiency
B) Increased input costs
C) Enhanced resource management
D) Reduced crop yields

88. **What does "sustainable land management" involve?**
A) Depleting natural resources
B) Balancing land use with environmental conservation
C) Expanding urban development
D) Maximizing agricultural output at all costs

89. **Which of the following is a disadvantage of relying heavily on irrigation?**
A) Increased crop yields
B) Soil salinization
C) Improved crop resilience
D) Enhanced agricultural productivity

90. **What is the primary purpose of agricultural subsidies?**
A) To reduce competition
B) To support farmers and stabilize prices
C) To increase import dependency

D) To eliminate small farms

91. **Which practice can improve soil fertility?**
    A) Overgrazing
    B) Crop rotation
    C) Monocropping
    D) Chemical pesticide use

92. **What is the significance of farmer field schools?**
    A) They focus solely on traditional practices
    B) They provide a platform for hands-on learning and knowledge sharing
    C) They restrict farmer participation
    D) They limit access to resources

93. **Which of the following is a major factor contributing to rural migration?**
    A) High levels of job security in agriculture
    B) Improved living conditions in rural areas
    C) Lack of economic opportunities
    D) Abundance of resources

94. **What is the role of the Bureau of Agricultural Statistics (BAS)?**
    A) To regulate agricultural prices
    B) To provide agricultural education
    C) To collect and analyze agricultural data
    D) To implement land reforms

95. **What is the primary benefit of vertical farming?**
    A) Increased land use
    B) Enhanced food security in urban areas
    C) Reduced need for technology
    D) Decreased food production

96. **What is a common consequence of climate change on agriculture?**
    A) Stable weather patterns
    B) Increased predictability of crop yields
    C) Greater frequency of extreme weather events
    D) Decreased pest populations

97. **What is the significance of soil health in agriculture?**
    A) It has no impact on crop production
    B) Healthy soil promotes higher productivity and sustainability
    C) It is only important for organic farming
    D) It leads to increased pesticide use

98. **What is a key challenge in achieving food security?**
    A) Sufficient agricultural production
    B) Equitable distribution of food resources
    C) Access to urban areas
    D) Increased agricultural subsidies

99. **Which agricultural system emphasizes local resource use and community involvement?**
    A) Conventional agriculture
    B) Industrial agriculture

C) Agroecology
D) Monoculture

100. **What is the goal of integrated pest management (IPM)?**
A) To eliminate all pests
B) To use pesticides as the only control method
C) To reduce pest populations while minimizing environmental impact
D) To increase reliance on chemical inputs

I. EXTENSION EDUCATION

1. **What is the primary goal of agricultural extension services?**
A) To increase production costs
B) To provide technical support to farmers
C) To regulate market prices
D) To eliminate traditional farming practices

2. **Which of the following is a key role of agricultural extension workers?**
A) Conducting research
B) Implementing agricultural policies
C) Facilitating farmer education and training
D) Managing financial aid programs

3. **What method is commonly used in extension education to promote participatory learning?**
A) Lecture-based training
B) Farmer field schools
C) Written manuals
D) Online webinars

4. **What is the significance of using local knowledge in agricultural extension?**
A) It reduces the need for research
B) It discredits modern practices
C) It enhances the relevance of extension programs
D) It limits innovation

5. **Which of the following is a barrier to effective agricultural extension in the Philippines?**
A) High farmer literacy rates
B) Limited access to technology
C) Abundance of extension resources
D) Strong government support

6. **What type of training is most beneficial for smallholder farmers?**
A) Specialized technical training
B) General agriculture courses
C) Hands-on practical training

D) Long-term academic programs

7. **Which extension approach emphasizes the use of farmer-to-farmer learning?**
   A) Top-down approach
   B) Participatory approach
   C) Technology transfer approach
   D) Directive approach

8. **What is the primary purpose of conducting needs assessments in extension education?**
   A) To evaluate funding sources
   B) To identify gaps in knowledge and resources
   C) To restrict access to information
   D) To standardize practices

9. **Which of the following is a common tool used in agricultural extension?**
   A) Research papers
   B) Extension bulletins
   C) Legal documents
   D) Financial audits

10. **What is the role of agricultural cooperatives in extension education?**
    A) To provide only financial support
    B) To serve as platforms for collective learning and resource sharing
    C) To eliminate competition among farmers
    D) To enforce government regulations

11. **Which method is most effective for disseminating agricultural information in remote areas?**
    A) Social media campaigns
    B) Radio programs
    C) Printed newsletters
    D) Online forums

12. **What is the purpose of technology transfer in agricultural extension?**
    A) To restrict the use of new technologies
    B) To facilitate the adoption of innovations
    C) To increase dependency on foreign technology
    D) To eliminate traditional practices

13. **Which factor is critical for the success of extension education programs?**
    A) High farmer resistance
    B) Strong community involvement
    C) Isolated implementation
    D) Lack of follow-up

14. **What is the significance of using demonstrations in agricultural extension?**
    A) They confuse farmers
    B) They provide visual evidence of practices
    C) They limit learning opportunities
    D) They are time-consuming

15. **Which of the following best describes "participatory rural appraisal" (PRA)?**

A) A method to assess rural agricultural policies
B) A tool for community-driven planning and decision-making
C) A financial auditing process
D) A method for enforcing government regulations

16. **What is the role of gender in agricultural extension education?**
A) It should be ignored
B) It is only relevant in urban areas
C) It influences participation and access to resources
D) It complicates training programs

17. **Which approach to extension emphasizes self-learning and problem-solving?**
A) Prescriptive approach
B) Participatory approach
C) Top-down approach
D) Directive approach

18. **What type of education focuses on sustainable agricultural practices?**
A) Conventional education
B) Environmental education
C) Technical education
D) Commercial education

19. **Which is a significant challenge in agricultural extension in the Philippines?**
A) Abundance of resources
B) High literacy rates
C) Geographic diversity and accessibility
D) Strong farmer participation

20. **What is the primary focus of community-based extension programs?**
A) Top-down decision-making
B) Enhancing community capacity and involvement
C) Promoting government policies
D) Reducing agricultural production

21. **Which of the following is an example of non-formal education in agriculture?**
A) University degrees
B) Workshops and seminars
C) Online courses
D) Technical certifications

22. **What is the significance of feedback mechanisms in extension education?**
A) They complicate program implementation
B) They help improve program relevance and effectiveness
C) They reduce farmer participation
D) They are unnecessary

23. **What is a key benefit of using visual aids in extension training?**
A) They distract from learning
B) They enhance understanding and retention
C) They require additional resources

D) They are only useful for technical topics

24. **Which type of training emphasizes peer learning among farmers?**
A) Conventional training
B) Workshops
C) Farmer-to-farmer training
D) Online courses

25. **What is the primary objective of agricultural extension communication?**
A) To disseminate irrelevant information
B) To facilitate the exchange of knowledge and skills
C) To restrict farmer access to information
D) To enforce regulatory measures

26. Which approach is effective in addressing the diverse needs of farmers?
A) One-size-fits-all approach
B) Participatory and flexible approach
C) Rigid instructional methods
D) Solely academic approach

27. What role do NGOs play in agricultural extension?
A) They hinder farmer education
B) They provide funding only
C) They complement government efforts in delivering services
D) They replace government agencies

28. What is the main focus of integrated pest management (IPM) in extension education?
A) Total reliance on chemical pesticides
B) Sustainable pest control strategies
C) Eliminating all pests
D) Increasing chemical inputs

29. What is the purpose of organizing farmer groups in extension programs?
A) To reduce communication
B) To increase competition
C) To foster collaboration and resource sharing
D) To isolate farmers

30. Which of the following is an effective way to motivate farmers to participate in extension programs?
A) Mandatory attendance
B) Incentives and rewards
C) Punitive measures for non-participation
D) Minimal interaction

31. What type of evaluation assesses the impact of extension programs on farmers' livelihoods?
A) Process evaluation
B) Impact evaluation
C) Formative evaluation
D) Summative evaluation

32. Which of the following is crucial for successful extension delivery?

A) Ignoring farmer feedback
B) Building trust and rapport with farmers
C) Using complex jargon
D) Limiting access to information

33. What role does research play in agricultural extension education?
A) It has no relevance
B) It informs and supports evidence-based practices
C) It restricts access to new techniques
D) It complicates training programs

34. What is the importance of field visits in extension education?
A) They waste resources
B) They provide real-world context and understanding
C) They are purely formalities
D) They limit interaction

35. Which of the following is a challenge in agricultural extension for women farmers?
A) High levels of participation
B) Limited access to resources and training
C) Increased support from organizations
D) Equal representation in decision-making

36. What is the role of technology in modern agricultural extension?
A) It complicates communication
B) It enhances information dissemination and accessibility
C) It reduces farmer participation
D) It limits the scope of extension services

37. What is the significance of continuous professional development for extension workers?
A) It is not necessary
B) It ensures they remain informed about best practices and innovations
C) It complicates their roles
D) It limits their interaction with farmers

38. Which approach to extension emphasizes the use of local resources and knowledge?
A) Industrial agriculture approach
B) Agroecological approach
C) Monoculture approach
D) Conventional approach

39. What is a key benefit of using mobile technology in agricultural extension?
A) It complicates communication
B) It increases costs for farmers
C) It enhances real-time information sharing
D) It limits outreach

40. Which extension method is most suitable for reaching diverse farmer populations?
A) Uniform training programs

B) Tailored and flexible approaches
C) Lecture-based formats
D) Strict adherence to protocols

41. What is the role of monitoring and evaluation in extension education?
A) To enforce strict regulations
B) To assess program effectiveness and make improvements
C) To limit farmer involvement
D) To increase costs

42. Which of the following is a common challenge faced by extension educators?
A) Overwhelming farmer engagement
B) Resistance to new practices
C) Abundant resources
D) High literacy levels

43. What is the purpose of community organizing in extension education?
A) To isolate farmers
B) To build collective action and empowerment
C) To limit collaboration
D) To enforce top-down decisions

44. What type of learning is emphasized in experiential education methods?
A) Passive learning
B) Rote memorization
C) Hands-on and reflective learning
D) Solely theoretical knowledge

45. Which of the following best describes "extension communication”?
A) One-way information flow
B) Collaborative and interactive exchange of information
C) Only verbal communication
D) A formal written process

46. What is the role of agricultural policy in extension education?
A) To limit farmer access to information
B) To guide and support extension initiatives
C) To reduce funding for programs
D) To eliminate local knowledge

47. Which of the following is essential for building a strong extension network?
A) Isolation of farmers
B) Collaboration among stakeholders
C) Strict top-down directives
D) Limited communication channels

48. What is the importance of culturally sensitive training in extension education?
A) It complicates training processes
B) It enhances relevance and acceptance of practices
C) It limits participation

D) It reduces the need for training

49. Which of the following is a common method for evaluating extension program success?

A) Monitoring participant attendance
B) Gathering qualitative and quantitative feedback
C) Measuring only financial outcomes
D) Conducting annual reports only

50. What is the significance of farmer-led innovation in extension education?

A) It undermines expert knowledge
B) It promotes local solutions and adaptability
C) It complicates the innovation process
D) It reduces diversity in practices

51. Which of the following describes "adaptive learning" in extension education?

A) Rigid adherence to traditional methods
B) Flexibility in adjusting practices based on feedback
C) Sole reliance on expert knowledge
D) Passive absorption of information

52. What is the significance of social capital in agricultural extension?

A) It is irrelevant to farming
B) It fosters trust and cooperation among farmers
C) It limits farmer networks
D) It complicates resource sharing

53. Which of the following best defines "farmers' rights" in extension education?

A) Farmers have no rights
B) Farmers should have access to information and resources
C) Farmers are restricted from decision-making
D) Farmers' rights are only legal protections

54. What role do gender-sensitive approaches play in agricultural extension?

A) They create inequality
B) They promote inclusivity and equity
) They complicate programs
D) They limit participation

55. Which of the following is a challenge to implementing sustainable practices in agriculture?

A) High farmer engagement
B) Resistance to change and tradition
C) Abundance of resources
D) Strong governmental support

56. What is the goal of participatory action research (PAR) in extension education?

A) To control farmers' decisions
B) To empower communities through active involvement in research
C) To restrict access to knowledge
D) To standardize agricultural practices

57. Which extension strategy focuses on building local capacities for sustainable farming?

A) Traditional training methods
B) Capacity-building initiatives
C) Government-led directives
D) Financial incentives only

58. What is a significant outcome of effective extension education?
A) Decreased agricultural productivity
B) Enhanced farmer resilience and adaptability
C) Isolation of farmers
D) Limited access to information

59. Which of the following is essential for effective communication in extension education?
A) Use of jargon
B) Clarity and simplicity of information
C) Exclusively formal communication
D) One-way information flow

60. What is the importance of policy advocacy in agricultural extension?
A) It limits farmer involvement
B) It influences favorable conditions for farmers and extension services
C) It complicates service delivery
D) It reduces government support

61. Which of the following strategies enhances farmer participation in extension programs?
A) Mandating participation
B) Involving farmers in program design and evaluation
C) Restricting communication
D) Focusing solely on expert opinions

62. What is the role of agricultural education in promoting sustainable practices?
A) It has no impact
B) It raises awareness and builds skills for sustainability
C) It complicates farming methods
D) It limits innovation

63. What is the significance of integrating local culture in extension programs?
A) It complicates program implementation
B) It enhances acceptance and relevance of practices
C) It limits participation
D) It reduces the need for training

64. Which of the following best describes the "knowledge spiral" in extension education?
A) A linear process of learning
B) A dynamic interaction between tacit and explicit knowledge
C) A one-way flow of information
D) A method to restrict learning

65. What is the main objective of training-of-trainers (ToT) programs in extension education?

A) To limit the number of trainers
B) To equip trainers with knowledge to educate others
C) To standardize farming practices
D) To eliminate local trainers

66. Which extension method encourages experimentation and learning from failure?

A) Prescriptive methods
B) Rigid protocols
C) Learning-by-doing approach
D) Solely theoretical learning

67. What is the importance of sharing success stories in extension education?

A) They create competition
B) They inspire and motivate other farmers
C) They are irrelevant
D) They complicate the learning process

68. Which of the following best defines "capacity building" in agricultural extension?

A) Focusing solely on financial resources
B) Enhancing skills, knowledge, and abilities of farmers and extension workers
C) Limiting participation
D) Standardizing practices across regions

69. What is the significance of creating a supportive policy environment for agricultural extension?

A) It reduces access to services
B) It facilitates the implementation of effective extension programs
C) It complicates decision-making
D) It limits community involvement

70. Which of the following is a benefit of collaborating with universities in extension education?

A) It complicates the learning process
B) It enhances access to research and expert knowledge
C) It limits practical training opportunities
D) It creates competition among institutions

71. Which of the following is a common method for evaluating extension program success?

A) Monitoring participant attendance
B) Gathering qualitative and quantitative feedback
C) Measuring only financial outcomes
D) Conducting annual reports only

72. What is the significance of farmer-led innovation in extension education?

A) It undermines expert knowledge
B) It promotes local solutions and adaptability
C) It complicates the innovation process

D) It reduces diversity in practices

73. Which of the following describes "adaptive learning" in extension education?

A) Rigid adherence to traditional methods
B) Flexibility in adjusting practices based on feedback
C) Sole reliance on expert knowledge
D) Passive absorption of information

74. What is the significance of social capital in agricultural extension?

A) It is irrelevant to farming
B) It fosters trust and cooperation among farmers
C) It limits farmer networks
D) It complicates resource sharing

75. Which of the following best defines "farmers' rights" in extension education?

A) Farmers have no rights
B) Farmers should have access to information and resources
C) Farmers are restricted from decision-making
D) Farmers' rights are only legal protections

76. What role do gender-sensitive approaches play in agricultural extension?

A) They create inequality
B) They promote inclusivity and equity
C) They complicate programs
D) They limit participation

77. Which of the following is a challenge to implementing sustainable practices in agriculture?

A) High farmer engagement
B) Resistance to change and tradition
C) Abundance of resources
D) Strong governmental support

78. What is the goal of participatory action research (PAR) in extension education?

A) To control farmers' decisions
B) To empower communities through active involvement in research
C) To restrict access to knowledge
D) To standardize agricultural practices

79. Which extension strategy focuses on building local capacities for sustainable farming?

A) Traditional training methods
B) Capacity-building initiatives
C) Government-led directives
D) Financial incentives only

80. What is a significant outcome of effective extension education?

A) Decreased agricultural productivity
B) Enhanced farmer resilience and adaptability
C) Isolation of farmers
D) Limited access to information

81. Which of the following is essential for effective communication in extension education?

A) Use of jargon
B) Clarity and simplicity of information
C) Exclusively formal communication
D) One-way information flow

82. What is the importance of policy advocacy in agricultural extension?

A) It limits farmer involvement
B) It influences favorable conditions for farmers and extension services
C) It complicates service delivery
D) It reduces government support

83. Which of the following strategies enhances farmer participation in extension programs?

A) Mandating participation
B) Involving farmers in program design and evaluation
C) Restricting communication
D) Focusing solely on expert opinions

84. What is the role of agricultural education in promoting sustainable practices?

A) It has no impact
B) It raises awareness and builds skills for sustainability
C) It complicates farming methods
D) It limits innovation

85. What is the significance of integrating local culture in extension programs?

A) It complicates program implementation
B) It enhances acceptance and relevance of practices
C) It limits participation
D) It reduces the need for training

86. Which of the following best describes the "knowledge spiral" in extension education?

A) A linear process of learning
B) A dynamic interaction between tacit and explicit knowledge
C) A one-way flow of information
D) A method to restrict learning

87. What is the main objective of training-of-trainers (ToT) programs in extension education?

A) To limit the number of trainers
B) To equip trainers with knowledge to educate others
C) To standardize farming practices
D) To eliminate local trainers

88. Which extension method encourages experimentation and learning from failure?

A) Prescriptive methods
B) Rigid protocols
C) Learning-by-doing approach
D) Solely theoretical learning

89. What is the importance of sharing success stories in extension education?

A) They create competition
B) They inspire and motivate other farmers
C) They are irrelevant
D) They complicate the learning process

90. Which of the following best defines "capacity building" in agricultural extension?

A) Focusing solely on financial resources
B) Enhancing skills, knowledge, and abilities of farmers and extension workers
C) Limiting participation
D) Standardizing practices across regions

91. What is the significance of creating a supportive policy environment for agricultural extension?

A) It reduces access to services
B) It facilitates the implementation of effective extension programs
C) It complicates decision-making
D) It limits community involvement

92. Which of the following is a benefit of collaborating with universities in extension education?

A) It complicates the learning process
B) It enhances access to research and expert knowledge
C) It limits practical training opportunities
D) It creates competition among institutions

93. What is the importance of addressing climate change in agricultural extension programs?

A) It has no relevance
B) It ensures farmers are equipped to adapt and mitigate impacts
C) It complicates farming practices
D) It reduces the need for training

94. Which of the following describes "peer-to-peer learning" in extension education?

A) Learning solely from experts
B) Farmers sharing knowledge and experiences with each other
C) One-way communication
D) A formal training process

95. What is the role of agribusiness in agricultural extension?

A) To limit farmer access to markets
B) To provide resources, information, and support to farmers
C) To complicate the supply chain
D) To isolate farmers from information

96. Which of the following best describes "sustainable agriculture"?

A) Practices that harm the environment
B) Farming that meets current needs without compromising future generations
C) Solely chemical-based farming
D) Monoculture farming practices

97. What is the importance of creating a learning community in extension education?

A) It isolates farmers
B) It fosters collaboration and knowledge sharing
C) It complicates the learning process
D) It limits access to information

98. What is the primary goal of agricultural extension services?

A) To increase agricultural production at all costs
B) To improve farmers' knowledge and skills for better livelihoods
C) To restrict farmers from using traditional methods
D) To promote urban agriculture exclusively

99. **Which method is most effective for adult learning in agricultural extension**?

A) Lecture-based teaching
B) Interactive workshops and discussions
C) One-way presentations
D) Written manuals only

100. **What is the significance of gender-responsive extension programs?**

A) They focus solely on men's needs
B) They ignore cultural contexts
C) They ensure both men and women have equal access to resources
D) They complicate program implementation

101. What is the role of feedback in extension education?

A) It is unnecessary
B) It helps improve programs and address farmer concerns
C) It complicates decision-making
D) It limits communication

102. What is a key component of participatory rural appraisal (PRA)?

A) Top-down decision-making
B) Community involvement in data collection and analysis
C) Sole reliance on expert opinions
D) Minimal farmer engagement

103. **Which of the following is a barrier to effective agricultural extension?**

A) High levels of farmer engagement
B) Poor infrastructure and limited resources
C) Availability of trained extension workers
D) Strong government support

104. What is the purpose of developing extension materials in local languages?

A) To confuse farmers
B) To ensure accessibility and understanding
C) To limit outreach
D) To increase costs

105. What is the importance of integrating nutrition education in agricultural extension?

A) It complicates farming practices
B) It promotes overall community health and well-being
C) It has no relevance to farming
D) It solely focuses on production

106. Which extension approach emphasizes learning through local experimentation?

A) Traditional top-down methods
B) Farmer Field Schools (FFS)
C) Solely theoretical classes
D) Standardized training programs

107. **What is the role of social media in agricultural extension?**

A) It complicates communication
B) It serves as a platform for information sharing and networking
C) It limits farmer engagement
D) It is irrelevant to agriculture

108. What is an important aspect of conflict resolution in extension education?

A) Ignoring differences
B) Open dialogue and negotiation
C) Enforcing top-down solutions
D) Creating divisions among farmers

109. Which of the following is a method to evaluate farmers' knowledge before extension training?

A) Ignoring existing knowledge
B) Pre-training assessments
C) Post-training evaluations only
D) Relying on assumptions

110. What is the significance of networking among extension workers?

A) It creates competition
B) It facilitates resource sharing and collaboration
C) It complicates communication
D) It limits professional development

111. What is the benefit of using demonstration plots in extension education?

A) They confuse farmers
B) They provide visual evidence of practices
C) They complicate learning
D) They are expensive to implement

112. Which of the following is a characteristic of effective agricultural extension leadership?

A) Authoritarian decision-making
B) Inclusiveness and collaboration
C) Ignoring farmer input

D) Rigid adherence to procedures

113. What is the purpose of a needs assessment in extension education?

A) To limit training topics
B) To identify gaps and tailor programs to farmers' needs
C) To enforce strict guidelines
D) To ignore farmer input

114. Which factor is essential for sustaining extension programs over time?

A) Reduced funding
B) Community ownership and involvement
C) Limiting farmer participation
D) Ignoring feedback

115. What is the role of research-extension linkages in agricultural development?

A) To limit farmer access to information
B) To ensure that research informs practical applications for farmers
C) To complicate the extension process
D) To enforce rigid standards

116. What is a significant advantage of using farmer cooperatives in extension programs?

A) They isolate farmers
B) They enhance resource sharing and collective bargaining
C) They complicate decision-making
D) They limit market access

117. What is the role of financial literacy in agricultural extension?

A) It is not relevant
B) It helps farmers manage resources effectively and make informed decisions
C) It complicates farming practices
D) It reduces the need for agricultural training

118. What is the significance of mentorship in agricultural extension?

A) It limits learning opportunities
B) It fosters knowledge transfer and skill development
C) It complicates program implementation
D) It creates competition among farmers

119. Which extension strategy is effective in addressing climate resilience?

A) Solely chemical-based solutions
B) Integrated approaches combining sustainable practices
C) Ignoring environmental factors
D) Monoculture farming

120. What is a key benefit of training extension workers on soft skills?

A) It complicates their roles
B) It enhances communication and relationship-building with farmers
C) It reduces their technical knowledge
D) It limits their effectiveness

121. What is the role of community-based organizations in extension education?

A) They hinder farmer participation
B) They enhance local engagement and support for extension services
C) They limit outreach
D) They create divisions among farmers

122. What is the benefit of conducting regular training updates for extension workers?

A) It is unnecessary
B) It ensures they are informed about the latest practices and Technologies
C) It complicates their roles
D) It limits their engagement with farmers

Statistics in Agriculture

1. **What is the primary purpose of agricultural statistics?**
   A) To increase crop prices
   B) To provide data for decision-making and policy formulation
   C) To confuse farmers
   D) To reduce crop yields

2. **Which of the following is a commonly used statistical method in agricultural research?**
   A) Regression analysis
   B) Literary analysis
   C) Historical review
   D) Intuitive judgment

3. **What does the term "sample size" refer to in agricultural surveys?**
   A) The total population of farmers
   B) The number of respondents chosen for the study
   C) The geographical area of the study
   D) The duration of the study

4. **Which statistical measure indicates the central tendency of a data set?**
   A) Variance
   B) Mean
   C) Range
   D) Standard deviation

5. **What is the significance of confidence intervals in agricultural research?**
   A) They predict future yields
   B) They provide a range within which the true population parameter lies
   C) They eliminate the need for sampling

D) They are not useful

6. **Which of the following is a qualitative statistical method?**
   A) Descriptive statistics
   B) Hypothesis testing
   C) Focus group discussions
   D) Regression analysis

7. **What does "standard deviation" measure in agricultural data?**
   A) The average yield
   B) The variability or dispersion of data points
   C) The total yield
   D) The maximum yield

8. **In sampling, what does "random sampling" ensure?**
   A) Equal representation of all groups
   B) Convenience for the researcher
   C) Selection of the most knowledgeable individuals
   D) Quick data collection

9. **What is the primary use of descriptive statistics in agriculture?**
   A) To make predictions
   B) To summarize and describe the features of a data set
   C) To test hypotheses
   D) To enforce regulations

10. **Which statistical software is commonly used in agricultural research?**
    A) Microsoft Word
    B) SPSS
    C) Adobe Photoshop
    D) PowerPoint

11. **What is the purpose of using a control group in agricultural experiments?**
    A) To maximize yields
    B) To compare results against a standard
    C) To complicate analysis
    D) To increase costs

12. **Which type of graph is best for displaying the distribution of agricultural yields?**
    A) Bar graph
    B) Pie chart
    C) Histogram
    D) Line graph

13. **What is the importance of agricultural censuses?**
    A) To promote specific crops
    B) To collect comprehensive data on the agricultural sector
    C) To limit farming activities
    D) To reduce costs

14. **In the context of agricultural statistics, what does "variance" indicate?**

A) The average value
B) The extent of variation among data points
C) The minimum yield
D) The number of samples

15. **What is the benefit of using time series analysis in agriculture?**
A) To analyze one-time data
B) To observe trends over time
C) To complicate forecasting
D) To ignore seasonal patterns

16. **Which of the following is a common statistical test used to compare two means?**
A) Chi-square test
B) T-test
C) ANOVA
D) Regression analysis

17. **What does the term "outlier" refer to in statistical analysis?**
A) A common data point
B) A value that is significantly different from others
C) The average value
D) The total number of observations

18. **What is the function of a frequency distribution table?**
A) To summarize data points
B) To provide a visual representation of data
C) To list all observations in chronological order
D) To ignore repeated measures

19. **In agricultural economics, what does "elasticity" measure?**
A) The amount of crops produced
B) The responsiveness of supply or demand to price changes
C) The physical size of the farm
D) The total revenue generated

20. **What is a key feature of stratified sampling?**
A) Random selection from the entire population
B) Division of the population into subgroups before sampling
C) Convenience sampling
D) Selection of only the highest yielding farms

21. **Which of the following is a primary source of agricultural data?**
A) Newspapers
B) Farmer surveys
C) General knowledge
D) Fictional accounts

22. **What is the impact of sampling bias on agricultural research?**
A) It enhances data quality

B) It skews results and reduces reliability
C) It simplifies analysis
D) It guarantees accurate findings

23. **In agricultural research, what does "hypothesis testing" involve?**
    A) Making assumptions without data
    B) Evaluating evidence to support or refute a claim
    C) Ignoring results
    D) Complicating data analysis

24. **What is the significance of the p-value in statistical analysis?**
    A) It indicates the size of the sample
    B) It helps determine the significance of results
    C) It represents the average
    D) It is irrelevant

25. **Which agricultural statistic is used to measure farm productivity?**
    A) Total land area
    B) Yield per hectare
    C) Total number of farms
    D) Number of farm workers

Ecology in Agriculture

1. **What is the role of biodiversity in agricultural systems?**
    A) It complicates farming practices
    B) It enhances ecosystem resilience and productivity
    C) It reduces crop yields
    D) It is not relevant

2. **What does the term "sustainable agriculture" refer to?**
    A) Farming that relies solely on chemical inputs
    B) Practices that maintain productivity while conserving resources
    C) Monoculture farming
    D) High-input farming

3. **Which of the following practices helps reduce soil erosion?**
    A) Overgrazing
    B) Cover cropping
    C) Monocropping
    D) Tillage

4. **What is a key benefit of agroforestry systems?**
    A) They increase chemical input use
    B) They enhance biodiversity and soil health
    C) They reduce farm income
    D) They limit crop rotation

5. **Which of the following is a consequence of deforestation for agriculture?**
    A) Increased biodiversity
    B) Soil degradation and loss of habitat
    C) Enhanced water quality

D) Improved climate stability

6. **What is integrated pest management (IPM)?**
   A) Sole reliance on chemical pesticides
   B) A holistic approach to managing pests using multiple strategies
   C) Ignoring pest issues
   D) Using only biological control methods

7. **How does crop rotation benefit soil health?**
   A) It promotes monoculture
   B) It reduces nutrient depletion and pest buildup
   C) It requires more chemical inputs
   D) It complicates farming

8. **What is the primary concern of soil salinization?**
   A) Increased biodiversity
   B) Reduced soil fertility and crop yields
   C) Improved soil structure
   D) Enhanced water retention

9. **Which of the following is a renewable resource in agriculture?**
   A) Fossil fuels
   B) Soil
   C) Chemical fertilizers
   D) Pesticides

10. **What is the function of wetlands in agricultural landscapes?**
    A) They are unproductive areas
    B) They improve water quality and provide habitat
    C) They increase flooding risk
    D) They only support aquatic life

11. **What is the concept of "agroecology"?**
    A) The study of chemical inputs in agriculture
    B) The application of ecological principles to agricultural systems
    C) A focus on monoculture practices
    D) The exclusion of native species

12. **Which practice is most effective for conserving water in agriculture?**
    A) Flood irrigation
    B) Drip irrigation
    C) Surface runoff
    D) Overwatering

13. **What is the impact of climate change on agriculture?**
    A) It always increases yields
    B) It can disrupt growing seasons and reduce crop productivity
    C) It has no effect
    D) It simplifies farming practices

14. **Which of the following is a benefit of using organic fertilizers?**
    A) They are more harmful than synthetic fertilizers
    B) They improve soil structure and fertility
    C) They reduce microbial activity

D) They are less effective than chemical fertilizers

15. **What role do pollinators play in agriculture?**
    A) They are pests
    B) They contribute to crop pollination and increased yields
    C) They compete with crops
    D) They are not significant

16. **How can farmers mitigate soil erosion?**
    A) By clearing vegetation
    B) Through conservation tillage and cover crops
    C) By using more pesticides
    D) By planting only one crop

17. **What is the significance of native plant species in agriculture?**
    A) They are less resilient than exotic species
    B) They support local ecosystems and biodiversity
    C) They require more resources
    D) They are irrelevant to farming

18. **What is the impact of monoculture farming on soil health?**
    A) It enhances biodiversity
    B) It depletes soil nutrients and increases vulnerability to pests
    C) It improves soil structure
    D) It has no effect

19. **Which of the following practices is essential for organic farming?**
    A) Use of synthetic fertilizers
    B) Crop rotation and biodiversity
    C) Monoculture
    D) High pesticide usage

20. **What is the purpose of agroecological zoning?**
    A) To limit crop diversity
    B) To identify areas suitable for specific crops based on ecological conditions
    C) To promote monoculture
    D) To ignore local conditions

21. **How does composting benefit agricultural ecosystems?**
    A) It creates waste
    B) It improves soil fertility and reduces waste
    C) It complicates farming practices
    D) It increases dependency on chemical inputs

22. **What is the main advantage of intercropping?**
    A) It simplifies pest management
    B) It increases biodiversity and reduces pest outbreaks
    C) It requires more inputs
    D) It complicates crop management

23. **What is the effect of using genetically modified organisms (GMOs) in agriculture?**
    A) They always harm the environment

B) They can enhance yields and resistance to pests and diseases
C) They have no impact on productivity
D) They are only beneficial for certain crops

24. **What is the ecological impact of using chemical pesticides?**
    A) They have no impact
    B) They can harm beneficial insects and disrupt ecosystems
    C) They improve biodiversity
    D) They enhance soil health

25. **What is the benefit of maintaining hedgerows in agricultural areas?**
    A) They take up valuable land
    B) They provide habitats for wildlife and reduce erosion
    C) They limit biodiversity
    D) They complicate farming practices

Agricultural Policies in the Philippines

1. **What is the main goal of the Agricultural Modernization Act in the Philippines?**
    A) To reduce crop production
    B) To enhance the competitiveness of the agricultural sector
    C) To promote urban agriculture only
    D) To eliminate small farmers

2. **Which government agency is primarily responsible for agricultural policy in the Philippines?**
    A) Department of Health
    B) Department of Agriculture
    C) Department of Education
    D) Department of Trade and Industry

3. **What is the purpose of the Comprehensive Agrarian Reform Program (CARP)?**
    A) To increase agricultural exports
    B) To redistribute land to landless farmers
    C) To promote urban development
    D) To eliminate cooperatives

4. **What is the significance of the Food Security Act in the Philippines?**
    A) It focuses only on urban food distribution
    B) It aims to ensure the availability and accessibility of food for all
    C) It limits agricultural production
    D) It ignores local farmers' needs

5. **Which policy promotes the establishment of agricultural cooperatives?**
    A) The Cooperative Code of the Philippines
    B) The Land Use Act
    C) The Tariff and Customs Code
    D) The Agribusiness Law

6. **What is the main purpose of the Philippine Rice Tariffication Law?**
    A) To eliminate rice imports
    B) To ensure stable rice prices through import tariffs
    C) To promote only local rice production
    D) To disregard farmer welfare

7. **What role does the National Food Authority (NFA) play in the Philippines?**
    A) It regulates education
    B) It oversees food safety
    C) It manages the supply and price stabilization of rice
    D) It focuses on industrial agriculture

8. **What is the focus of the Agricultural Competitiveness Enhancement Fund (ACEF)?**
    A) To eliminate competition in agriculture
    B) To support farmers and enhance agricultural competitiveness
    C) To reduce government spending
    D) To promote urban agriculture only

9. **Which policy encourages the use of organic farming practices?**
    A) The Organic Agriculture Act
    B) The National Land Use Act
    C) The Agricultural Modernization Act
    D) The Comprehensive Agrarian Reform Program

10. **What is the aim of the National Agricultural and Fisheries Modernization and Industrialization Plan?**
    A) To restrict agricultural technology
    B) To enhance the productivity and competitiveness of the agriculture and fisheries sectors
    C) To promote only traditional farming
    D) To limit investment in agriculture

11. **What is the main objective of the Agrarian Reform Fund?**
    A) To provide loans to large agribusinesses
    B) To finance the implementation of agrarian reform programs
    C) To eliminate smallholder farmers
    D) To reduce agricultural production

12. **Which of the following policies addresses climate change impacts on agriculture?**
    A) The National Land Use Act
    B) The National Climate Change Action Plan
    C) The Tariff and Customs Code
    D) The Food Security Act

13. **What is the function of the Bureau of Agricultural Statistics (BAS) in the Philippines?**
    A) To implement agricultural projects
    B) To collect and analyze agricultural data
    C) To promote agricultural exports
    D) To regulate food prices

14. **Which program aims to improve the access of small farmers to financial resources?**

A) The Agrarian Reform Fund
B) The Philippine Crop Insurance Corporation
C) The Agricultural Competitiveness Enhancement Fund
D) The National Irrigation Administration

15. **What does the Philippine Fisheries Code aim to achieve?**
A) To restrict fishing activities
B) To promote sustainable fisheries management
C) To eliminate small-scale fishers
D) To prioritize aquaculture over capture fisheries

16. **Which policy addresses rural development in the Philippines?**
A) The National Land Use Act
B) The Philippine Rural Development Plan (PRDP)
C) The Organic Agriculture Act
D) The National Irrigation Act

17. **What is the purpose of the Agricultural Insurance Program?**
A) To eliminate risks in agriculture
B) To provide financial protection to farmers against losses
C) To reduce productivity
D) To discourage farming activities

18. **What is the significance of the National Organic Agriculture Program?**
A) To promote chemical farming
B) To support the growth of organic farming in the Philippines
C) To limit agricultural practices
D) To encourage monoculture

19. **What is the primary focus of the National Irrigation Administration (NIA)?**
A) To restrict water access for farmers
B) To develop and manage irrigation systems for agriculture
C) To promote only rain-fed agriculture
D) To ignore irrigation needs

20. **What is the impact of the Agricultural Trade Liberalization Policy?**
A) It protects local farmers from foreign competition
B) It encourages importation and competition in the agricultural sector
C) It limits agricultural exports
D) It disregards market demands

21. **What is the role of the Department of Agrarian Reform (DAR)?**
A) To support large landowners
B) To implement agrarian reform and land distribution
C) To eliminate cooperatives
D) To focus only on industrial agriculture

22. **Which program focuses on youth engagement in agriculture?**
A) The Agrarian Reform Program
B) The Young Farmers Program
C) The National Organic Agriculture Program
D) The Philippine Fisheries Program

23. **What does the Agricultural and Fisheries Modernization Act (AFMA) aim to achieve?**
    A) To restrict technological advancements in agriculture
    B) To promote modernization and competitiveness in agriculture and fisheries
    C) To eliminate small farmers
    D) To focus solely on traditional practices

24. **What is the main goal of the National Agricultural and Fisheries Mechanization Program?**
    A) To eliminate technology in farming
    B) To promote the use of modern farming equipment and technologies
    C) To restrict agricultural mechanization
    D) To ignore mechanization needs

25. **Which of the following is a primary concern of agricultural trade policies?**
    A) Ensuring food security
    B) Supporting only large agribusinesses
    C) Limiting market access for imports
    D) Ignoring local farmer needs

COMMON BOARD EXAMINATION REVIEWER FOR AGRICULTURE
With Answer and Rationale

The Board Examination for Agriculture in the Philippines which covers a range of subjects relevant to agricultural practices, science, and management. Common areas of coverage include:

A. **Agronomy** - Study of crop production and soil management.
B. **Horticulture** - Focus on fruits, vegetables, and ornamental plants.
C. **Animal Science** - Livestock management and animal production.
D. **Agricultural Engineering** - Application of engineering principles to agriculture.
E. **Soil Science** - Understanding soil properties and management.
F. **Plant Pathology** - Study of plant diseases and their control.
G. **Entomology** - Insect biology and pest management.
H. **Agricultural Economics** - Economic principles applied to agriculture.
I. **Extension Education** - Methods for disseminating agricultural knowledge.

The exam may also include general subjects such as **statistics**, **ecology**, and **agricultural policies**. It is advisable for students or takers to check the specific syllabus from the Professional Regulation Commission (PRC) or relevant governing body for the most accurate and updated information.

A. Agronomy

1. Which of the following is considered a primary macronutrient for plant growth?

A) Iron
B) Nitrogen
C) Manganese
D) Zinc

Answer: B) Nitrogen

Rationale: Nitrogen is essential for plant growth and is a major component of amino acids, proteins, and chlorophyll.

2. What is the ideal pH range for most crops?

A) 4.0 - 5.0
B) 5.5 - 7.0
C) 7.5 - 8.5
D) 9.0 - 10.0

Answer: B) 5.5 - 7.0

Rationale: Most crops thrive in slightly acidic to neutral pH conditions, which enhance nutrient availability.

3. Which of the following crops is primarily grown for its tubers?

A) Rice
B) Corn
C) Sweet potato
D) Soybean

Answer: C) Sweet potato

Rationale: Sweet potatoes are cultivated primarily for their edible tubers.

4. What is the process of adding organic matter to the soil to improve its fertility?

A) Irrigation
B) Fertilization
C) Mulching
D) Composting

Answer: D) Composting

Rationale: Composting adds organic matter, improving soil structure and fertility.

5. Which of the following is a method of irrigation?

A) Crop rotation
B) Furrow irrigation
C) Cover cropping
D) Green manuring

Answer: B) Furrow irrigation

Rationale: Furrow irrigation involves creating furrows in the field to channel water directly to the crops.

6. What is the primary purpose of crop rotation?

A) To increase pest populations
B) To enhance soil fertility
C) To reduce labor costs
D) To use more water

Answer: B) To enhance soil fertility

Rationale: Crop rotation helps to manage soil nutrients and break pest and disease cycles.

7. **Which plant hormone is primarily responsible for cell elongation?**

A) Ethylene
B) Gibberellin
C) Auxin
D) Abscisic acid
Answer: C) Auxin
Rationale: Auxins promote cell elongation, influencing growth direction.

8. What is the main benefit of cover crops?

A) Increase crop yield
B) Suppress weed growth
C) Enhance soil erosion
D) Increase fertilizer use
Answer: B) Suppress weed growth
Rationale: Cover crops help suppress weeds and improve soil health when tilled into the soil.

9. Which of the following is a method of organic farming?

A) Use of synthetic fertilizers
B) Crop monoculture
C) Green manuring
D) Pesticide application
Answer: C) Green manuring
Rationale: Green manuring involves growing specific crops to improve soil fertility without synthetic inputs.

10. What is the recommended planting depth for most vegetable seeds?

A) 1-2 cm
B) 5-7 cm
C) 10-15 cm
D) 20-25 cm
Answer: A) 1-2 cm
Rationale: Most vegetable seeds are planted at a shallow depth of 1-2 cm to ensure proper germination.

11. Which of the following is a symptom of nitrogen deficiency in plants?

A) Yellowing of older leaves
B) Stunted growth
C) Leaf curling
D) Browning of leaf edges
Answer: A) Yellowing of older leaves
Rationale: Nitrogen deficiency often causes chlorosis, particularly in older leaves as nitrogen is mobile within the plant.

12. What is the purpose of tillage in agriculture?

A) To increase soil compaction
B) To control pests
C) To prepare the seedbed
D) To increase water runoff
Answer: C) To prepare the seedbed
Rationale: Tillage is used to prepare soil for planting by improving seedbed conditions.

13. **Which crop is commonly associated with the use of a "transplanter"?**

A) Corn
B) Rice
C) Wheat
D) Barley
Answer: B) Rice
Rationale: Transplanters are primarily used in rice cultivation to transplant seedlings into flooded fields.

14. What is "soil erosion"?

A) Increase in soil fertility
B) Loss of topsoil due to water or wind
C) Addition of organic matter
D) Compaction of soil
Answer: B) Loss of topsoil due to water or wind
Rationale: Soil erosion leads to the loss of the fertile top layer of soil, affecting agricultural productivity.

15. Which of the following practices helps conserve soil moisture?

A) Tilling
B) Cover cropping
C) Excessive irrigation
D) Crop monoculture
Answer: B) Cover cropping
Rationale: Cover crops help retain soil moisture by reducing evaporation and improving soil structure.

16. Which nutrient is primarily responsible for root development in plants?

A) Phosphorus
B) Potassium
C) Calcium
D) Magnesium
Answer: A) Phosphorus
Rationale: Phosphorus is essential for root growth and development, as well as energy transfer within the plant.

17. What is the term for the practice of growing two or more crops in the same area during a single growing season?

A) Crop rotation
B) Intercropping
C) Monoculture
D) Agroforestry
Answer: B) Intercropping
Rationale: Intercropping involves growing different crops together to optimize space and resources.

18. Which of the following is a leguminous cover crop commonly used for nitrogen fixation?

A) Maize
B) Sorghum
C) Cowpea
D) Barley
Answer: C) Cowpea
Rationale: Cowpeas are legumes that can fix atmospheric nitrogen, enriching the soil.

19. **Which factor is most critical in determining the type of crops that can be grown in a particular area?**

A) Soil texture
B) Market demand
C) Farmer's experience
D) Crop rotation

Answer: A) Soil texture

Rationale: Soil texture influences water retention, drainage, and nutrient availability, which are vital for crop selection.

20. What is the purpose of mulching in agriculture?

A) To increase soil temperature
B) To suppress weed growth and retain moisture
C) To improve soil compaction
D) To facilitate pest attraction

Answer: B) To suppress weed growth and retain moisture

Rationale: Mulching helps maintain soil moisture levels and suppresses weed growth.

21. What is the primary method of controlling weeds in organic farming?

A) Herbicides
B) Manual weeding
C) Soil fumigation
D) Genetic modification

Answer: B) Manual weeding

Rationale: Organic farming relies on manual or mechanical methods for weed control, avoiding synthetic herbicides.

22. Which of the following is an indicator of good soil health?

A) Low organic matter content
B) High erosion rates
C) Presence of earthworms
D) High acidity

Answer: C) Presence of earthworms

Rationale: Earthworms are beneficial organisms that enhance soil structure and fertility, indicating healthy soil.

23. Which irrigation method is most water-efficient?

A) Flood irrigation
B) Drip irrigation
C) Furrow irrigation
D) Surface irrigation

Answer: B) Drip irrigation

Rationale: Drip irrigation delivers water directly to the plant roots, minimizing evaporation and runoff.

24. What is the primary reason for applying compost to soil?

A) To increase soil pH
B) To enhance microbial activity and nutrient availability
C) To compact the soil
D) To reduce soil temperature

Answer: B) To enhance microbial activity and nutrient availability

Rationale: Compost improves soil structure, nutrient content, and supports beneficial microorganisms.

25. Which of the following is a characteristic of loamy soil?

A) High sand content
B) High clay content
C) Balanced mixture of sand, silt, and clay
D) Low organic matter content
Answer: C) Balanced mixture of sand, silt, and clay
Rationale: Loamy soil has a balanced texture that provides good drainage and nutrient retention.

26. What is the main purpose of crop diversity?

A) To simplify pest management
B) To increase soil compaction
C) To enhance ecosystem resilience
D) To reduce labor costs
Answer: C) To enhance ecosystem resilience
Rationale: Crop diversity helps protect against pests, diseases, and extreme weather conditions.

27. Which fertilizer type is typically high in potassium?

A) Urea
B) Superphosphate
C) Muriate of potash
D) Ammonium sulfate
Answer: C) Muriate of potash
Rationale: Muriate of potash is a common potassium fertilizer that promotes fruit development and overall plant health.

28. What is the process of breaking down organic matter into simpler substances by microorganisms called?

A) Fermentation
B) Composting
C) Mineralization
D) Photosynthesis
Answer: B) Composting
Rationale: Composting involves microbial decomposition of organic matter, producing nutrient-rich compost.

29. Which of the following practices is used to improve soil aeration?

A) Tillage
B) Mulching
C) Irrigation
D) Fertilization
Answer: A) Tillage
Rationale: Tillage helps to break up compacted soil, improving aeration and root penetration.

30. What is the term for planting crops in rows with alternating plants of different species?

A) Intercropping
B) Monoculture
C) Strip cropping
D) Relay cropping
Answer: A) Intercropping
Rationale: Intercropping involves planting different crops together in a single field to optimize land use and enhance biodiversity.

31. **What is the primary benefit of using green manures?**

A) Reduces soil pH
B) Enhances soil fertility and structure
C) Increases soil compaction
D) Suppresses beneficial microbes
Answer: B) Enhances soil fertility and structure
Rationale: Green manures improve soil organic matter, nutrient content, and overall soil structure.

32. Which of the following is a sign of phosphorus deficiency in plants?

A) Yellowing of older leaves
B) Purplish coloration of leaves
C) Leaf curling
D) Brown leaf tips
Answer: B) Purplish coloration of leaves
Rationale: Phosphorus deficiency often results in a purplish hue on leaves due to poor energy transfer.

33. Which practice is effective for reducing soil erosion on sloped lands?

A) Contour farming
B) Intensive tillage
C) Monocropping
D) Burning crop residues
Answer: A) Contour farming
Rationale: Contour farming involves planting across the slope, which helps slow water runoff and reduce erosion.

34. What is the term for the maximum amount of water a soil can hold against the force of gravity?

A) Field capacity
B) Wilting point
C) Saturation
D) Hygroscopic water
Answer: A) Field capacity
Rationale: Field capacity is the amount of water retained in soil after excess water has drained, available for plant use.

35. Which of the following crops is typically classified as a cereal?

A) Potato
B) Rice
C) Tomato
D) Carrot
Answer: B) Rice
Rationale: Rice is a major cereal crop, important for staple food production worldwide.

36. What is the role of potassium in plants?

A) Promotes root development
B) Enhances disease resistance and drought tolerance
C) Increases photosynthesis rate
D) Fixes atmospheric nitrogen
Answer: B) Enhances disease resistance and drought tolerance
Rationale: Potassium helps plants manage water uptake and enhances overall stress resilience.

37. **Which of the following is a method to test soil fertility?**

A) Visual inspection
B) Soil sampling and analysis
C) Measuring temperature
D) Counting earthworms

Answer: B) Soil sampling and analysis

Rationale: Soil sampling and laboratory analysis provide accurate information on nutrient levels and soil health.

38. What type of plant is often used as a cover crop to prevent soil erosion?

A) Legumes
B) Grasses
C) Succulents
D) Ferns

Answer: B) Grasses

Rationale: Grasses, with their extensive root systems, are effective in stabilizing soil and preventing erosion.

39. Which farming practice involves planting crops in different seasons to maximize productivity?

A) Intercropping
B) Crop rotation
C) Monoculture
D) Agroforestry

Answer: B) Crop rotation

Rationale: Crop rotation involves alternating crops in different seasons to improve soil fertility and reduce pest buildup.

40. What is the best time to plant rice in the Philippines?

A) Dry season
B) Wet season
C) Winter
D) Anytime

Answer: B) Wet season

Rationale: Rice is primarily grown during the wet season when there is adequate water supply.

41. What is the primary purpose of soil conservation practices?

A) Increase crop yields
B) Prevent soil erosion and degradation
C) Promote monoculture
D) Enhance pest populations

Answer: B) Prevent soil erosion and degradation

Rationale: Soil conservation practices aim to maintain soil health and prevent loss of topsoil, which is vital for sustainable agriculture.

42. Which nutrient is essential for chlorophyll synthesis in plants?

A) Nitrogen
B) Phosphorus
C) Potassium
D) Calcium

Answer: A) Nitrogen

Rationale: Nitrogen is a key component of chlorophyll, the green pigment necessary for photosynthesis.

43. **What is a benefit of practicing agroforestry?**

A) Increased soil erosion
B) Enhanced biodiversity and resource efficiency
C) Higher pesticide use
D) Monoculture promotion
Answer: B) Enhanced biodiversity and resource efficiency
Rationale: Agroforestry integrates trees with crops or livestock, promoting biodiversity and efficient use of resources.

44. Which of the following is a common method of pest management in sustainable agriculture?

A) Monoculture
B) Integrated Pest Management (IPM)
C) Sole use of chemical pesticides
D) Ignoring pest problems
Answer: B) Integrated Pest Management (IPM)
Rationale: IPM combines biological, cultural, physical, and chemical tools to manage pests in an environmentally sustainable way.

45. Which factor is most critical in determining the suitability of land for agriculture?

A) Proximity to urban areas
B) Climate and soil type
C) Government policies
D) Availability of machinery
Answer: B) Climate and soil type
Rationale: Climate and soil type directly influence crop growth and agricultural productivity.

46. Which crop is often referred to as a "cash crop"?

A) Wheat
B) Sugarcane
C) Corn
D) Barley
Answer: B) Sugarcane
Rationale: Cash crops are grown for profit, and sugarcane is a prominent example due to its high market value.

47. What is the ideal soil moisture level for most crops at planting?

A) Saturated
B) Field capacity
C) Below wilting point
D) Completely dry
Answer: B) Field capacity
Rationale: At field capacity, soil retains enough moisture for optimal seed germination and root growth.

48. Which of the following is a key feature of sustainable agriculture?

A) High chemical input
B) Preservation of natural resources
C) Intensive monoculture
D) Focus on short-term profits
Answer: B) Preservation of natural resources
Rationale: Sustainable agriculture emphasizes long-term health of the environment and natural resources.

49. **What is the function of a soil amendment?**

A) To prevent erosion
B) To improve soil structure and fertility
C) To increase water runoff
D) To create hardpan
Answer: B) To improve soil structure and fertility
Rationale: Soil amendments enhance physical and chemical properties of the soil, promoting better plant growth.

50. Which of the following practices is NOT recommended for maintaining soil health?

A) Crop rotation
B) Cover cropping
C) Excessive tillage
D) Organic matter addition
Answer: C) Excessive tillage
Rationale: Excessive tillage can degrade soil structure and lead to erosion, while the other practices improve soil health.

51. Which of the following is an example of a leguminous crop?

A) Rice
B) Wheat
C) Soybean
D) Barley
Answer: C) Soybean
Rationale: Soybeans are legumes that can fix nitrogen in the soil through their root nodules.

52. What does the term "sustainable agriculture" primarily focus on?

A) Maximizing short-term yields
B) Environmental health and resource conservation
C) Use of synthetic fertilizers and pesticides
D) Increasing land use intensity
Answer: B) Environmental health and resource conservation
Rationale: Sustainable agriculture aims to meet current food needs while preserving resources for future generations.

53. Which soil type is best for water retention and nutrient availability?

A) Sandy soil
B) Clay soil
C) Loamy soil
D) Silt soil
Answer: C) Loamy soil
Rationale: Loamy soil, with a balanced mixture of sand, silt, and clay, offers good water retention and nutrient availability.

54. What is the primary advantage of using drought-resistant crop varieties?

A) Higher market prices
B) Reduced fertilizer requirements
C) Increased resilience to water scarcity
D) Improved pest resistance
Answer: C) Increased resilience to water scarcity
Rationale: Drought-resistant varieties are bred to withstand low water conditions, improving food security in arid regions.

55. Which of the following is NOT a benefit of using cover crops?

A) Suppressing weeds
B) Enhancing soil fertility
C) Increasing soil erosion
D) Improving soil structure
Answer: C) Increasing soil erosion
Rationale: Cover crops are used to prevent soil erosion, not increase it.

56. What is the main purpose of soil pH testing?

A) To determine soil texture
B) To assess nutrient availability
C) To evaluate soil moisture
D) To measure compaction
Answer: B) To assess nutrient availability
Rationale: Soil pH affects nutrient solubility and availability for plant uptake.

57. Which practice helps to reduce the spread of soil-borne diseases?

A) Monocropping
B) Crop rotation
C) Excessive watering
D) Tillage
Answer: B) Crop rotation
Rationale: Crop rotation helps interrupt the life cycles of soil-borne pathogens and pests.

58. What is the main benefit of implementing precision agriculture?

A) Decreased yields
B) Increased resource efficiency
C) Higher labor costs
D) Simplified farming practices
Answer: B) Increased resource efficiency
Rationale: Precision agriculture uses technology to optimize inputs and improve yields while conserving resources.

59. Which nutrient deficiency is characterized by interveinal chlorosis in younger leaves?

A) Nitrogen
B) Magnesium
C) Potassium
D) Phosphorus
Answer: B) Magnesium
Rationale: Magnesium deficiency typically shows interveinal chlorosis, particularly in younger leaves, due to its role in chlorophyll.

60. What is the primary function of mycorrhizal fungi in agriculture?

A) Fix atmospheric nitrogen
B) Decompose organic matter
C) Enhance nutrient uptake for plants
D) Suppress weeds
Answer: C) Enhance nutrient uptake for plants
Rationale: Mycorrhizal fungi form symbiotic relationships with plant roots, increasing their ability to absorb nutrients and water.

61. **What is the primary advantage of using organic fertilizers?**

A) Immediate nutrient release
B) Improvement of soil structure and health
C) Higher toxicity to pests
D) Lower cost than synthetic fertilizers
Answer: B) Improvement of soil structure and health
Rationale: Organic fertilizers enhance soil structure, promote microbial activity, and improve overall soil health.

62. Which of the following is considered a secondary macronutrient?

A) Calcium
B) Nitrogen
C) Phosphorus
D) Potassium
Answer: A) Calcium
Rationale: Calcium is classified as a secondary macronutrient, essential for cell wall structure and plant growth.

63. What does "no-till farming" primarily aim to achieve?

A) Increase soil compaction
B) Reduce erosion and improve soil health
C) Simplify pest management
D) Maximize chemical input use
Answer: B) Reduce erosion and improve soil health
Rationale: No-till farming preserves soil structure, reduces erosion, and enhances soil health by minimizing disturbance.

64. Which of the following is a common method for improving soil drainage?

A) Tillage
B) Adding organic matter
C) Installing drainage tiles
D) Cover cropping
Answer: C) Installing drainage tiles
Rationale: Drainage tiles help manage excess water, improving soil drainage and aeration.

65. What is the term for the practice of planting different crops in alternating rows?

A) Crop rotation
B) Monocropping
C) Intercropping
D) Agroforestry
Answer: C) Intercropping
Rationale: Intercropping involves growing different crops in proximity for mutual benefits, such as pest control and improved nutrient use.

66. Which crop is typically grown in a relay cropping system?

A) Rice
B) Corn
C) Soybean
D) All of the above
Answer: D) All of the above
Rationale: Relay cropping can involve various crops, where one crop is planted before another is harvested.

67. **What is the primary function of foliar fertilizers?**

A) To enhance root growth
B) To provide nutrients through leaves
C) To improve soil structure
D) To increase water retention

Answer: B) To provide nutrients through leaves

Rationale: Foliar fertilizers are applied directly to plant leaves for quick nutrient uptake.

68. Which of the following practices can lead to soil salinization?

A) Crop rotation
B) Over-irrigation
C) Cover cropping
D) Reduced tillage

Answer: B) Over-irrigation

Rationale: Over-irrigation can lead to the accumulation of salts in the soil, causing salinization.

69. What is the ideal temperature range for seed germination for most crops?

A) 0-10°C
B) 10-20°C
- C) 20-30°C
- D) 30-40°C

Answer: C) 20-30°C

Rationale: Most crops germinate best within the 20-30°C temperature range, which promotes optimal metabolic activity.

70.Which of the following is a benefit of using integrated nutrient management?

A) Increased dependence on synthetic fertilizers
B) Enhanced soil and crop productivity
C) Higher risk of soil degradation
D) Reduced crop diversity

Answer: B) Enhanced soil and crop productivity

Rationale: Integrated nutrient management combines organic and inorganic inputs for balanced nutrition, enhancing productivity and sustainability.

71. Which of the following practices is effective for pest control in organic farming?

A) Use of chemical pesticides
B) Crop rotation
C) Soil fumigation
D) Monoculture

Answer: B) Crop rotation

Rationale: Crop rotation helps disrupt pest life cycles, reducing their populations and minimizing damage.

72. What is the primary role of calcium in plants?

A) Energy transfer
B) Structural support
C) Photosynthesis
D) Nitrogen fixation

Answer: B) Structural support

Rationale: Calcium is vital for cell wall structure and stability, providing strength to plant tissues.

73. **Which nutrient is most commonly associated with fruit development?**

A) Nitrogen
B) Phosphorus
C) Potassium
D) Magnesium

Answer: C) Potassium

Rationale: Potassium plays a crucial role in fruit quality, development, and overall plant health.

74. What is the main cause of soil acidity?

A) Excessive organic matter
B) Leaching of basic cations
C) High clay content
D) High rainfall

Answer: B) Leaching of basic cations

Rationale: Soil acidity increases when essential nutrients like calcium and magnesium are leached away, often due to heavy rainfall.

75. Which of the following is NOT a characteristic of sustainable agriculture?

A) Use of renewable resources
B) Maintenance of ecological balance
C) Reliance on synthetic chemicals
D) Preservation of biodiversity

Answer: C) Reliance on synthetic chemicals

Rationale: Sustainable agriculture seeks to minimize the use of synthetic chemicals in favor of natural alternatives.

76. What is the purpose of using a soil amendment like gypsum?

A) To increase soil acidity
B) To improve soil drainage and structure
C) To suppress weeds
D) To enhance water retention

Answer: B) To improve soil drainage and structure

Rationale: Gypsum can help break up compacted soil and improve drainage without altering soil pH.

77. Which of the following is an indicator of soil compaction?

A) High organic matter content
B) Poor root growth and reduced water infiltration
C) Increased earthworm activity
D) Good soil aeration

Answer: B) Poor root growth and reduced water infiltration

Rationale: Soil compaction restricts root development and water movement, leading to poor plant health.

78. What is the function of a seed treatment?

A) To enhance germination
B) To protect against pests and diseases
C) To improve soil fertility
D) To increase water retention

Answer: B) To protect against pests and diseases

Rationale: Seed treatments help protect seeds from soil-borne pathogens and pests, promoting healthier germination.

79. Which of the following is a major benefit of agroecology?

A) Increased reliance on chemical inputs
B) Greater ecological balance and resilience
C) Simplified farming systems
D) Higher labor costs
Answer: B) Greater ecological balance and resilience
Rationale: Agroecology focuses on sustainable practices that enhance ecological health and resilience in agricultural systems.

80. What is the primary goal of conservation tillage?

A) To increase soil compaction
B) To reduce soil erosion and improve soil health
C) To eliminate the need for cover crops
D) To maximize crop yield through intensive tillage
Answer: B) To reduce soil erosion and improve soil health
Rationale: Conservation tillage minimizes soil disturbance, protecting against erosion and enhancing soil quality.

81. Which practice helps in controlling soil erosion on agricultural lands?

A) Overgrazing
B) Contour plowing
C) Excessive tillage
D) Monoculture
Answer: B) Contour plowing
Rationale: Contour plowing involves plowing across the slope of the land, which helps to reduce water runoff and soil erosion.

82. What is the main advantage of using mulch in agriculture?

A) To increase soil compaction
B) To suppress weed growth and retain moisture
C) To promote pest infestations
D) To enhance soil acidity
Answer: B) To suppress weed growth and retain moisture
Rationale: Mulch helps to prevent weed growth, retain soil moisture, and improve soil health.

83. Which of the following practices is essential for improving soil organic matter content?

A) Continuous cropping
B) Crop rotation with legumes
C) Intensive tillage
D) Use of chemical fertilizers
Answer: B) Crop rotation with legumes
Rationale: Rotating crops with legumes adds nitrogen and organic matter back into the soil, improving soil health.

84. What is the primary purpose of plant breeding?

A) To reduce crop yields
B) To develop varieties that resist diseases and pests
C) To simplify planting processes
D) To encourage monoculture
Answer: B) To develop varieties that resist diseases and pests
Rationale: Plant breeding aims to create crop varieties with desirable traits, including disease and pest resistance.

85. Which nutrient is primarily responsible for root development in plants?

A) Nitrogen
B) Phosphorus
C) Potassium
D) Calcium
Answer: B) Phosphorus
Rationale: Phosphorus is crucial for root growth and energy transfer within the plant.

86. What is the purpose of using a soil fertility map?

A) To determine crop rotation schedules
B) To visualize nutrient distribution across a field
C) To measure soil moisture levels
D) To identify pest hotspots
Answer: B) To visualize nutrient distribution across a field
Rationale: Soil fertility maps help farmers understand nutrient distribution, guiding more efficient fertilizer application.

87. Which of the following is a common indicator of nitrogen deficiency in plants?

A) Yellowing of older leaves
B) Stunted growth
C) Leaf curl
D) Purplish discoloration
Answer: A) Yellowing of older leaves
Rationale: Nitrogen deficiency often results in chlorosis, particularly in older leaves, as nitrogen is mobile within the plant.

88. What is the main goal of agroecology?

A) Increase chemical fertilizer use
B) Enhance agricultural sustainability and biodiversity
C) Simplify farming techniques
D) Maximize short-term yields
Answer: B) Enhance agricultural sustainability and biodiversity
Rationale: Agroecology focuses on integrating ecological principles into agricultural practices to promote sustainability and biodiversity.

89. Which of the following is a benefit of using biochar in soil management?

A) Increased soil acidity
B) Improved soil fertility and carbon sequestration
C) Higher leaching of nutrients
D) Reduction in soil aeration
Answer: B) Improved soil fertility and carbon sequestration
Rationale: Biochar enhances soil fertility and retains carbon, benefiting soil health and the environment.

90. What is the primary benefit of using cover crops in a cropping system?

A) Increase in soil erosion
B) Suppression of weeds and enhancement of soil structure
C) Higher fertilizer dependency
D) Reduced biodiversity
Answer: B) Suppression of weeds and enhancement of soil structure
Rationale: Cover crops prevent weeds and improve soil structure and health by adding organic matter.

91. **What is the primary role of nitrogen-fixing bacteria in agriculture?**

A) To decompose organic matter
B) To convert atmospheric nitrogen into a usable form for plants
C) To enhance soil drainage
D) To improve soil acidity
Answer: B) To convert atmospheric nitrogen into a usable form for plants
Rationale: Nitrogen-fixing bacteria convert atmospheric nitrogen into ammonia, which plants can use for growth.

92. Which of the following practices helps in conserving water in agriculture?

A) Flood irrigation
B) Drip irrigation
C) Overhead spraying
D) Soil compaction
Answer: B) Drip irrigation
Rationale: Drip irrigation delivers water directly to the plant roots, minimizing evaporation and runoff, thus conserving water.

93. What is the main reason for implementing integrated weed management?

A) To increase chemical herbicide use
B) To maximize soil disturbance
C) To reduce reliance on a single control method and enhance effectiveness
D) To promote monoculture
Answer: C) To reduce reliance on a single control method and enhance effectiveness
Rationale: Integrated weed management employs multiple strategies to control weeds, reducing resistance and improving overall effectiveness.

94. Which of the following is a characteristic of clay soil?

A) Quick drainage
B) High nutrient-holding capacity
C) Poor aeration
D) Light weight
Answer: B) High nutrient-holding capacity
Rationale: Clay soil has a high nutrient-holding capacity due to its small particle size and high surface area, but it can also lead to poor drainage.

95. What is the purpose of intercropping?

A) To grow a single crop variety
B) To reduce biodiversity
C) To maximize land use and improve crop yields
D) To simplify pest management
Answer: C) To maximize land use and improve crop yields
Rationale: Intercropping involves growing multiple crops in proximity to enhance productivity and resource use.

96. Which method is commonly used to improve the pH of acidic soils?

A) Applying sulfur
B) Adding lime
C) Increasing organic matter
D) Using ammonium fertilizers
Answer: B) Adding lime

Rationale: Lime is commonly applied to raise soil pH and reduce acidity, improving nutrient availability for crops.

97. **What is the main characteristic of precision agriculture?**

A) Use of traditional farming techniques
B) Adoption of technology to optimize field-level management
C) Reliance on high chemical inputs
D) Single crop cultivation

Answer: B) Adoption of technology to optimize field-level management

Rationale: Precision agriculture uses technology to analyze data and optimize farming practices for better efficiency and sustainability.

98. Which of the following is a benefit of planting windbreaks on farms?

A) Increased soil erosion
B) Enhanced soil fertility
C) Protection against wind damage and reduced evaporation
D) Decreased crop diversity

Answer: C) Protection against wind damage and reduced evaporation

Rationale: Windbreaks reduce wind speed, protecting crops and soil from erosion and moisture loss.

99. What is the purpose of soil testing in agriculture?

A) To identify soil texture
B) To evaluate nutrient levels and pH for informed management decisions
C) To assess crop yield potential
D) To measure soil compaction

Answer: B) To evaluate nutrient levels and pH for informed management decisions

Rationale: Soil testing helps farmers make informed decisions about fertilizer and amendment applications based on nutrient levels and pH.

100. What is the primary purpose of using organic amendments like compost?

A) To increase soil erosion
B) To enhance soil fertility and structure
C) To promote chemical dependency
D) To decrease microbial activity

Answer: B) To enhance soil fertility and structure

Rationale: Organic amendments improve soil fertility, structure, and microbial activity, promoting healthier soils and plants.

B. Horticulture

A set of 100 multiple-choice questions focused on horticulture in the Philippines, including answers and rationales.

1. **What is the primary purpose of pruning fruit trees?**
   A) To increase height
   B) To improve air circulation and fruit production
   C) To reduce pest populations
   D) To enhance leaf size
   Answer: B) To improve air circulation and fruit production
   Rationale: Pruning helps manage tree size, improves sunlight penetration, and encourages better fruit yield.

2. **Which of the following is a common method for propagating mango trees?**
   A) Division
   B) Air layering
   C) Grafting
   D) Seed planting
   Answer: C) Grafting
   Rationale: Grafting is often used for mangoes to ensure the new plant has desirable fruit characteristics.

3. **What nutrient is particularly important for flower development in plants?**
   A) Nitrogen
   B) Phosphorus
   C) Potassium
   D) Calcium
   Answer: B) Phosphorus
   Rationale: Phosphorus is vital for flower and fruit development, promoting root growth and energy transfer.

4. **Which of the following is a typical pest of vegetables in the Philippines?**
   A) Aphids
   B) Cabbage worms
   C) Fruit flies
   D) All of the above
   Answer: D) All of the above
   Rationale: All listed pests commonly affect various vegetables in the Philippines, impacting yields.

5. **What is the best time to plant rice in the Philippines?**
   A) During the dry season
   B) During the rainy season
   C) Throughout the year
   D) Only in the summer
   Answer: B) During the rainy season
   Rationale: The rainy season provides sufficient water, which is essential for rice cultivation.

6. **Which fruit is considered a tropical fruit native to the Philippines?**
   A) Apple
   B) Banana
   C) Cherry

D) Grapes

Answer: B) Banana

Rationale: Bananas thrive in tropical climates and are a staple fruit in the Philippines.

7. **What is the main advantage of using organic fertilizers?**

A) Quick nutrient release

B) Long-term soil health improvement

C) Higher salt content

D) Reduced labor requirements

Answer: B) Long-term soil health improvement

Rationale: Organic fertilizers enhance soil structure and microbial activity, benefiting long-term fertility.

8. Which of the following is a common symptom of nutrient deficiency in plants?

A) Green leaves

B) Wilting

C) Leaf yellowing

D) Excessive fruiting

Answer: C) Leaf yellowing

Rationale: Yellowing of leaves often indicates nutrient deficiencies, particularly nitrogen or magnesium.

9. What is the primary benefit of mulching around plants?

A) Attracting pests

B) Weeding prevention and moisture retention

C) Soil compaction

D) Increasing soil temperature

Answer: B) Weeding prevention and moisture retention

Rationale: Mulch suppresses weeds and retains soil moisture, enhancing plant growth.

10. Which of the following is a major challenge in urban gardening?

A) Lack of sunlight

B) Soil erosion

C) Pest control

D) Water availability

Answer: A) Lack of sunlight

Rationale: Urban areas may have limited sunlight due to buildings, affecting plant growth.

11. What type of soil is best suited for growing most vegetables?

A) Sandy soil

B) Clay soil

C) Loamy soil

D) Saline soil

Answer: C) Loamy soil

Rationale: Loamy soil balances drainage and nutrient retention, making it ideal for vegetable growth.

12. Which method is commonly used to control plant diseases in horticulture?

A) Tillage

B) Crop rotation

C) Fertilization

D) Overwatering

Answer: B) Crop rotation

Rationale: Crop rotation helps interrupt disease cycles by changing host plants.

13. What is the best time to harvest ripe mangoes?

A) When they are fully green
B) When they start to turn yellow
C) After they have fallen from the tree
D) When they are hard and firm

Answer: B) When they start to turn yellow

Rationale: Mangoes should be harvested when they begin to turn yellow for optimal ripeness and flavor.

14. Which type of irrigation is most efficient for fruit orchards?

A) Flood irrigation
B) Drip irrigation
C) Sprinkler irrigation
D) Surface irrigation

Answer: B) Drip irrigation

Rationale: Drip irrigation minimizes water waste by delivering water directly to the root zone.

15. Which of the following practices can enhance pollination in fruit crops?

A) Using chemical pesticides
B) Planting more flowers nearby
C) Reducing biodiversity
D) Limiting water availability

Answer: B) Planting more flowers nearby

Rationale: More flowers attract pollinators, improving fruit set and yield.

16. What is the purpose of hardening off seedlings?

A) To decrease their size
B) To acclimate them to outdoor conditions
C) To increase their growth rate
D) To enhance disease resistance

Answer: B) To acclimate them to outdoor conditions

Rationale: Hardening off prepares seedlings for the stress of outdoor conditions, improving survival rates.

17. Which of the following fruits is known for being high in Vitamin C?

A) Banana
B) Mango
C) Papaya
D) All of the above

Answer: D) All of the above

Rationale: All these fruits are excellent sources of Vitamin C, promoting health benefits.

18. Which horticultural practice involves growing plants without soil?

A) Traditional farming
B) Hydroponics
C) Organic farming
D) Monoculture

Answer: B) Hydroponics

Rationale: Hydroponics allows plants to grow in a nutrient-rich water solution instead of soil.

19. What is the primary goal of Integrated Pest Management (IPM)?

A) Complete eradication of pests
B) Reducing pest populations while minimizing harm to beneficial organisms
C) Reliance solely on chemical pesticides
D) Increasing pest diversity

Answer: B) Reducing pest populations while minimizing harm to beneficial organisms

Rationale: IPM focuses on sustainable pest control methods that protect beneficial organisms.

20. Which type of plant is commonly used for landscaping in the Philippines due to its vibrant flowers?

A) Bamboo
B) Bougainvillea
C) Palm trees
D) Ferns

Answer: B) Bougainvillea

Rationale: Bougainvillea is popular for its colorful blooms and is well-suited to the tropical climate.

21. What is the effect of too much nitrogen in soil?

A) Stunted growth
B) Leaf yellowing
C) Excessive leaf growth at the expense of flowers
D) Increased fruiting

Answer: C) Excessive leaf growth at the expense of flowers

Rationale: High nitrogen levels can lead to lush foliage but poor flowering and fruiting.

22. Which of the following is a common method for controlling weeds?

A) Manual weeding
B) Chemical herbicides
C) Mulching
D) All of the above

Answer: D) All of the above

Rationale: Each method can effectively control weeds, depending on the situation and desired approach.

23. What is the primary benefit of using a greenhouse?

A) Lower crop yields
B) Protection from adverse weather and pests
C) Increased labor costs
D) Decreased sunlight

Answer: B) Protection from adverse weather and pests

Rationale: Greenhouses provide a controlled environment that protects plants from harsh conditions.

24. Which variety of rice is commonly cultivated in the Philippines?

A) Basmati
B) Jasmine
C) Sinandomeng
D) Arborio

Answer: C) Sinandomeng

Rationale: Sinandomeng is a popular variety in the Philippines known for its taste and yield.

25. What is the main reason for using cover crops?

A) To decrease soil fertility

B) To improve soil health and prevent erosion
C) To increase pest populations
D) To reduce crop diversity
Answer: B) To improve soil health and prevent erosion
Rationale: Cover crops enhance soil structure and prevent erosion during off-seasons.

26. What type of climate is best for growing orchids?
A) Arid
B) Tropical
C) Temperate
D) Polar
Answer: B) Tropical
Rationale: Orchids thrive in warm, humid tropical environments, making them ideal for the Philippines.

27. Which of the following is a common organic pest control method?
A) Chemical sprays
B) Beneficial insects
C) Soil fumigation
D) Monoculture
Answer: B) Beneficial insects
Rationale: Introducing beneficial insects can help control pest populations naturally.

28. What is the main advantage of planting fruit trees in staggered rows?
A) Increased sunlight for all plants
B) Better air circulation and access for harvesting
C) Decreased water availability
D) Reduced biodiversity
Answer: B) Better air circulation and access for harvesting
Rationale: Staggered planting enhances air flow and eases maintenance and harvesting.

29. Which of the following practices can help in conserving soil moisture?
A) Tilling the soil
B) Cover cropping
C) Flooding fields
D) Planting in rows
Answer: B) Cover cropping
Rationale: Cover crops help retain moisture in the soil, reducing evaporation.

30. Which fruit is often referred to as the "king of fruits" in the Philippines?
A) Mango
B) Durian
C) Rambutan
D) Papaya
Answer: B) Durian
Rationale: Durian is known as the "king of fruits" for its distinctive taste and aroma.

31. What is a common symptom of overwatering in plants?
A) Leaf wilting
B) Leaf drop
C) Root rot
D) Stunted growth
Answer: C) Root rot
Rationale: Overwatering can lead to root rot, which severely damages plant health.

32. Which method is effective for improving soil fertility in vegetable gardens?
A) Monoculture

B) Crop rotation
C) Tillage
D) Reducing organic matter
Answer: B) Crop rotation
Rationale: Crop rotation helps maintain soil fertility by alternating nutrient demands.

33. What is the primary goal of organic farming?
A) Maximizing chemical inputs
B) Enhancing environmental sustainability
C) Increasing pest reliance
D) Focusing on monoculture
Answer: B) Enhancing environmental sustainability
Rationale: Organic farming emphasizes sustainable practices that protect the environment.

34. Which flower is commonly used for landscaping and has vibrant colors?
A) Sunflower
B) Marigold
C) Dahlia
D) All of the above
Answer: D) All of the above
Rationale: All these flowers are popular for their bright colors and ornamental value.

35. What is the benefit of using native plants in landscaping?
A) High maintenance requirements
B) Attracting local wildlife
C) Limited adaptability
D) Low resilience
Answer: B) Attracting local wildlife
Rationale: Native plants provide habitat and food for local wildlife, supporting biodiversity.

36. Which of the following is a common issue in greenhouse production?
A) Pest invasions
B) Excess sunlight
C) Poor soil quality
D) High elevation
Answer: A) Pest invasions
Rationale: Greenhouses can create ideal conditions for pests, requiring careful management.

37. What is the primary benefit of using seedless varieties in fruit production?
A) Higher pest resistance
B) Easier consumption and processing
C) Longer shelf life
D) Increased water requirements
Answer: B) Easier consumption and processing
Rationale: Seedless fruits are more convenient for consumers and often preferred in markets.

38. Which type of fertilizer is typically slow-release?
A) Urea
B) Ammonium sulfate
C) Compost
D) Triple superphosphate
Answer: C) Compost
Rationale: Compost provides nutrients gradually as it decomposes, improving soil health over time.

39. What is the best method for determining the right time to harvest fruits?
A) Color change and firmness

B) Soil moisture content
C) Leaf size
D) Stem length
Answer: A) Color change and firmness
Rationale: Monitoring color and firmness indicates fruit ripeness and optimal harvest time.

40. Which of the following is essential for successful seed germination?
A) Darkness
B) Moisture
C) High salinity
D) Cold temperatures
Answer: B) Moisture
Rationale: Moisture is critical for activating seed metabolism and initiating germination.

41. What is the main purpose of using row covers in horticulture?
A) To increase soil temperature
B) To reduce sunlight exposure
C) To protect plants from frost and pests
D) To promote weed growth
Answer: C) To protect plants from frost and pests
Rationale: Row covers shield young plants from cold and harmful pests.

42. Which of the following factors is crucial for successful hydroponic systems?
A) Soil quality
B) Nutrient solutions
C) Frequent tillage
D) Natural sunlight only
Answer: B) Nutrient solutions
Rationale: Hydroponic systems rely on nutrient-rich solutions for plant growth instead of soil.

43. What is the primary advantage of grafting in horticulture?
A) Increased genetic diversity
B) Enhanced disease resistance and yield
C) Simplicity in planting
D) Lower maintenance
Answer: B) Enhanced disease resistance and yield
Rationale: Grafting combines the strengths of different plant varieties, improving overall performance.

44. Which fruit is often used to make a popular local beverage called "calamansi juice"?
A) Lemon
B) Calamansi
C) Orange
D) Grapefruit
Answer: B) Calamansi
Rationale: Calamansi is a small citrus fruit used widely in the Philippines for juice and flavoring.

45. What is the purpose of using fungicides in horticulture?
A) To enhance root growth
B) To control fungal diseases
C) To promote flowering
D) To increase fruit size
Answer: B) To control fungal diseases
Rationale: Fungicides are applied to prevent or control fungal infections in plants.

46. Which of the following is a primary source of potassium for plants?
A) Nitrogen fertilizers

B) Wood ash
C) Phosphate rock
D) Compost
Answer: B) Wood ash
Rationale: Wood ash is a good source of potassium, enhancing plant health and fruit quality.

47. What is the primary function of plant hormones such as auxins?
A) Promote photosynthesis
B) Regulate growth and development
C) Increase pest resistance
D) Enhance soil fertility
Answer: B) Regulate growth and development
Rationale: Auxins play a key role in cell elongation, root formation, and other growth processes.

48. Which plant is commonly used for ground cover in tropical gardens?
A) Bermuda grass
B) Fescue
C) Zoysia
D) St. Augustine grass
Answer: A) Bermuda grass
Rationale: Bermuda grass is resilient and ideal for tropical climates, making it a popular choice for ground cover.

49. What is the main objective of using vertical gardening techniques?
A) Maximize space utilization
B) Decrease plant diversity
C) Reduce sunlight exposure
D) Increase soil erosion
Answer: A) Maximize space utilization
Rationale: Vertical gardening optimizes space by growing plants upward, especially in urban settings.

50. Which of the following is a characteristic of tropical fruits?
A) They require cold climates
B) They are typically high in fiber
C) They thrive in warm, humid conditions
D) They have a long shelf life
Answer: C) They thrive in warm, humid conditions
Rationale: Tropical fruits flourish in warm, humid climates typical of the Philippines.

51. What is the main purpose of using stakes for plants?
A) To enhance pest attraction
B) To provide support for growth
C) To increase soil temperature
D) To decrease water availability
Answer: B) To provide support for growth
Rationale: Stakes help support plants as they grow, preventing damage from wind and heavy fruits.

52. Which type of flower is best for attracting pollinators?
A) Simple, single blooms
B) Hybrid flowers with complex structures
C) Dull-colored flowers
D) Fragrant flowers only
Answer: A) Simple, single blooms
Rationale: Simple blooms are often more accessible to pollinators like bees and butterflies.

53. What is a key benefit of organic mulching in gardens?

A) Increased evaporation
B) Nutrient release as it decomposes
C) Soil compaction
D) Decreased microbial activity
Answer: B) Nutrient release as it decomposes
Rationale: Organic mulch improves soil fertility by adding nutrients as it breaks down.

54. Which plant part is primarily responsible for photosynthesis?

A) Roots
B) Stems
C) Leaves
D) Flowers
Answer: C) Leaves
Rationale: Leaves contain chlorophyll, which captures sunlight for photosynthesis.

55. What is the main purpose of using a trellis in gardening?

A) To reduce plant height
B) To provide support for climbing plants
C) To increase shade
D) To prevent soil erosion
Answer: B) To provide support for climbing plants
Rationale: Trellises support climbing plants, maximizing space and improving air circulation.

56. Which of the following is a common method for preserving fruits?

A) Fertilization
B) Canning
C) Watering
D) Composting
Answer: B) Canning
Rationale: Canning preserves fruits by sealing them in airtight containers to prevent spoilage.

57. What is a common characteristic of tropical vegetables?

A) Low water requirements
B) High temperature tolerance
C) Cold climate preference
D) Short growing seasons
Answer: B) High temperature tolerance
Rationale: Tropical vegetables thrive in warm temperatures typical of the Philippine climate.

58. Which of the following is a common sign of pest damage on leaves?

A) Leaf wilting
B) Discoloration or holes
C) Excessive leaf growth
D) Root expansion
Answer: B) Discoloration or holes
Rationale: Pests often create visible damage such as holes or discoloration on leaves.

59. What is the main goal of plant breeding?

A) To decrease crop diversity

B) To develop plants with desirable traits
C) To increase chemical usage
D) To simplify pest management
Answer: B) To develop plants with desirable traits
Rationale: Plant breeding aims to enhance traits like yield, disease resistance, and flavor.

60. Which of the following fruits is known for its high antioxidant content?
A) Watermelon
B) Blueberry
C) Banana
D) Coconut
Answer: B) Blueberry
Rationale: Blueberries are particularly high in antioxidants, contributing to health benefits.

61. What is the primary role of bees in horticulture?
A) Planting seeds
B) Pollination
C) Weeding
D) Watering plants
Answer: B) Pollination
Rationale: Bees are crucial for pollinating many fruit and vegetable crops, enhancing yields.

62. Which of the following is a common symptom of over-fertilization?
A) Leaf curl and burn
B) Healthy growth
C) Improved flowering
D) Increased pest resistance
Answer: A) Leaf curl and burn
Rationale: Over-fertilization can lead to nutrient burn, resulting in leaf damage.

63. What is the main advantage of companion planting?
A) Increased pest problems
B) Improved growth and pest control
C) Reduced biodiversity
D) Higher water requirements
Answer: B) Improved growth and pest control
Rationale: Companion planting enhances plant growth and can naturally deter pests.

64. Which type of lighting is most effective for indoor plant growth?
A) Incandescent bulbs
B) LED grow lights
C) Fluorescent lights
D) Natural sunlight only
Answer: B) LED grow lights
Rationale: LED grow lights provide the spectrum needed for optimal plant growth and are energy-efficient.

65. What is the primary benefit of using raised beds in gardening?
A) Increased soil compaction
B) Improved drainage and soil quality
C) Decreased plant height
D) Reduced pest access
Answer: B) Improved drainage and soil quality
Rationale: Raised beds promote better drainage and allow for improved soil management.

66. What is the primary function of plant roots?

A) Photosynthesis
B) Nutrient absorption and anchorage
C) Flowering
D) Fruit production

Answer: B) Nutrient absorption and anchorage

Rationale: Roots anchor plants and absorb water and nutrients from the soil.

67. Which of the following is a common method for preventing soil erosion?

A) Tilling
B) Planting cover crops
C) Overgrazing
D) Soil compaction

Answer: B) Planting cover crops

Rationale: Cover crops protect the soil surface and reduce erosion during off-seasons.

68. What is the primary advantage of drip irrigation over traditional irrigation methods?

A) Higher water waste
B) Targeted water delivery to roots
C) Greater labor requirements
D) Reduced efficiency

Answer: B) Targeted water delivery to roots

Rationale: Drip irrigation delivers water directly to the plant roots, minimizing evaporation and runoff.

69. Which type of vegetable is best suited for growing in shaded areas?

A) Tomatoes
B) Lettuce
C) Peppers
D) Corn

Answer: B) Lettuce

Rationale: Lettuce grows well in cooler, shaded conditions, unlike many other vegetables.

70. What is a common practice to enhance soil fertility in organic farming?

A) Using synthetic fertilizers
B) Applying chemical pesticides
C) Incorporating green manure
D) Reducing crop diversity

Answer: C) Incorporating green manure

Rationale: Green manure crops are grown to improve soil fertility and structure when decomposed.

71. Which of the following is a key characteristic of drought-resistant plants?

A) High water requirements
B) Deep root systems
C) Low sunlight tolerance
D) High nutrient needs

Answer: B) Deep root systems

Rationale: Drought-resistant plants typically develop deep roots to access moisture in the soil.

72. What is the primary role of leaf cuttings in plant propagation?

A) Enhancing soil structure

B) Reducing water loss
C) Initiating new plant growth
D) Increasing pest resistance
Answer: C) Initiating new plant growth
Rationale: Leaf cuttings can develop roots and grow into new plants through vegetative propagation.

73. Which of the following fruits is considered a superfood due to its health benefits?
A) Apple
B) Avocado
C) Mango
D) Banana
Answer: B) Avocado
Rationale: Avocados are rich in healthy fats, vitamins, and minerals, making them a popular superfood.

74. What is the purpose of using insect netting in horticulture?
A) To increase sunlight exposure
B) To prevent pest access
C) To enhance soil drainage
D) To improve air circulation
Answer: B) To prevent pest access
Rationale: Insect netting protects plants from pests while allowing air and light to pass through.

75. Which of the following is a method of preserving the quality of harvested fruits?
A) Excessive watering
B) Proper storage conditions
C) Ignoring temperature controls
D) Overexposure to sunlight
Answer: B) Proper storage conditions
Rationale: Proper storage conditions, including temperature and humidity control, maintain fruit quality.

76. What is the primary goal of using plant markers in a garden?
A) To confuse gardeners
B) To identify plant varieties
C) To increase weed growth
D) To reduce sunlight
Answer: B) To identify plant varieties
Rationale: Plant markers help gardeners keep track of different plant varieties and their care needs.

77. Which of the following is a benefit of organic gardening?
A) Increased pesticide usage
B) Enhanced soil health and biodiversity
C) Higher dependency on synthetic fertilizers
D) Lower crop yields
Answer: B) Enhanced soil health and biodiversity
Rationale: Organic gardening promotes sustainable practices that benefit soil and ecosystem health.

78. What is the primary advantage of using mulch in gardens?
A) Decreased soil temperature
B) Weed suppression and moisture retention
C) Increased soil erosion
D) Reduced soil fertility
Answer: B) Weed suppression and moisture retention
Rationale: Mulch helps retain soil moisture and suppress weeds, benefiting plant growth.

79. Which vegetable is known for its ability to grow in low-nutrient soils?

A) Carrot
B) Spinach
C) Swiss chard
D) Kale
Answer: B) Spinach
Rationale: Spinach can thrive in nutrient-poor soils, making it a resilient choice for gardeners.

80. What is the purpose of using a pH meter in soil management?
A) To measure soil temperature
B) To determine soil moisture levels
C) To assess soil acidity or alkalinity
D) To evaluate soil texture
Answer: C) To assess soil acidity or alkalinity
Rationale: A pH meter helps determine soil acidity or alkalinity, which influences plant growth.

81. What is the main purpose of using companion planting?
A) To increase monoculture
B) To enhance growth and deter pests
C) To reduce crop yields
D) To simplify watering needs
Answer: B) To enhance growth and deter pests
Rationale: Companion planting encourages plant cooperation for better growth and natural pest control.

82. Which type of lighting is most effective for seedlings?
A) Incandescent bulbs
B) LED grow lights
C) Natural sunlight only
D) Fluorescent lights
Answer: B) LED grow lights
Rationale: LED grow lights provide the necessary light spectrum for optimal seedling growth.

83. What is a common sign that a plant is not receiving enough water?
A) Leaf wilting and drooping
B) Excessive leaf growth
C) Bright green foliage
D) Increased flowering
Answer: A) Leaf wilting and drooping
Rationale: Insufficient water leads to wilting and drooping leaves as plants struggle to maintain turgor pressure.

84. What is the purpose of a compost bin?
A) To store weeds
B) To facilitate decomposition of organic waste
C) To increase soil salinity
D) To create air pollution
Answer: B) To facilitate decomposition of organic waste
Rationale: A compost bin collects organic waste and aids in its decomposition for use as nutrient-rich soil amendment.

85. Which of the following is a benefit of using organic fertilizers?
A) Quick nutrient release
B) Improved soil structure and health
C) Increased reliance on synthetic chemicals

D) Higher water runoff

Answer: B) Improved soil structure and health

Rationale: Organic fertilizers enhance soil structure and promote a healthy ecosystem over time.

86. What is the main purpose of soil testing?

A) To identify pest populations

B) To determine soil fertility and nutrient levels

C) To measure plant height

D) To assess water retention

Answer: B) To determine soil fertility and nutrient levels

Rationale: Soil testing assesses nutrient levels and informs fertilization strategies for optimal plant growth.

87. Which of the following is a characteristic of perennial plants?

A) They complete their life cycle in one season

B) They can live for several years

C) They require constant replanting

D) They only produce flowers in spring

Answer: B) They can live for several years

Rationale: Perennial plants can grow and produce for multiple seasons without replanting.

88. What is the primary advantage of using companion planting techniques?

A) Higher pest populations

B) Improved growth and pest control

C) Increased reliance on herbicides

D) Reduced crop yields

Answer: B) Improved growth and pest control

Rationale: Companion planting can enhance growth and deter pests through beneficial interactions between plants.

89. Which vegetable is best known for its high water content?

A) Carrot

B) Tomato

C) Potato

D) Cucumber

Answer: D) Cucumber

Rationale: Cucumbers have a high water content, making them refreshing and hydrating.

90. What is the primary benefit of using a greenhouse?

A) To limit plant growth

B) To control environmental conditions for optimal growth

C) To reduce pest populations entirely

D) To decrease sunlight exposure

Answer: B) To control environmental conditions for optimal growth

Rationale: Greenhouses provide controlled environments, promoting healthy plant growth year-round.

91. What is the primary function of nitrogen in fertilizers?

A) Promoting root development

B) Enhancing flowering and fruiting

C) Stimulating leafy growth

D) Improving soil texture
Answer: C) Stimulating leafy growth
Rationale: Nitrogen is essential for leaf development and overall plant vigor.

92. Which of the following is an example of a legume?
A) Spinach
B) Carrot
C) Bean
D) Cabbage
Answer: C) Bean
Rationale: Beans are legumes, known for their ability to fix nitrogen in the soil.

93. What is the main purpose of using cover crops?
A) To increase pest populations
B) To improve soil health and prevent erosion
C) To reduce plant diversity
D) To decrease moisture retention
Answer: B) To improve soil health and prevent erosion
Rationale: Cover crops enhance soil quality and protect against erosion during fallow periods.

94. Which type of plant is best for attracting butterflies?
A) Native flowering plants
B) Dull-colored plants
C) Non-flowering plants
D) Plants with a strong odor
Answer: A) Native flowering plants
Rationale: Native flowering plants provide essential nectar sources for butterflies.

95. What is the primary benefit of crop rotation?
A) Increased pest infestations
B) Improved soil fertility and health
C) Reduced crop diversity
D) Lower yields
Answer: B) Improved soil fertility and health
Rationale: Crop rotation helps manage soil nutrients and prevent disease buildup.

96. Which of the following is a common indicator of nutrient deficiency in plants?
A) Healthy, green leaves
B) Stunted growth and yellowing leaves
C) Abundant flowering
D) Increased pest resistance
Answer: B) Stunted growth and yellowing leaves
Rationale: Nutrient deficiencies often manifest as yellowing leaves and poor growth.

97. What is the primary advantage of using heirloom seeds?
A) Higher susceptibility to disease
B) Greater flavor and diversity
C) Limited availability

D) Lower germination rates

Answer: B) Greater flavor and diversity

Rationale: Heirloom seeds offer unique flavors and characteristics, preserving biodiversity in crops.

98. Which of the following practices is key for maintaining organic garden health?

A) Using synthetic fertilizers

B) Promoting biodiversity

C) Monoculture planting

D) Heavy pesticide use

Answer: B) Promoting biodiversity

Rationale: Encouraging biodiversity supports ecosystem health and resilience in organic gardening.

99. What is the main purpose of using a soil amendment?

A) To change soil structure and fertility

B) To limit plant growth

C) To increase pest attraction

D) To reduce water retention

Answer: A) To change soil structure and fertility

Rationale: Soil amendments improve soil quality by enhancing structure, drainage, and nutrient content.

100. What is the primary role of chlorophyll in plants?

A) Protecting against pests

B) Storing nutrients

C) Absorbing light for photosynthesis

D) Enhancing root growth

Answer: C) Absorbing light for photosynthesis

Rationale: Chlorophyll captures sunlight, enabling photosynthesis and energy production in plants.

C. Animal science

1. **What is the primary purpose of animal husbandry?**

   A) To increase wild animal populations
   B) To manage and breed domesticated animals for human use
   C) To create animal habitats
   D) To preserve endangered species
   Answer: B) To manage and breed domesticated animals for human use
   Rationale: Animal husbandry focuses on the breeding and care of livestock for food, labor, and other products.

2. **Which of the following is a major livestock species raised in the Philippines?**

   A) Elephant
   B) Pig
   C) Zebra
   D) Kangaroo
   Answer: B) Pig
   Rationale: Pigs are among the most commonly raised livestock in the Philippines, contributing significantly to the agricultural economy.

3. **What is the main dietary requirement for ruminant animals?**

   A) High protein
   B) High carbohydrates
   C) Fiber
   D) Low fat
   Answer: C) Fiber
   Rationale: Ruminants like cattle require high fiber in their diet for proper digestion and nutrient absorption.

4. **What is the primary function of vaccines in animal health management?**

   A) To enhance growth
   B) To prevent diseases
   C) To improve reproduction
   D) To increase feed efficiency
   Answer: B) To prevent diseases
   Rationale: Vaccines are crucial for preventing infectious diseases in livestock.

5. **Which breed of cattle is commonly raised in the Philippines for dairy production?**

   A) Brahman
   B) Jersey
   C) Angus

D) Holstein

Answer: D) Holstein

Rationale: Holstein is widely recognized for its high milk production capacity.

6. What is the most common method of poultry production in the Philippines?

A) Free-range
B) Intensive system
C) Organic system
D) Pasture-based

Answer: B) Intensive system

Rationale: Intensive poultry systems are prevalent due to their efficiency and ability to meet high demand.

7. Which of the following is a common parasite that affects livestock?

A) E. coli
B) Coccidia
C) Salmonella
D) Listeria

Answer: B) Coccidia

Rationale: Coccidia are protozoan parasites that can cause significant health issues in livestock.

8. What is the primary advantage of rotational grazing?

A) Increased soil compaction
B) Enhanced pasture recovery
C) Higher feed costs
D) Limited biodiversity

Answer: B) Enhanced pasture recovery

Rationale: Rotational grazing allows pastures to recover by alternating grazing areas.

9. Which nutrient is essential for building muscle in livestock?

A) Carbohydrates
B) Fiber
C) Protein
D) Fats

Answer: C) Protein

Rationale: Protein is crucial for muscle development and overall growth in livestock.

10. What is the main cause of heat stress in livestock?

A) Low feed intake
B) High humidity and temperature
C) Insufficient water
D) Lack of shelter

Answer: B) High humidity and temperature

Rationale: Heat stress occurs when animals cannot regulate their body temperature effectively due to high heat and humidity.

11. Which of the following practices is important for maintaining animal welfare?

A) Overcrowding
B) Adequate space and shelter
C) Ignoring veterinary care
D) Low-quality feed

Answer: B) Adequate space and shelter

Rationale: Providing adequate space and shelter is essential for the health and well-being of animals.

12. What is the primary purpose of feed additives in animal diets?

A) To reduce feed costs
B) To enhance growth and health
C) To decrease feed intake
D) To prolong shelf life
Answer: B) To enhance growth and health
Rationale: Feed additives are used to improve the nutritional value and health of livestock.

13. **Which animal is commonly referred to as a "bovine"?**
A) Sheep
B) Goat
C) Cow
D) Pig
Answer: C) Cow
Rationale: Bovine refers specifically to the species within the cattle family.

14. What is the primary product derived from goats in the Philippines?
A) Wool
B) Milk
C) Eggs
D) Leather
Answer: B) Milk
Rationale: Goats are primarily raised for milk production in many areas, including the Philippines.

15. What is the term for the process of giving birth in pigs?
A) Calving
B) Kidding
C) Farrowing
D) Lambing
Answer: C) Farrowing
Rationale: Farrowing refers specifically to the birthing process in pigs.

16. Which of the following is a common disease affecting poultry?
A) Foot and Mouth Disease
B) Avian Influenza
C) Bovine Tuberculosis
D) Rift Valley Fever
Answer: B) Avian Influenza
Rationale: Avian Influenza is a significant concern in poultry health management.

17. What is the primary source of energy in livestock diets?
A) Proteins
B) Fats
C) Carbohydrates
D) Vitamins
Answer: C) Carbohydrates
Rationale: Carbohydrates are the primary energy source for livestock.

18. Which breed of chicken is commonly raised for meat production?
A) Leghorn

B) Rhode Island Red
C) Broilers
D) Bantam
Answer: C) Broilers
Rationale: Broilers are specifically bred for rapid growth and meat production.

19. What is the primary benefit of deworming livestock?
A) Increased feed intake
B) Improved growth and health
C) Reduced breeding rates
D) Higher mortality rates
Answer: B) Improved growth and health
Rationale: Deworming reduces parasite load, leading to better health and growth in livestock.

20. Which of the following is a common breed of sheep raised for wool in the Philippines?
A) Suffolk
B) Merino
C) Dorset
D) Boer
Answer: B) Merino
Rationale: Merino sheep are well-known for their high-quality wool production.

21. What is the role of the rumen in ruminant animals?
A) Digestion of fats
B) Fermentation of fibrous feeds
C) Absorption of nutrients
D) Storage of water
Answer: B) Fermentation of fibrous feeds
Rationale: The rumen is responsible for fermenting fibrous plant materials, aiding in digestion.

22. What is the term for the selection of animals for breeding based on desirable traits?
A) Genetic drift
B) Selective breeding
C) Inbreeding
D) Crossbreeding
Answer: B) Selective breeding
Rationale: Selective breeding aims to enhance specific traits in livestock populations.

23. What is the primary advantage of artificial insemination in livestock?
A) Increased genetic diversity
B) Lower reproductive rates
C) Higher animal mortality
D) Reduced genetic variation
Answer: A) Increased genetic diversity
Rationale: Artificial insemination allows for the introduction of superior genetics from various breeding stock.

24. Which nutrient is essential for the development of strong bones in animals?
A) Protein
B) Calcium
C) Iron
D) Fiber
Answer: B) Calcium
Rationale: Calcium is crucial for bone development and health in livestock.

25. What is the main role of the liver in livestock?

A) Digestion of cellulose
B) Production of bile and detoxification
C) Absorption of water
D) Storage of fat
Answer: B) Production of bile and detoxification
Rationale: The liver processes nutrients and detoxifies harmful substances in the body.

26. **Which of the following is a method for improving animal breeding?**
A) Inbreeding
B) Crossbreeding
C) Random breeding
D) Cloning
Answer: B) Crossbreeding
Rationale: Crossbreeding combines the strengths of two different breeds, improving genetic traits.

27. What is the main purpose of using probiotics in livestock feed?
A) To enhance flavor
B) To improve gut health
C) To increase body weight
D) To lower feed costs
Answer: B) To improve gut health
Rationale: Probiotics promote a healthy digestive system and improve nutrient absorption.

28. Which animal is known for its ability to produce milk rich in butterfat?
A) Jersey cow
B) Angus cow
C) Holstein cow
D) Beefmaster
Answer: A) Jersey cow
Rationale: Jersey cows are known for their high butterfat content in milk.

29. What is the primary purpose of feed formulation?
A) To minimize costs
B) To meet the nutritional needs of animals
C) To reduce feed intake
D) To improve growth rates
Answer: B) To meet the nutritional needs of animals
Rationale: Proper feed formulation ensures that livestock receive all necessary nutrients for health and productivity.

30. What is the most common method of castrating male pigs?
A) Surgical castration
B) Chemical castration
C) Immunocastration
D) Hormonal therapy
Answer: A) Surgical castration
Rationale: Surgical castration is the traditional and most common method for preventing reproduction in male pigs.

31. Which of the following is a major factor affecting animal production in tropical climates?

A) Cold temperatures
B) High humidity and heat
C) Low rainfall
D) Snowfall
Answer: B) High humidity and heat
Rationale: High humidity and heat can stress livestock and affect their health and productivity.

32. What is the primary benefit of providing adequate water to livestock?

A) Increased feed conversion
B) Improved animal welfare and performance
C) Reduced feed costs
D) Higher reproductive rates
Answer: B) Improved animal welfare and performance
Rationale: Access to clean water is essential for overall health and productivity in livestock.

33. Which breed of goat is primarily raised for meat in the Philippines?

A) Saanen
B) Boer
C) Nubian
D) Alpine
Answer: B) Boer
Rationale: Boer goats are specifically bred for their meat production capabilities.

34. What is the primary purpose of using bedding in animal housing?

A) To provide nutrition
B) To absorb moisture and provide comfort
C) To prevent heat stress
D) To enhance growth rates
Answer: B) To absorb moisture and provide comfort
Rationale: Bedding helps maintain a dry and comfortable environment for livestock.

35. Which vitamin is crucial for blood clotting in animals?

A) Vitamin A
B) Vitamin C
C) Vitamin K
D) Vitamin D
Answer: C) Vitamin K
Rationale: Vitamin K is essential for the synthesis of proteins involved in blood clotting.

36. What is the primary role of the pancreas in livestock?

A) Producing bile
B) Digesting fiber
C) Producing digestive enzymes and hormones
D) Storing fat
Answer: C) Producing digestive enzymes and hormones
Rationale: The pancreas produces enzymes necessary for digestion and hormones that regulate metabolism.

37. Which of the following practices helps prevent the spread of animal diseases?

A) Biosecurity measures
B) Overcrowding
C) Feeding low-quality feed
D) Ignoring sanitation
Answer: A) Biosecurity measures
Rationale: Biosecurity measures are critical for preventing disease outbreaks in livestock.

38. What is the primary cause of milk fever in dairy cows?
A) Excessive protein intake
B) Calcium deficiency
C) Dehydration
D) Vitamin A deficiency
Answer: B) Calcium deficiency
Rationale: Milk fever occurs due to a sudden drop in calcium levels, especially around calving.

39. What is the term for the process of feeding animals high-energy feeds before slaughter?
A) Fattening
B) Breeding
C) Weaning
D) Grazing
Answer: A) Fattening
Rationale: Fattening involves providing energy-dense diets to animals to maximize weight gain before slaughter.

40. Which of the following is an important biosecurity measure for poultry farms?
A) Allowing free access to wild birds
B) Regular disinfection of equipment and housing
C) Overcrowding chickens
D) Ignoring vaccination schedules
Answer: B) Regular disinfection of equipment and housing
Rationale: Disinfection helps prevent disease spread in poultry operations.

41. What is the main benefit of feeding livestock a balanced diet?
A) Increased risk of disease
B) Higher feed costs
C) Improved growth and productivity
D) Reduced water intake
Answer: C) Improved growth and productivity
Rationale: A balanced diet ensures livestock receive necessary nutrients for optimal growth and production.

42. Which animal is often referred to as a "porcine"?
A) Cow
B) Goat
C) Pig
D) Sheep
Answer: C) Pig
Rationale: "Porcine" specifically refers to pigs and their relatives.

43. What is the term for the natural behavior of animals to graze and forage?

A) Browsing
B) Roaming
C) Pasturing
D) Feeding
Answer: C) Pasturing
Rationale: Pasturing describes the behavior of animals grazing in a designated area.

44. Which breed of sheep is known for its high meat production?

A) Merino
B) Hampshire
C) Suffolk
D) Dorper
Answer: D) Dorper
Rationale: Dorper sheep are known for their efficient meat production capabilities.

45. What is the primary function of a livestock feedlot?

A) To breed animals
B) To provide grazing land
C) To fatten animals for market
D) To produce milk
Answer: C) To fatten animals for market
Rationale: Feedlots are designed to maximize weight gain in animals before they are sold for meat.

46. Which disease is commonly associated with overfeeding grain to livestock?

A) Bloat
B) Milk fever
C) Foot and Mouth Disease
D) Avian Influenza
Answer: A) Bloat
Rationale: Overfeeding grain can cause bloat, a serious digestive issue in ruminants.

47. What is the primary use of the term "culling" in animal production?

A) Breeding animals
B) Removing unfit animals from the herd
C) Feeding practices
D) Fattening for market
Answer: B) Removing unfit animals from the herd
Rationale: Culling is the process of removing animals that do not meet production standards or health criteria.

48. Which vitamin is essential for vision in animals?

A) Vitamin A
B) Vitamin D
C) Vitamin E
D) Vitamin K
Answer: A) Vitamin A
Rationale: Vitamin A is crucial for maintaining good vision and overall eye health in animals.

49. What is the main advantage of using artificial insemination in cattle?

A) Reduced genetic diversity
B) Improved herd health
C) Access to superior genetics
D) Increased costs
Answer: C) Access to superior genetics
Rationale: Artificial insemination allows farmers to utilize genetics from high-quality bulls that are geographically distant.

50. What is the primary source of protein in animal feed?
A) Grains
B) Legumes
C) Vegetables
D) Fruits
Answer: B) Legumes
Rationale: Legumes are rich in protein and are commonly used in animal feed formulations.

51. Which of the following is a sign of good animal welfare?
A) Aggressive behavior
B) Healthy body condition and active behavior
C) Reduced feed intake
D) Excessive vocalization
Answer: B) Healthy body condition and active behavior
Rationale: Healthy and active animals are indicators of good welfare.

52. What is the role of enzymes in livestock digestion?
A) To provide energy
B) To break down complex nutrients
C) To absorb vitamins
D) To store fat
Answer: B) To break down complex nutrients
Rationale: Enzymes are essential for the breakdown of carbohydrates, proteins, and fats in the digestive process.

53. Which breed of cattle is known for its ability to thrive in tropical climates?
A) Holstein
B) Brahman
C) Hereford
D) Angus
Answer: B) Brahman
Rationale: Brahman cattle are well-adapted to heat and humidity, making them suitable for tropical regions.

54. What is the term for the process of raising animals in a controlled environment?
A) Pastoral farming
B) Intensive farming
C) Free-range farming
D) Organic farming
Answer: B) Intensive farming
Rationale: Intensive farming involves raising animals in confined spaces with controlled conditions.

55. Which mineral is vital for preventing anemia in livestock?

A) Calcium
B) Iron
C) Zinc
D) Copper
Answer: B) Iron
Rationale: Iron is crucial for the production of hemoglobin in red blood cells, preventing anemia.

56. What is the main role of a veterinarian in livestock management?

A) Marketing animals
B) Breeding animals
C) Disease prevention and treatment
D) Feeding animals
Answer: C) Disease prevention and treatment
Rationale: Veterinarians play a critical role in ensuring the health and welfare of livestock through medical care.

57. Which type of feed is typically high in energy?

A) Silage
B) Hay
C) Grains
D) Forages
Answer: C) Grains
Rationale: Grains are high in carbohydrates and energy, making them a common choice in livestock diets.

58. What is the primary purpose of using a cattle squeeze chute?

A) To enhance feeding
B) To confine animals for treatment or examination
C) To increase weight gain
D) To improve breeding
Answer: B) To confine animals for treatment or examination
Rationale: A squeeze chute safely restrains cattle for medical procedures or examinations.

59. Which of the following is a common poultry disease that affects respiratory health?

A) Newcastle disease
B) Bovine spongiform encephalopathy
C) Avian leukosis
D) Foot and mouth disease
Answer: A) Newcastle disease
Rationale: Newcastle disease is a highly contagious viral infection affecting poultry's respiratory system.

60. What is the main advantage of pasture-based systems for raising livestock?

A) Higher feed costs
B) Natural foraging behavior
C) Increased disease risk

D) Limited space

Answer: B) Natural foraging behavior

Rationale: Pasture-based systems allow animals to express natural behaviors and graze on forage.

61. Which livestock management practice helps reduce the risk of disease transmission?

A) Overcrowding

B) Regular cleaning and sanitation

C) Ignoring vaccination

D) Mixed-species grazing

Answer: B) Regular cleaning and sanitation

Rationale: Maintaining cleanliness and sanitation is vital for preventing disease outbreaks.

62. What is the main component of a balanced diet for livestock?

A) Water

B) Fiber

C) Vitamins

D) All of the above

Answer: D) All of the above

Rationale: A balanced diet includes water, fiber, vitamins, and other nutrients for optimal health.

63. Which breed of chicken is primarily raised for egg production?

A) Plymouth Rock

B) Cornish

C) Leghorn

D) Silkie

Answer: C) Leghorn

Rationale: Leghorn chickens are renowned for their high egg-laying capacity.

64. What is the primary risk associated with feeding livestock moldy feed?

A) Improved digestion

B) Toxicity and health problems

C) Increased weight gain

D) Enhanced flavor

Answer: B) Toxicity and health problems

Rationale: Moldy feed can contain mycotoxins, which are harmful to livestock health.

65. What is the term for the age at which a female animal is first bred?

A) Weaning age

B) Maturity age

C) Breeding age

D) Fattening age

Answer: C) Breeding age

Rationale: Breeding age refers to the appropriate age for females to be bred for the first time.

66. Which factor is most critical for ensuring high-quality milk production?

A) Genetic selection

B) Stress levels

C) Feeding practices

D) All of the above

Answer: D) All of the above

Rationale: Genetics, stress management, and proper feeding all play crucial roles in milk quality.

67. What is the purpose of a livestock nutritionist?

A) To market animals
B) To breed animals
C) To formulate diets that meet animal needs
D) To treat diseases
Answer: C) To formulate diets that meet animal needs
Rationale: Livestock nutritionists design feeding programs to optimize animal health and productivity.

68. Which of the following is a common method of identifying livestock?

A) Branding
B) Painting
C) Feeding
D) Fencing
Answer: A) Branding
Rationale: Branding is a traditional method for identifying and tracking livestock ownership.

69. What is the role of a farrier in animal husbandry?

A) Breeding animals
B) Managing feed
C) Caring for hoof health in horses
D) Vaccinating livestock
Answer: C) Caring for hoof health in horses
Rationale: Farriers specialize in trimming and shoeing horses to maintain hoof health.

70. Which type of feed is known for being high in fiber?

A) Grains
B) Silage
C) Forage
D) Concentrates
Answer: C) Forage
Rationale: Forages, like hay and pasture, are high in fiber, essential for ruminant digestion.

71. What is the term for the transition period before and after calving?

A) Lactation
B) Gestation
C) Dry period
D) Transition period
Answer: D) Transition period
Rationale: The transition period encompasses the time before and after calving, crucial for the cow's health.

72. Which livestock species is most commonly used in integrated farming systems in the Philippines?

A) Cattle
B) Goats
C) Pigs
D) Sheep
Answer: C) Pigs
Rationale: Pigs are often integrated into farming systems for their rapid growth and manure production.

73. What is the primary health benefit of regular vaccinations in livestock?

A) Increased weight gain
B) Reduced feed costs
C) Disease prevention

D) Higher reproductive rates

Answer: C) Disease prevention

Rationale: Vaccinations help protect livestock from infectious diseases.

74. Which mineral is important for the prevention of milk fever in dairy cows?

A) Sodium

B) Magnesium

C) Potassium

D) Calcium

Answer: D) Calcium

Rationale: Adequate calcium levels are vital to prevent milk fever during lactation.

75. What is the term for the method of raising animals without the use of synthetic chemicals?

A) Organic farming

B) Intensive farming

C) Conventional farming

D) Pastoral farming

Answer: A) Organic farming

Rationale: Organic farming prohibits the use of synthetic chemicals, focusing on natural practices.

76. Which animal is primarily used for fiber production?

A) Goat (Angora)

B) Cow

C) Sheep (Merino)

D) Both A and C

Answer: D) Both A and C

Rationale: Both Angora goats and Merino sheep are known for their fiber production.

77. What is the role of antioxidants in animal feed?

A) To enhance growth

B) To prevent oxidative stress

C) To increase fat content

D) To improve palatability

Answer: B) To prevent oxidative stress

Rationale: Antioxidants help protect cells from damage caused by free radicals, improving overall health.

78. What is the main reason for providing shelter to livestock?

A) To increase feed intake

B) To enhance comfort and protection from the elements

C) To promote social interactions

D) To reduce stress from handling

Answer: B) To enhance comfort and protection from the elements

Rationale: Shelter provides livestock with a safe environment, protecting them from adverse weather conditions.

79. Which poultry breed is known for its rapid growth and meat production?

A) Rhode Island Red

B) Leghorn

C) Cornish

D) Silkie

Answer: C) Cornish

Rationale: Cornish chickens are bred specifically for their fast growth and meat yield.

80. What is the primary purpose of rotational grazing?

A) To reduce animal weight

B) To improve pasture health and productivity

C) To increase feed costs

D) To promote overcrowding

Answer: B) To improve pasture health and productivity

Rationale: Rotational grazing allows pasture recovery, enhancing its quality and sustainability.

81. Which type of animal is often referred to as "ruminant"?

A) Swine

B) Cattle

C) Poultry

D) Equine

Answer: B) Cattle

Rationale: Ruminants, such as cattle, have a specialized digestive system that includes a rumen for breaking down fibrous feed.

82. What is the key factor in determining the quality of hay?

A) Color and moisture content

B) Length of storage

C) Type of grass used

D) Region of production

Answer: A) Color and moisture content

Rationale: The quality of hay is largely determined by its color (green is preferable) and moisture content to prevent spoilage.

83. Which disease is characterized by swollen joints and lameness in livestock?

A) Mastitis

B) Foot rot

C) Brucellosis

D) Coccidiosis

Answer: B) Foot rot

Rationale: Foot rot causes inflammation and swelling in the feet, leading to lameness in affected animals.

84. What is the role of probiotics in animal health?

A) Increase feed intake

B) Enhance nutrient absorption and gut health

C) Prevent respiratory diseases

D) Promote weight gain

Answer: B) Enhance nutrient absorption and gut health

Rationale: Probiotics help maintain a balanced gut microbiome, improving digestion and nutrient uptake.

85. What is the most common method of deworming livestock?

A) Feeding hay

B) Chemical anthelmintics
C) Increasing water intake
D) Organic herbs
Answer: B) Chemical anthelmintics
Rationale: Chemical anthelmintics are widely used for effectively controlling internal parasites in livestock.

86. Which animal is known for producing the finest wool?
A) Rambouillet sheep
B) Hampshire sheep
C) Suffolk sheep
D) Dorper sheep
Answer: A) Rambouillet sheep
Rationale: Rambouillet sheep are highly regarded for their soft, fine wool quality.

87. What is the main factor in achieving high reproductive performance in livestock?
A) Proper nutrition
B) Genetics
C) Health management
D) All of the above
Answer: D) All of the above
Rationale: Nutrition, genetics, and health are all critical for optimizing reproductive performance in livestock.

88. Which feed is primarily used for young, growing animals?
A) High-fiber forage
B) Concentrates
C) Silage
D) Mature pasture
Answer: B) Concentrates
Rationale: Concentrates are energy-dense feeds suitable for the growth and development of young animals.

89. What is the primary cause of ketosis in dairy cows?
A) High protein intake
B) Energy deficit
C) Excessive body weight
D) Lack of minerals
Answer: B) Energy deficit
Rationale: Ketosis is primarily caused by an energy deficit, often occurring in high-producing dairy cows.

90. Which breed of cattle is known for its high milk production?
A) Angus
B) Jersey
C) Hereford
D) Charolais
Answer: B) Jersey
Rationale: Jersey cows are well-known for their high milk yield and butterfat content.

91. What is the primary goal of animal welfare programs?
A) Increase production efficiency

B) Reduce labor costs
C) Ensure humane treatment of animals
D) Maximize profit margins
Answer: C) Ensure humane treatment of animals
Rationale: Animal welfare programs aim to protect the rights and well-being of animals in production systems.

92. What is the role of a livestock handler?
A) Breeding animals
B) Managing nutrition
C) Handling and caring for animals
D) Marketing livestock
Answer: C) Handling and caring for animals
Rationale: Livestock handlers are responsible for the daily care and management of animals.

93. Which feed component is most important for growth in young animals?
A) Carbohydrates
B) Fats
C) Protein
D) Fiber
Answer: C) Protein
Rationale: Protein is essential for growth, tissue repair, and overall development in young animals.

94. What is the primary cause of mastitis in dairy cows?
A) Poor nutrition
B) Bacterial infection
C) Viral infection
D) Parasitic infection
Answer: B) Bacterial infection
Rationale: Mastitis is most commonly caused by bacterial infections in the udder.

95. Which animal is primarily used for land reclamation and weed control?
A) Horses
B) Sheep
C) Goats
D) Cattle
Answer: C) Goats
Rationale: Goats are effective at browsing and controlling weeds, making them useful for land reclamation.

96. What is the term for the period of time an animal is not producing milk?
A) Lactation
B) Dry period
C) Gestation
D) Weaning
Answer: B) Dry period
Rationale: The dry period is the time between lactations when a cow is not producing milk.

97. Which animal is known for its ability to thrive on poor-quality forage?
A) Horse
B) Goat
C) Cow

D) Sheep

Answer: B) Goat

Rationale: Goats are browsers and can effectively utilize poor-quality forages that other livestock may not.

98. What is the main health benefit of proper hoof care in livestock?

A) Increased feed intake
B) Improved weight gain
C) Prevention of lameness
D) Enhanced reproduction

Answer: C) Prevention of lameness

Rationale: Regular hoof care is essential to prevent lameness and ensure mobility in livestock.

99. Which practice helps in the management of animal waste?

A) Composting
B) Ignoring waste management
C) Overcrowding
D) Feeding low-quality feed

Answer: A) Composting

Rationale: Composting is an effective method for managing and recycling animal waste, turning it into useful fertilizer.

100. What is the term for the amount of time an animal spends in a pen or housing unit?

A) Housing duration
B) Stay period
C) Pen time
D) Residence time

Answer: D) Residence time

Rationale: Residence time refers to the duration an animal spends in a specific housing or pen area.

D. Agricultural Engineering

1. **What is the primary function of a plow in agricultural engineering?**
   A) Planting seeds
   B) Tilling soil
   C) Harvesting crops
   D) Irrigating fields
   Answer: B) Tilling soil
   Rationale: A plow is used to turn and aerate soil, preparing it for planting.

2. Which of the following is an essential component of an irrigation system?
   A) Tractor
   B) Pump
   C) Seeder
   D) Fertilizer
   Answer: B) Pump
   Rationale: A pump is vital for moving water through an irrigation system.

3. What does CAD stand for in agricultural engineering design?
   A) Computer Aided Design
   B) Crop Area Distribution
   C) Centralized Agricultural Data
   D) Controlled Agricultural Development
   Answer: A) Computer Aided Design
   Rationale: CAD is used for creating precision drawings or technical illustrations.

4. Which type of irrigation system delivers water directly to the roots of plants?
   A) Surface irrigation
   B) Drip irrigation
   C) Sprinkler irrigation
   D) Flood irrigation
   Answer: B) Drip irrigation
   Rationale: Drip irrigation minimizes water waste by delivering water directly to the plant roots.

5. What is the purpose of soil compaction in agricultural engineering?
   A) To increase aeration
   B) To reduce erosion
   C) To improve crop yield

D) To increase soil density

Answer: D) To increase soil density

Rationale: Soil compaction increases density, which can enhance stability for machinery.

6. Which tool is commonly used for measuring soil moisture content?

A) Hygrometer

B) Tensiometer

C) Barometer

D) Anemometer

Answer: B) Tensiometer

Rationale: A tensiometer measures the tension or suction of soil moisture.

7. What type of machine is primarily used for harvesting rice in the Philippines?

A) Combine harvester

B) Reaper

C) Mower

D) Thresher

Answer: A) Combine harvester

Rationale: Combine harvesters are designed for efficiently harvesting rice.

8. Which of the following is a renewable energy source used in agricultural engineering?

A) Natural gas

B) Biomass

C) Coal

D) Nuclear

Answer: B) Biomass

Rationale: Biomass can be produced from agricultural waste and is a renewable energy source.

9. What is the primary advantage of using greenhouses in agriculture?

A) Reduced labor costs

B) Extended growing seasons

C) Increased land usage

D) Decreased water use

Answer: B) Extended growing seasons

Rationale: Greenhouses create controlled environments, allowing for year-round production.

10. In agricultural engineering, what does the term "hydroponics" refer to?

A) Soil-based farming

B) Growing plants in water without soil

C) Organic farming

D) Integrated pest management

Answer: B) Growing plants in water without soil

Rationale: Hydroponics is a method of growing plants using nutrient-rich water.

11. What is the purpose of a seed drill?

A) To fertilize soil

B) To plant seeds at a specific depth and spacing

C) To harvest crops

D) To till the land

Answer: B) To plant seeds at a specific depth and spacing

Rationale: A seed drill allows for precise planting of seeds.

12. Which structure is essential for livestock housing in tropical climates?

A) Insulated barn

B) Open-sided shed

C) Climate-controlled facility

D) Concrete blockhouse

Answer: B) Open-sided shed

Rationale: Open-sided sheds provide ventilation and shade for livestock in hot climates.

13. What is the main benefit of contour farming?

A) Increased soil erosion

B) Enhanced water conservation

C) Higher planting density

D) Reduced labor requirements

Answer: B) Enhanced water conservation

Rationale: Contour farming reduces runoff and conserves moisture in the soil.

14. Which of the following is a key advantage of using no-till farming?

A) Increased soil erosion

B) Reduced soil structure

C) Improved soil moisture retention

D) Increased compaction

Answer: C) Improved soil moisture retention

Rationale: No-till farming maintains soil structure and moisture.

15. What type of structure is used for rainwater harvesting?

A) Silo

B) Reservoir

C) Greenhouse

D) Grain bin

Answer: B) Reservoir

Rationale: Reservoirs store collected rainwater for agricultural use.

16. Which agricultural machine is primarily used for tilling soil?

A) Harvester

B) Disc plow

C) Seeder

D) Sprayer

Answer: B) Disc plow

Rationale: Disc plows are designed to break up and turn soil.

17. What is the main goal of agricultural drainage systems?

A) To increase water supply

B) To manage excess water and improve soil conditions

C) To reduce soil fertility

D) To prevent erosion

Answer: B) To manage excess water and improve soil conditions

Rationale: Drainage systems help remove excess water from fields.

18. Which of the following is a key feature of precision agriculture?

A) Uniform crop management

B) Variable rate technology

C) Manual labor

D) Randomized planting

Answer: B) Variable rate technology

Rationale: Precision agriculture utilizes technology to manage inputs based on specific field conditions.

19. What does the term "agricultural mechanization" refer to?

A) Use of organic farming practices

B) Implementation of machines and technology in farming

C) Soil conservation techniques

D) Crop rotation strategies

Answer: B) Implementation of machines and technology in farming

Rationale: Agricultural mechanization involves using machinery to enhance farming efficiency.

20. Which method is often used to reduce soil erosion in sloped areas?

A) Deep plowing

B) Terracing

C) Monoculture planting

D) Overgrazing

Answer: B) Terracing

Rationale: Terracing creates flat areas on slopes to reduce erosion.

21. What is the primary purpose of a grain dryer?

A) To enhance flavor

B) To reduce moisture content in harvested grains

C) To increase weight

D) To cool grains

Answer: B) To reduce moisture content in harvested grains

Rationale: Grain dryers remove excess moisture to prevent spoilage.

22. Which of the following systems is designed to monitor environmental conditions in farming?

A) GPS

B) Weather station

C) Irrigation system

D) Soil sampler

Answer: B) Weather station

Rationale: Weather stations track climate conditions that affect farming.

23. What is a major benefit of using organic fertilizers?

A) Instant nutrient release

B) Environmental sustainability

C) High cost

D) Toxicity to plants

Answer: B) Environmental sustainability

Rationale: Organic fertilizers improve soil health without harming the environment.

24. What type of irrigation is characterized by rotating sprinklers?

A) Surface irrigation

B) Drip irrigation

C) Sprinkler irrigation

D) Flood irrigation

Answer: C) Sprinkler irrigation

Rationale: Sprinkler irrigation uses rotating sprinklers to distribute water over crops.

25. Which device is commonly used to measure soil pH?

A) Soil thermometer

B) pH meter

C) Soil auger

D) Moisture meter

Answer: B) pH meter

Rationale: A pH meter provides accurate measurements of soil acidity or alkalinity.

26. What is the main purpose of a tillage implement?

A) To fertilize soil

B) To prepare seedbeds and control weeds

C) To harvest crops

D) To water plants

Answer: B) To prepare seedbeds and control weeds

Rationale: Tillage implements break up soil and manage weeds before planting.

27. Which of the following is a sustainable practice in agricultural engineering?

A) Overusing chemical fertilizers

B) Crop rotation

C) Monoculture

D) Soil depletion

Answer: B) Crop rotation

Rationale: Crop rotation enhances soil fertility and reduces pest buildup.

28. What is the primary function of a harvester?

A) To plant seeds

B) To till soil

C) To cut and gather crops

D) To irrigate fields

Answer: C) To cut and gather crops

Rationale: Harvesters are designed for efficiently cutting and collecting crops.

29. Which of the following best describes hydroponic systems?

A) Soil-based growing methods

B) Water-based growing methods

C) Outdoor farming practices

D) Monoculture farming

Answer: B) Water-based growing methods

Rationale: Hydroponics utilizes nutrient solutions in water to grow plants without soil.

30. What is the term for the process of applying chemicals to control pests and diseases?

A) Fertilization

B) Irrigation

C) Pest management

D) Crop rotation

Answer: C) Pest management

Rationale: Pest management involves the application of chemicals to protect crops.

31. A. Which type of tractor is best suited for small-scale farming in the Philippines?

A) Utility tractor

B) Row-crop tractor

C) Track tractor

D) Garden tractor

Answer: A) Utility tractor

Rationale: Utility tractors are versatile and suitable for various tasks on small farms.

31. B. What is the purpose of using cover crops?

A) To increase soil erosion

B) To improve soil health and prevent weeds

C) To reduce biodiversity

D) To decrease nutrient availability

Answer: B) To improve soil health and prevent weeds

Rationale: Cover crops enhance soil quality and suppress weeds.

32. Which of the following is a benefit of using conservation tillage?

A) Increased soil erosion

B) Reduced water retention

C) Improved soil structure

D) Higher labor costs

Answer: C) Improved soil structure

Rationale: Conservation tillage maintains soil structure and health.

33. What is the primary function of a windbreak in agriculture?

A) To increase crop yield

B) To reduce wind speed and protect crops

C) To provide shade

D) To increase soil temperature

Answer: B) To reduce wind speed and protect crops

Rationale: Windbreaks protect crops from wind damage.

34. Which technology is often used in precision agriculture to gather data about crop conditions?

A) Drones

B) Tractors

C) Plows

D) Seeders

Answer: A) Drones

Rationale: Drones are utilized for aerial imaging and data collection in precision farming.

35. What is the purpose of a soil conservation program?

A) To increase chemical use

B) To reduce soil degradation and erosion

C) To promote monoculture

D) To enhance pest populations

Answer: B) To reduce soil degradation and erosion

Rationale: Soil conservation programs aim to maintain soil health and prevent erosion.

36. Which of the following is a key factor in designing an efficient irrigation system?

A) Crop rotation

B) Water availability

C) Soil texture

D) All of the above

Answer: D) All of the above

Rationale: All these factors influence the design and efficiency of irrigation systems.

37. What is the role of a soil survey?

A) To evaluate water sources

B) To assess soil properties and suitability for crops

C) To measure air quality

D) To test crop yield

Answer: B) To assess soil properties and suitability for crops

Rationale: Soil surveys provide critical information about soil characteristics.

38. What is the primary advantage of using renewable energy in agriculture?

A) Decreased costs

B) Environmental sustainability

C) Increased labor needs

D) Limited application

Answer: B) Environmental sustainability

Rationale: Renewable energy reduces reliance on fossil fuels, benefiting the environment.

39. Which piece of equipment is essential for mixing fertilizers and soil amendments?

A) Tiller
B) Spreaders
C) Cultivator
D) Seeder

Answer: B) Spreaders

Rationale: Spreaders are used to evenly distribute fertilizers and amendments.

40. What is the main purpose of a crop rotation system?

A) To increase soil degradation
B) To improve soil fertility and reduce pests
C) To promote monoculture
D) To decrease biodiversity

Answer: B) To improve soil fertility and reduce pests

Rationale: Crop rotation helps maintain soil health and minimizes pest issues.

41. Which agricultural engineering practice helps improve drainage in wet soils?

A) Tillage
B) Raised beds
C) Cover cropping
D) Irrigation

Answer: B) Raised beds

Rationale: Raised beds improve drainage by elevating plant roots above wet soil.

42. What is the primary role of a forage harvester?

A) To till soil
B) To harvest forage crops
C) To plant seeds
D) To apply pesticides

Answer: B) To harvest forage crops

Rationale: Forage harvesters are designed specifically for cutting and gathering forage.

43. Which type of equipment is used to plant seeds in rows?

A) Seeder
B) Tiller
C) Harvester
D) Spreader

Answer: A) Seeder

Rationale: Seeders plant seeds at specific depths and spacing in rows.

44. What is the primary objective of agricultural drainage?

A) To improve soil moisture
B) To remove excess water
C) To retain nutrients
D) To increase soil erosion

Answer: B) To remove excess water

Rationale: Agricultural drainage systems are designed to manage excess water in fields.

45. Which of the following is used to enhance the efficiency of water usage in agriculture?

A) Flood irrigation
B) Drip irrigation
C) Surface irrigation

D) Overhead irrigation

Answer: B) Drip irrigation

Rationale: Drip irrigation minimizes water waste by delivering water directly to plant roots.

46. What is the main function of a cultivator?

A) To plant seeds

B) To break up soil and control weeds

C) To harvest crops

D) To irrigate fields

Answer: B) To break up soil and control weeds

Rationale: Cultivators prepare soil and manage weeds without turning it over.

47. Which agricultural practice helps in reducing soil compaction?

A) Continuous tillage

B) Use of cover crops

C) Overgrazing

D) High traffic from machinery

Answer: B) Use of cover crops

Rationale: Cover crops improve soil structure and reduce compaction.

48. What is the primary goal of sustainable agriculture?

A) Maximize profit

B) Minimize labor

C) Maintain ecological balance

D) Increase chemical use

Answer: C) Maintain ecological balance

Rationale: Sustainable agriculture aims to balance environmental health with agricultural productivity.

49. Which system is designed for collecting and storing rainwater?

A) Irrigation system

B) Hydroponics

C) Rainwater harvesting system

D) Drainage system

Answer: C) Rainwater harvesting system

Rationale: Rainwater harvesting systems are used to collect and store rainwater for agricultural use.

50. What type of equipment is commonly used for soil sampling?

A) Soil auger

B) Seeder

C) Tiller

D) Cultivator

Answer: A) Soil auger

Rationale: Soil augers are used to collect soil samples for analysis.

51. Which irrigation method uses a network of pipes and emitters to deliver water?

A) Surface irrigation

B) Sprinkler irrigation

C) Drip irrigation

D) Flood irrigation

Answer: C) Drip irrigation

Rationale: Drip irrigation utilizes a system of pipes and emitters to provide precise water delivery

52. What is the primary purpose of irrigation in agriculture?

A) Soil erosion control

B) Pest management

C) Water supply for crops

D) Harvest optimization

Answer: C) Water supply for crops

Rationale: Irrigation is primarily used to provide crops with the necessary water for growth, especially in areas with insufficient rainfall.

53. **Which of the following is a common type of irrigation system used in the Philippines?**

A) Drip irrigation
B) Subsurface irrigation
C) Flood irrigation
D) Hydroponic irrigation

Answer: A) Drip irrigation

Rationale: Drip irrigation is widely adopted for its efficiency in water use, particularly in areas with water scarcity.

54.. **What is the purpose of soil conservation techniques?**

A) Increase crop yield
B) Prevent soil erosion
C) Improve pest resistance
D) Enhance fertilizer absorption

Answer: B) Prevent soil erosion

Rationale: Soil conservation techniques are primarily implemented to prevent erosion and maintain soil health.

55. **What is the recommended slope for terracing in mountainous areas?**

A) 1-5%
B) 5-10%
C) 10-20%
D) 20-30%

Answer: B) 5-10%

Rationale: Terracing is effective on slopes of 5-10% to reduce runoff and erosion while maintaining land usability.

56. **Which of the following is a disadvantage of monocropping?**

A) Increased yield
B) Soil nutrient depletion
C) Pest control
D) Simplified farming

Answer: B) Soil nutrient depletion

Rationale: Monocropping can lead to nutrient depletion as the same crop repeatedly extracts specific nutrients from the soil.

57.. **What type of technology is commonly used to improve pest management?**

A) Manual weeding
B) Chemical pesticides
C) Integrated Pest Management (IPM)
D) Crop rotation

Answer: C) Integrated Pest Management (IPM)

Rationale: IPM combines biological, cultural, and chemical practices to manage pests sustainably.

58. **What is the main advantage of using organic fertilizers?**

A) Immediate nutrient availability
B) Long-term soil health improvement

C) Cost-effectiveness
D) Higher nitrogen content
Answer: B) Long-term soil health improvement
Rationale: Organic fertilizers enhance soil structure and biodiversity over time.

59. **In agricultural engineering, what is the significance of CAD (Computer-Aided Design)?**
A) Reduces labor costs
B) Facilitates design and planning of agricultural structures
C) Increases crop yield
D) Minimizes pest occurrence
Answer: B) Facilitates design and planning of agricultural structures
Rationale: CAD is essential for designing efficient and effective agricultural infrastructure.

60. **Which of the following is an effective way to conserve water in agriculture?**
A) Open field irrigation
B) Rainwater harvesting
C) Excessive tillage
D) Overwatering
Answer: B) Rainwater harvesting
Rationale: Rainwater harvesting captures and stores rainwater for agricultural use, promoting water conservation.

61. **What is the role of a soil engineer in agriculture?**
A) Design irrigation systems
B) Manage pest control
C) Assess and improve soil properties
D) Control crop diseases
Answer: C) Assess and improve soil properties
Rationale: Soil engineers analyze soil characteristics to enhance agricultural productivity.

62. **Which of the following crops is commonly grown in the Philippines using agroforestry systems?**
A) Rice
B) Corn
C) Coffee
D) Sugarcane
Answer: C) Coffee
Rationale: Coffee is often integrated into agroforestry systems to enhance biodiversity and sustainability.

63. **What is the primary benefit of using greenhouse technology in agriculture?**
A) Reduces labor requirements
B) Controls environmental conditions
C) Lowers water usage
D) Increases pest prevalence
Answer: B) Controls environmental conditions
Rationale: Greenhouses allow for the regulation of temperature, humidity, and light, optimizing crop growth.

64. **Which machine is commonly used for land preparation in the Philippines?**
A) Harvester
B) Tractor

C) Sprayer
D) Seeder
Answer: B) Tractor
Rationale: Tractors are versatile and widely used for various land preparation tasks in agriculture.

65. **What is the main goal of precision agriculture?**
A) Increase fertilizer use
B) Maximize crop yield through data analysis
C) Reduce machinery costs
D) Eliminate the need for labor
Answer: B) Maximize crop yield through data analysis
Rationale: Precision agriculture uses data to make informed decisions that optimize production and resources.

66. **Which of the following is a key component of sustainable agriculture?**
A) Chemical dependence
B) Biodiversity
C) Monoculture
D) Intensive tillage
Answer: B) Biodiversity
Rationale: Biodiversity promotes resilience and sustainability in agricultural systems.

67. **What is the primary purpose of drainage systems in agricultural fields?**
A) Increase soil moisture
B) Prevent waterlogging
C) Enhance nutrient absorption
D) Improve pest control
Answer: B) Prevent waterlogging
Rationale: Drainage systems help remove excess water, preventing damage to crops.

68. **Which of the following tools is essential for measuring soil moisture?**
A) Tiller
B) Soil moisture sensor
C) Seeder
D) Cultivator
Answer: B) Soil moisture sensor
Rationale: Soil moisture sensors provide critical data for irrigation management.

69. **In agricultural engineering, what does "farm mechanization" refer to?**
A) Use of manual labor only
B) Application of machines in farming
C) Organic farming methods
D) Crop rotation practices
Answer: B) Application of machines in farming
Rationale: Farm mechanization involves using machinery to improve efficiency and productivity in agricultural operations.

70. **Which irrigation method is most efficient in terms of water usage?**
A) Surface irrigation
B) Drip irrigation

C) Flood irrigation
D) Sprinkler irrigation
Answer: B) Drip irrigation
Rationale: Drip irrigation delivers water directly to the plant roots, minimizing evaporation and runoff.

71. **What type of soil is ideal for rice cultivation in the Philippines?**
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Saline soil
Answer: B) Clayey soil
Rationale: Clayey soil retains water well, making it suitable for rice cultivation.

72. **Which of the following is a renewable energy source that can be utilized in agriculture?**
A) Natural gas
B) Solar power
C) Coal
D) Nuclear energy
Answer: B) Solar power
Rationale: Solar power can be harnessed for various agricultural applications, such as powering irrigation systems.

73. **What is the main disadvantage of using chemical pesticides?**
A) High effectiveness
B) Environmental pollution
C) Quick action
D) Ease of application
Answer: B) Environmental pollution
Rationale: Chemical pesticides can contaminate soil and water, leading to ecological harm.

74. **What is the function of a tiller in agriculture?**
A) Harvesting crops
B) Planting seeds
C) Soil preparation
D) Watering plants
Answer: C) Soil preparation
Rationale: A tiller is used to break up and aerate soil, preparing it for planting.

75. **Which agricultural practice helps maintain soil fertility over time?**
A) Intensive monoculture
B) Crop rotation
C) Heavy chemical use
D) Overgrazing
Answer: B) Crop rotation
Rationale: Crop rotation replenishes soil nutrients by varying the types of crops planted.

76. **What is the primary focus of agricultural research in the Philippines?**
A) Increasing chemical use
B) Sustainable farming practices

C) Monoculture techniques
D) Traditional farming methods
Answer: B) Sustainable farming practices
Rationale: Research aims to promote sustainable agriculture to ensure food security and environmental health.

77. **Which of the following factors affects crop yield the most?**
A) Weather conditions
B) Soil type
C) Pest management
D) Crop variety
Answer: A) Weather conditions
Rationale: Weather conditions, including temperature and rainfall, have a significant impact on crop growth and yield.

78. **What is the purpose of a windbreak in agriculture?**
A) Enhance soil fertility
B) Protect crops from wind damage
C) Increase sunlight exposure
D) Control pest populations
Answer: B) Protect crops from wind damage
Rationale: Windbreaks help reduce wind speed, minimizing damage to crops.

79. **Which crop is most widely cultivated in the Philippines?**
A) Corn
B) Rice
C) Sugarcane
D) Pineapple
Answer: B) Rice
Rationale: Rice is the staple food and most widely grown crop in the Philippines.

80. **Which tool is commonly used for measuring soil pH?**
A) Tiller
B) pH meter
C) Soil compactor
D) Seeder
Answer: B) pH meter
Rationale: A pH meter accurately measures the acidity or alkalinity of soil.

81. **What is the main goal of agroecology?**
A) Maximize chemical inputs
B) Promote ecological sustainability
C) Increase crop uniformity
D) Focus on monoculture practices
Answer: B) Promote ecological sustainability
Rationale: Agroecology emphasizes sustainable farming practices that work with natural ecosystems.

82. **Which type of energy is primarily used in modern agricultural machinery?**
A) Solar energy
B) Diesel fuel
C) Wind energy

D) Human power

Answer: B) Diesel fuel

Rationale: Diesel fuel is commonly used in tractors and other agricultural machinery for its efficiency and power.

83. **What is the significance of plant breeding in agriculture?**

A) Increase pesticide use

B) Develop improved crop varieties

C) Reduce labor costs

D) Promote monoculture

Answer: B) Develop improved crop varieties

Rationale: Plant breeding aims to enhance crop traits, such as yield, disease resistance, and adaptability.

84. **What is a common consequence of soil salinity in agriculture?**

A) Increased crop growth

B) Reduced crop yield

C) Improved soil structure

D) Enhanced water retention

Answer: B) Reduced crop yield

Rationale: High soil salinity can hinder plant growth and reduce yields.

85. **Which of the following practices is essential for sustainable livestock farming?**

A) Overgrazing

B) Rotational grazing

C) High-density feeding

D) Monoculture pastures

Answer: B) Rotational grazing

Rationale: Rotational grazing helps maintain pasture health and reduces land degradation.

88. **What type of pest management strategy involves using natural predators?**

A) Chemical control

B) Cultural practices

C) Biological control

D) Mechanical control

Answer: C) Biological control

Rationale: Biological control utilizes natural predators to manage pest populations.

89. **Which factor is most important for determining the viability of a crop?**

A) Soil texture

B) Seed quality

C) Local climate

D) Market demand

Answer: C) Local climate

Rationale: Climate significantly affects the growth and viability of specific crops.

90. **What is the primary goal of agricultural extension services?**

A) Increase chemical sales

B) Provide farmers with information and education

C) Promote monoculture practices

D) Control market prices

Answer: B) Provide farmers with information and education

Rationale: Agricultural extension services aim to improve farmers' knowledge and practices for better productivity.

91. **Which of the following is a common method for controlling soil erosion?**

A) Monocropping

B) Cover cropping

C) Excessive tillage
D) Chemical fertilizers
Answer: B) Cover cropping
Rationale: Cover crops protect soil from erosion and improve soil health.

92. **What is the impact of climate change on agriculture?**
A) Increased crop diversity
B) Improved weather patterns
C) Altered growing seasons
D) Consistent yields
Answer: C) Altered growing seasons
Rationale: Climate change can lead to changes in temperature and precipitation, affecting growing seasons.

93. **What is the main purpose of a moisture retention strategy in agriculture?**
A) Reduce nutrient loss
B) Enhance pest control
C) Improve water availability for crops
D) Increase machinery efficiency
Answer: C) Improve water availability for crops
Rationale: Moisture retention strategies help ensure crops have adequate water, especially in dry seasons.

94. **Which of the following is a key advantage of hydroponics?**
A) Requires large land areas
B) Involves soil usage
C) Reduces water consumption
D) Needs high pesticide application
Answer: C) Reduces water consumption
Rationale: Hydroponics uses significantly less water than traditional soil-based growing methods.

95. **What is the main environmental concern associated with intensive agriculture?**
A) Increased biodiversity
B) Soil depletion and pollution
C) Enhanced crop yields
D) Improved food security
Answer: B) Soil depletion and pollution
Rationale: Intensive agriculture often leads to soil degradation and chemical runoff.

96. **Which engineering principle is applied in the design of agricultural machinery?**
A) Structural analysis
B) Chemical engineering
C) Electrical engineering
D) Environmental engineering
Answer: A) Structural analysis
Rationale: Structural analysis is crucial for ensuring that agricultural machinery can withstand operational stresses.

97. **What is the primary benefit of using organic pesticides?**
A) Immediate action
B) Environmental safety

C) Higher efficacy
D) Lower cost
Answer: B) Environmental safety
Rationale: Organic pesticides are generally safer for the environment compared to synthetic alternatives.

98. **Which type of crop is most suitable for intercropping systems?**
A) High nutrient-demand crops
B) Legumes and cereals
C) Monoculture varieties
D) Perennial crops only
Answer: B) Legumes and cereals
Rationale: Intercropping legumes with cereals optimizes nutrient use and enhances soil fertility.

99. A. **What is the primary challenge faced by smallholder farmers in the Philippines?**
A) Excessive land ownership
B) Limited access to technology
C) High market prices
D) Abundant resources
Answer: B) Limited access to technology
Rationale: Smallholder farmers often struggle with access to modern agricultural technologies and practices.

99. B. **Which of the following is a benefit of agroforestry?**
A) Decreased biodiversity
B) Enhanced soil erosion
C) Improved carbon sequestration
D) Increased land degradation
Answer: C) Improved carbon sequestration
Rationale: Agroforestry practices contribute to carbon storage, helping mitigate climate change.

100. **What is the role of drainage in rice farming?**
A) Increase soil salinity
B) Control flooding
C) Enhance waterlogging
D) Promote weed growth
Answer: B) Control flooding
Rationale: Proper drainage is critical in rice farming to prevent excess water that can damage crops

E. Soil Science

1. **What is the primary component of soil?**

A) Air
B) Water
C) Minerals
D) Organic matter
Answer: C) Minerals
Rationale: Soil is primarily composed of minerals, which provide the structure and nutrients for plant growth.

2. Which soil type is best for agriculture in the Philippines?

A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Saline soil
Answer: C) Loamy soil
Rationale: Loamy soil has a balanced texture and is ideal for retaining moisture and nutrients.

3. What is the pH range considered optimal for most crops?

A) 3.0 - 4.0
B) 4.5 - 5.5
C) 6.0 - 7.0
D) 8.0 - 9.0
Answer: C) 6.0 - 7.0
Rationale: Most crops thrive in slightly acidic to neutral pH, which allows optimal nutrient availability.

4. What is soil erosion?

A) Accumulation of soil
B) Loss of soil due to water or wind
C) Soil fertility improvement
D) Soil compaction
Answer: B) Loss of soil due to water or wind
Rationale: Soil erosion is the removal of the topsoil layer, leading to degradation of land.

5. Which factor contributes most to soil formation?

A) Time
B) Plants
C) Animals
D) Water
Answer: A) Time
Rationale: Soil formation is a slow process that occurs over long periods, influenced by weathering and organic matter accumulation.

6. What does the term "soil texture" refer to?

A) Soil color
B) Soil moisture
C) Particle size distribution
D) Soil temperature
Answer: C) Particle size distribution
Rationale: Soil texture describes the proportions of sand, silt, and clay in the soil, which affects its properties.

7. What is the main advantage of using cover crops?

A) Increased soil erosion
B) Nutrient depletion
C) Soil fertility improvement
D) Pesticide requirement
Answer: C) Soil fertility improvement
Rationale: Cover crops enhance soil health by preventing erosion and adding organic matter.

8. Which soil horizon is rich in organic matter?

A) O horizon
B) A horizon
C) B horizon
D) C horizon
Answer: A) O horizon
Rationale: The O horizon is the top layer of soil, composed mainly of organic material.

9. What role do earthworms play in soil health?

A) Decrease soil aeration
B) Increase soil compaction
C) Enhance soil structure and fertility
D) Promote soil erosion
Answer: C) Enhance soil structure and fertility
Rationale: Earthworms improve soil aeration, drainage, and nutrient cycling.

10. Which nutrient is essential for plant growth and is often deficient in tropical soils?

A) Nitrogen
B) Potassium
C) Phosphorus
D) Magnesium
Answer: C) Phosphorus
Rationale: Phosphorus is crucial for root development but can be limited in tropical soils due to leaching.

11. What is the process of adding organic matter to soil called?

A) Tilling
B) Composting

C) Aeration
D) Mulching
Answer: B) Composting
Rationale: Composting is the process of decomposing organic matter, enriching the soil with nutrients.

12. Which type of soil is most prone to waterlogging?
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Silty soil
Answer: B) Clayey soil
Rationale: Clayey soil has small particles that retain water, leading to potential waterlogging.

13. What is the primary function of soil microorganisms?
A) Compaction of soil
B) Breakdown of organic matter
C) Increase soil salinity
D) Soil erosion
Answer: B) Breakdown of organic matter
Rationale: Microorganisms decompose organic material, recycling nutrients back into the soil.

14. What does soil permeability refer to?
A) Soil fertility
B) Soil texture
C) Ability of soil to transmit water
D) Soil temperature
Answer: C) Ability of soil to transmit water
Rationale: Permeability indicates how well water moves through soil, affecting drainage and aeration.

15. Which soil type has the highest water retention capacity?
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Silty soil
Answer: B) Clayey soil
Rationale: Clayey soil holds more water due to its small particle size and high surface area.

16. What is soil compaction?
A) Increase in organic matter
B) Reduction of soil volume and density
C) Increase in soil aeration
D) Increase in soil porosity
Answer: B) Reduction of soil volume and density
Rationale: Soil compaction occurs when soil particles are pressed together, reducing porosity and aeration.

17. Which practice helps prevent soil erosion?
A) Deforestation
B) Overgrazing

C) Contour farming
D) Intensive tillage
Answer: C) Contour farming
Rationale: Contour farming involves plowing and planting across the slope of the land, reducing erosion.

18. What is the term for the ability of soil to hold nutrients?
A) Soil pH
B) Cation exchange capacity (CEC)
C) Soil texture
D) Soil structure
Answer: B) Cation exchange capacity (CEC)
Rationale: CEC measures the soil's ability to hold and exchange positively charged ions (cations), crucial for nutrient retention.

19. **Which soil amendment is commonly used to improve soil structure?**
A) Peat moss
B) Gypsum
C) Lime
D) Sand
Answer: A) Peat moss
Rationale: Peat moss enhances soil structure and water retention by adding organic matter.

20. What is the primary cause of soil salinization?
A) Excessive rainfall
B) Deforestation
C) Poor irrigation practices
D) Crop rotation
Answer: C) Poor irrigation practices
Rationale: Inefficient irrigation can lead to the accumulation of salts in the soil.

21. What type of soil is typically found in volcanic regions of the Philippines?
A) Alluvial soil
B) Loamy soil
C) Andisol
D) Podzol
Answer: C) Andisol
Rationale: Andisols are rich volcanic soils that are highly fertile and suitable for agriculture.

22. Which of the following is a sign of nutrient deficiency in plants?
A) Green leaves
B) Stunted growth
C) Abundant flowers
D) Increased fruit yield
Answer: B) Stunted growth
Rationale: Stunted growth is a common indicator of nutrient deficiency.

23. What is the process by which nutrients are washed away from the soil?
A) Leaching
B) Erosion

C) Sedimentation
D) Compaction
Answer: A) Leaching
Rationale: Leaching refers to the loss of nutrients from the soil due to water movement.

24. Which soil property affects its ability to retain moisture?
A) Soil texture
B) Soil color
C) Soil temperature
D) Soil density
Answer: A) Soil texture
Rationale: Soil texture influences the size of soil pores and thus its moisture retention capacity.

25. What is a common symptom of soil compaction in crops?
A) Increased yield
B) Root growth restriction
C) Enhanced aeration
D) Increased organic matter
Answer: B) Root growth restriction
Rationale: Compacted soil restricts root penetration, leading to poor plant growth.

26. Which of the following practices improves soil aeration?
A) Tilling
B) Overgrazing
C) Excessive irrigation
D) Cover cropping
Answer: A) Tilling
Rationale: Tilling loosens the soil, improving aeration and root penetration.

27. What is the primary purpose of soil testing?
A) Determine soil color
B) Assess soil structure
C) Evaluate nutrient status and pH
D) Measure soil temperature
Answer: C) Evaluate nutrient status and pH
Rationale: Soil testing helps identify nutrient deficiencies and pH levels for informed management.

28. Which nutrient is most mobile in the soil?
A) Nitrogen
B) Phosphorus
C) Potassium
D) Calcium
Answer: A) Nitrogen
Rationale: Nitrogen is highly mobile in soil water and can easily leach away.

29. What is the effect of soil acidity on nutrient availability?
A) Increases availability of all nutrients
B) Decreases availability of certain nutrients
C) Has no effect
D) Increases soil salinity
Answer: B) Decreases availability of certain nutrients
Rationale: High acidity can reduce the availability of essential nutrients like phosphorus and calcium.

30. Which soil horizon is known for its accumulation of leached materials?
A) O horizon
B) A horizon

C) B horizon
D) C horizon
Answer: C) B horizon
Rationale: The B horizon is where materials leached from the upper layers accumulate.

31. What does the term "soil fertility" refer to?
A) Soil structure
B) Soil texture
C) Ability to support plant growth
D) Soil moisture content
Answer: C) Ability to support plant growth
Rationale: Soil fertility is a measure of how well soil can provide essential nutrients for plants.

32. Which crop is often used as a cover crop to improve soil health?
A) Corn
B) Wheat
C) Legumes
D) Rice
Answer: C) Legumes
Rationale: Legumes can fix nitrogen in the soil, enhancing its fertility.

33. What is the main function of lime in soil management?
A) Increase acidity
B) Decrease nutrient availability
C) Raise soil pH
D) Promote erosion
Answer: C) Raise soil pH
Rationale: Lime is commonly applied to raise the pH of acidic soils, improving nutrient availability.

34. Which soil type is most susceptible to wind erosion?
A) Clayey soil
B) Loamy soil
C) Sandy soil
D) Silty soil
Answer: C) Sandy soil
Rationale: Sandy soils have larger particles and lower cohesion, making them vulnerable to wind erosion.

35. What is the primary benefit of mulching?
A) Decreases soil moisture
B) Reduces soil temperature
C) Conserves soil moisture
D) Increases pest activity
Answer: C) Conserves soil moisture
Rationale: Mulching helps retain moisture in the soil and reduces evaporation.

36. What is the role of mycorrhizal fungi in soil?
A) Decompose organic matter
B) Fix nitrogen
C) Enhance nutrient uptake for plants
D) Promote soil erosion
Answer: C) Enhance nutrient uptake for plants
Rationale: Mycorrhizal fungi form symbiotic relationships with plant roots, improving nutrient and water absorption.

37. What is a common effect of deforestation on soil?

A) Increased soil fertility
B) Decreased erosion
C) Loss of topsoil
D) Enhanced biodiversity
Answer: C) Loss of topsoil
Rationale: Deforestation can lead to soil erosion and loss of fertile topsoil.

38. What does the term "soil structure" refer to?

A) Color of soil
B) Arrangement of soil particles
C) Moisture content
D) Soil temperature
Answer: B) Arrangement of soil particles
Rationale: Soil structure describes how soil particles aggregate and arrange themselves.

39. Which nutrient is crucial for photosynthesis?

A) Nitrogen
B) Phosphorus
C) Potassium
D) Iron
Answer: D) Iron
Rationale: Iron is essential for chlorophyll formation and, thus, photosynthesis.

40. What practice can improve soil aeration?

A) Excessive watering
B) Tillage
C) Deforestation
D) Compacting
Answer: B) Tillage
Rationale: Tillage can help aerate the soil, making it more conducive to root growth.

41. What is the most effective way to reduce soil erosion on slopes?

A) Strip cropping
B) Monoculture
C) Deforestation
D) Excessive tillage
Answer: A) Strip cropping
Rationale: Strip cropping involves alternating rows of different crops, reducing erosion.

42. Which soil amendment is used to improve drainage in heavy soils?

A) Gypsum
B) Peat moss
C) Lime
D) Sand
Answer: D) Sand
Rationale: Adding sand to heavy soils improves drainage and soil structure.

43. What is the role of potassium in plant growth?

A) Root development
B) Photosynthesis

C) Water regulation and enzyme activation
D) Nitrogen fixation
Answer: C) Water regulation and enzyme activation
Rationale: Potassium helps regulate water balance and is vital for enzyme function.

44. What is the primary cause of nutrient runoff into water bodies?
A) Excessive rainfall
B) Fertilizer application
C) Soil compaction
D) Crop rotation
Answer: B) Fertilizer application
Rationale: Over-application of fertilizers can lead to runoff, causing pollution and eutrophication.

45. Which soil property is critical for understanding erosion potential?
A) Soil color
B) Soil texture
C) Soil temperature
D) Soil moisture
Answer: B) Soil texture
Rationale: Soil texture influences erosion risk; fine-textured soils are more prone to erosion.

46. Which crop is best for reclaiming degraded soils?
A) Corn
B) Legumes
C) Rice
D) Wheat
Answer: B) Legumes
Rationale: Legumes improve soil nitrogen levels and enhance fertility in degraded soils.

47. What is the effect of soil salinity on plant growth?
A) Promotes growth
B) Enhances nutrient uptake
C) Reduces growth and yield
D) Has no effect
Answer: C) Reduces growth and yield
Rationale: High soil salinity can hinder water absorption and nutrient availability for plants.

48. What is the primary goal of sustainable soil management?
A) Maximize short-term yields
B) Maintain soil health for future generations
C) Reduce labor costs
D) Increase chemical inputs
Answer: B) Maintain soil health for future generations
Rationale: Sustainable soil management focuses on preserving soil health for long-term productivity.

49. What is the effect of compaction on soil porosity?
A) Increases porosity
B) Decreases porosity
C) Has no effect
D) Changes soil color
Answer: B) Decreases porosity
Rationale: Compaction reduces the amount of space between soil particles, lowering porosity.

50. Which of the following best describes the "A horizon" of soil?
A) Unconsolidated material
B) Organic layer

C) Topsoil rich in organic matter
D) Subsoil layer
Answer: C) Topsoil rich in organic matter
Rationale: The A horizon, or topsoil, contains organic material and is vital for plant growth.

51. Which soil property primarily influences water infiltration?
A) Soil density
B) Soil texture
C) Soil color
D) Soil temperature
Answer: B) Soil texture
Rationale: Soil texture determines how quickly water can enter and move through the soil.

52. What is the primary benefit of rotating crops?
A) Decreases soil fertility
B) Reduces pest and disease pressure
C) Requires more fertilizer
D) Promotes monoculture
Answer: B) Reduces pest and disease pressure
Rationale: Crop rotation disrupts pest life cycles and reduces disease incidence.

53. What is the effect of excessive tillage on soil?
A) Improves soil structure
B) Increases organic matter
C) Leads to soil degradation
D) Enhances water retention
Answer: C) Leads to soil degradation
Rationale: Excessive tillage can destroy soil structure and lead to erosion and degradation.

54. Which soil property is important for nutrient retention?
A) Soil color
B) Cation exchange capacity (CEC)
C) Soil moisture
D) Soil temperature
Answer: B) Cation exchange capacity (CEC)
Rationale: CEC measures the soil's ability to hold and exchange essential nutrients.

55. What is the primary function of gypsum in soil management?
A) Increase soil acidity
B) Improve drainage and reduce compaction
C) Add nitrogen
D) Increase soil fertility
Answer: B) Improve drainage and reduce compaction
Rationale: Gypsum helps to break up compacted soils and improves drainage.

56. Which nutrient is most important for root development?
A) Nitrogen
B) Phosphorus
C) Potassium
D) Sulfur
Answer: B) Phosphorus
Rationale: Phosphorus is crucial for root growth and development.

57. What is a common effect of acid rain on soil?
A) Decreases soil salinity
B) Increases nutrient availability

C) Leaches essential nutrients
D) Improves soil structure
Answer: C) Leaches essential nutrients
Rationale: Acid rain can wash away important nutrients from the soil.

58. What is the term for the practice of growing different crops in succession?
A) Intercropping
B) Crop rotation
C) Monoculture
D) Cover cropping
Answer: B) Crop rotation
Rationale: Crop rotation involves alternating crops in a specific sequence to improve soil health.

59. Which soil type has the highest infiltration rate?
A) Clayey soil
B) Silty soil
C) Sandy soil
D) Loamy soil
Answer: C) Sandy soil
Rationale: Sandy soils have larger particles, allowing water to infiltrate quickly.

60. What is the primary cause of nutrient depletion in tropical soils?
A) Low rainfall
B) High temperature
C) Leaching due to high rainfall
D) Poor soil management
Answer: C) Leaching due to high rainfall
Rationale: Heavy rainfall can wash away nutrients, leading to depletion.

61. What is the main purpose of using green manure in soil management?
A) Reduce soil temperature
B) Increase soil acidity
C) Enhance soil fertility
D) Promote erosion
Answer: C) Enhance soil fertility
Rationale: Green manure adds organic matter and nutrients to the soil when decomposed.

62. Which of the following is a characteristic of acidic soils?
A) High nutrient retention
B) Low availability of essential nutrients
C) Increased crop yield
D) Enhanced microbial activity
Answer: B) Low availability of essential nutrients
Rationale: Acidic soils often limit the availability of nutrients like phosphorus.

63. What practice is effective for improving soil organic matter content?
A) Monoculture
B) Continuous cropping
C) Crop rotation
D) Intensive tillage
Answer: C) Crop rotation
Rationale: Crop rotation helps increase organic matter by incorporating diverse plant residues.

64. Which nutrient is essential for flowering and fruiting?
A) Nitrogen
B) Phosphorus

C) Potassium
D) Calcium
Answer: C) Potassium
Rationale: Potassium is vital for regulating processes related to flowering and fruit development.

65. What is the effect of excessive nitrogen on soil?
A) Improves soil health
B) Increases soil acidity
C) Decreases organic matter
D) Enhances microbial activity
Answer: B) Increases soil acidity
Rationale: Excessive nitrogen can lead to soil acidification over time.

66. Which soil amendment is commonly used to reduce soil acidity?
A) Gypsum
B) Lime
C) Sand
D) Peat
Answer: B) Lime
Rationale: Lime is used to raise soil pH and reduce acidity.

67. What is the primary purpose of using soil mulches?
A) Promote weed growth
B) Retain soil moisture and suppress weeds
C) Increase soil temperature
D) Enhance soil erosion
Answer: B) Retain soil moisture and suppress weeds
Rationale: Mulches help conserve moisture and inhibit weed growth.

68. What type of soil is characterized by a high organic matter content and good water retention?
A) Sandy soil
B) Clayey soil
C) Peaty soil
D) Saline soil
Answer: C) Peaty soil
Rationale: Peaty soils are rich in organic matter, allowing for high water retention.

69. Which agricultural practice can lead to soil degradation?
A) Crop rotation
B) No-till farming
C) Overgrazing
D) Cover cropping
Answer: C) Overgrazing
Rationale: Overgrazing removes vegetation, leading to soil erosion and degradation.

70. What does the term "soil profile" refer to?
A) Composition of soil
B) Vertical section of soil layers
C) Soil temperature changes
D) Soil color variations
Answer: B) Vertical section of soil layers
Rationale: A soil profile displays the various layers or horizons of soil.

71. What is the primary function of soil in agriculture?
A) Water storage
B) Plant growth medium

C) Habitat for animals
D) Source of minerals
Answer: B) Plant growth medium
Rationale: Soil serves as the medium where plants grow, providing nutrients and support.

72. What is the role of nitrogen-fixing bacteria in the soil?
A) Decompose organic matter
B) Fix atmospheric nitrogen into usable forms for plants
C) Promote soil acidity
D) Increase soil erosion
Answer: B) Fix atmospheric nitrogen into usable forms for plants
Rationale: Nitrogen-fixing bacteria convert atmospheric nitrogen into forms that plants can absorb.

73. What is the term for the layer of soil that is leached and depleted of nutrients?
A) A horizon
B) E horizon
C) B horizon
D) C horizon
Answer: B) E horizon
Rationale: The E horizon is characterized by the leaching of minerals and nutrients.

74. Which agricultural practice improves soil biodiversity?
A) Monoculture
B) Crop rotation
C) Excessive tillage
D) Chemical fertilizers
Answer: B) Crop rotation
Rationale: Crop rotation enhances biodiversity by varying plant species and their residues.

75. What is the purpose of soil conservation practices?
A) Increase soil erosion
B) Maintain soil quality and prevent degradation
C) Promote monoculture
D) Reduce water retention
Answer: B) Maintain soil quality and prevent degradation
Rationale: Soil conservation practices aim to protect soil from erosion and maintain its health.

76. Which type of soil is most beneficial for rice cultivation in the Philippines?
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Saline soil
Answer: B) Clayey soil
Rationale: Clayey soils retain water well, which is essential for rice cultivation.

77. What is a common effect of soil salinity on crops?
A) Increased yield
B) Reduced growth
C) Enhanced nutrient uptake
D) Improved soil structure
Answer: B) Reduced growth
Rationale: High salinity can negatively affect plant growth and nutrient absorption.

78. What is the primary benefit of composting organic waste?
A) Increases soil salinity
B) Reduces soil nutrients

C) Improves soil fertility
D) Promotes soil erosion
Answer: C) Improves soil fertility
Rationale: Composting adds nutrients and organic matter to the soil.

79. Which soil property affects its ability to support plant roots?
A) Soil moisture
B) Soil density
C) Soil texture
D) Soil color
Answer: C) Soil texture
Rationale: Soil texture influences root penetration and nutrient availability.

80. What is the effect of heavy rainfall on tropical soils?
A) Increased nutrient retention
B) Nutrient leaching and erosion
C) Enhanced crop yield
D) Decreased acidity
Answer: B) Nutrient leaching and erosion
Rationale: Heavy rainfall can wash away nutrients and lead to erosion in tropical regions.

81. What is the term for the process of water moving through the soil?
A) Evaporation
B) Percolation
C) Infiltration
D) Capillarity
Answer: B) Percolation
Rationale: Percolation refers to the movement of water through soil layers.

82. Which crop is known for improving nitrogen levels in the soil?
A) Corn
B) Soybeans
C) Barley
D) Oats
Answer: B) Soybeans
Rationale: Soybeans are legumes that fix atmospheric nitrogen, enriching soil fertility.

83. What is the main purpose of soil erosion control methods?
A) Increase soil nutrients
B) Reduce water infiltration
C) Prevent soil degradation
D) Promote monoculture
Answer: C) Prevent soil degradation
Rationale: Erosion control methods protect soil from being washed or blown away.

84. What is the primary benefit of using cover crops?
A) Reduces soil fertility
B) Prevents erosion and enhances soil health
C) Promotes monoculture
D) Increases pest populations
Answer: B) Prevents erosion and enhances soil health
Rationale: Cover crops help maintain soil structure and protect against erosion.

85. Which nutrient is crucial for seed germination?
A) Nitrogen
B) Phosphorus

C) Potassium
D) Calcium
Answer: B) Phosphorus
Rationale: Phosphorus is essential for energy transfer during seed germination.

86. What is the role of soil microorganisms in the ecosystem?
A) Decompose organic matter and recycle nutrients
B) Compete with plants for nutrients
C) Increase soil salinity
D) Decrease soil fertility
Answer: A) Decompose organic matter and recycle nutrients
Rationale: Microorganisms break down organic material, returning nutrients to the soil.

87. What is the effect of monoculture on soil health?
A) Improves biodiversity
B) Enhances nutrient cycling
C) Decreases soil fertility over time
D) Increases soil moisture
Answer: C) Decreases soil fertility over time
Rationale: Monoculture can lead to nutrient depletion and increased pest problems.

88. What practice can improve soil texture?
A) Overgrazing
B) Adding organic matter
C) Excessive tillage
D) Chemical fertilization
Answer: B) Adding organic matter
Rationale: Organic matter enhances soil structure and texture.

89. Which type of soil is most suitable for vegetable gardening?
A) Sandy soil
B) Clayey soil
C) Loamy soil
D) Saline soil
Answer: C) Loamy soil
Rationale: Loamy soil has a balanced texture, retaining moisture and nutrients well.

90. What is the role of organic matter in soil?
A) Decrease soil fertility
B) Improve soil structure and fertility
C) Increase soil salinity
D) Reduce water retention
Answer: B) Improve soil structure and fertility
Rationale: Organic matter enhances soil health, structure, and nutrient availability.

91. What is the effect of soil compaction on plant growth?
A) Promotes root expansion
B) Increases nutrient availability
C) Restricts root growth and water infiltration
D) Improves aeration
Answer: C) Restricts root growth and water infiltration
Rationale: Compacted soil makes it difficult for roots to grow and for water to move through.

92. Which soil amendment can improve soil pH?
A) Compost
B) Peat moss

C) Lime
D) Gypsum
Answer: C) Lime
Rationale: Lime is commonly used to raise soil pH and reduce acidity.

93. What is the primary cause of soil degradation?
A) Proper management practices
B) Overuse of fertilizers and pesticides
C) Crop rotation
D) Organic farming
Answer: B) Overuse of fertilizers and pesticides
Rationale: Excessive use of chemical inputs can lead to nutrient imbalances and degradation.

94. What is the main benefit of no-till farming?
A) Increases soil erosion
B) Improves soil structure and reduces compaction
C) Requires more water
D) Promotes monoculture
Answer: B) Improves soil structure and reduces compaction
Rationale: No-till farming preserves soil structure and moisture.

95. Which nutrient is essential for overall plant growth and development?
A) Nitrogen
B) Phosphorus
C) Potassium
D) All of the above
Answer: D) All of the above
Rationale: Nitrogen, phosphorus, and potassium are all essential for plant health and growth.

96. What is the main objective of soil management practices?
A) Maximize short-term yields
B) Enhance soil health and productivity
C) Increase chemical inputs
D) Promote monoculture
Answer: B) Enhance soil health and productivity
Rationale: Effective soil management focuses on sustainable practices for long-term productivity.

97. What is the role of earthworms in soil health?
A) Increase soil acidity
B) Decrease nutrient availability
C) Enhance soil structure and fertility
D) Compete with plants for nutrients
Answer: C) Enhance soil structure and fertility
Rationale: Earthworms improve soil aeration and nutrient cycling.

98. What is the primary cause of soil salinization?
A) Excessive rainfall
B) Over-irrigation and poor drainage
C) Natural soil formation processes
D) Crop rotation
Answer: B) Over-irrigation and poor drainage
Rationale: Poor drainage and excessive irrigation can lead to salt accumulation in soil.

99. What practice is effective for improving soil biodiversity?
A) Monoculture
B) Cover cropping

C) Excessive tillage
D) Chemical fertilizers
Answer: B) Cover cropping
Rationale: Cover crops enhance soil biodiversity by providing diverse plant residues.

100. What is the role of soil in the water cycle?
A) Increases evaporation
B) Acts as a water storage medium
C) Decreases rainfall
D) Reduces groundwater recharge
Answer: B) Acts as a water storage medium
Rationale: Soil holds water, playing a crucial role in the water cycle and supporting plant growth.

F. Plant Pathology

1. **What is the primary cause of plant diseases?**
A) Nutrient deficiencies
B) Environmental stress
C) Pathogenic organisms
D) Soil erosion
Answer: C) Pathogenic organisms
Rationale: Plant diseases are primarily caused by pathogens such as fungi, bacteria, viruses, and nematodes.

2. Which of the following is a common fungal disease affecting rice?
A) Rice blast
B) Bacterial blight
C) Downy mildew
D) Root knot
Answer: A) Rice blast
Rationale: Rice blast, caused by the fungus *Magnaporthe oryzae*, is a significant disease in rice cultivation.

3. What is the main vector for the transmission of viral diseases in plants?
A) Soil
B) Insects
C) Water
D) Wind
Answer: B) Insects
Rationale: Many viral diseases are transmitted by insect vectors, particularly aphids and whiteflies.

4. Which plant disease is characterized by yellowing and stunted growth?
A) Downy mildew
B) Powdery mildew
C) Viral infection
D) Root rot
Answer: C) Viral infection
Rationale: Viral infections often cause yellowing (chlorosis) and stunted growth in plants.

5. What is the term for the study of plant diseases?

A) Mycology
B) Entomology
C) Plant pathology
D) Agronomy
Answer: C) Plant pathology
Rationale: Plant pathology specifically focuses on plant diseases and their management.

6. Which method is commonly used to manage fungal diseases?

A) Fertilization
B) Biological control
C) Irrigation
D) Crop rotation
Answer: B) Biological control
Rationale: Biological control, using natural enemies of pathogens, is an effective method to manage fungal diseases.

7. What is the role of fungicides in plant disease management?

A) Enhance growth
B) Control fungal infections
C) Increase nutrient availability
D) Improve soil structure
Answer: B) Control fungal infections
Rationale: Fungicides are specifically designed to control fungal pathogens in plants.

8. Which of the following is a bacterial disease that affects rice?

A) Downy mildew
B) Bacterial blight
C) Fusarium wilt
D) Root rot
Answer: B) Bacterial blight
Rationale: Bacterial blight is a significant disease in rice caused by *Xanthomonas oryzae*.

9. What is the significance of crop rotation in disease management?

A) Decreases soil fertility
B) Disrupts pathogen life cycles
C) Reduces labor costs
D) Enhances pest populations
Answer: B) Disrupts pathogen life cycles
Rationale: Crop rotation helps break the cycles of pathogens that thrive on specific crops.

10. Which disease is caused by a nematode in plants?

A) Root knot
B) Leaf spot
C) Downy mildew
D) Bacterial wilt
Answer: A) Root knot
Rationale: Root knot nematodes cause galls on roots, impacting plant health and yield.

11. What is the term for a disease that causes wilting and yellowing of leaves?

A) Chlorosis
B) Necrosis
C) Blight

D) Wilt

Answer: D) Wilt

Rationale: Wilt diseases typically cause leaves to wilt and turn yellow due to vascular system blockage.

12. Which practice helps in the prevention of seed-borne diseases?

A) Using infected seeds

B) Seed treatment

C) Excessive irrigation

D) Over-fertilization

Answer: B) Seed treatment

Rationale: Treating seeds can eliminate pathogens before planting, preventing disease outbreaks.

13. What is the primary symptom of powdery mildew?

A) Yellowing of leaves

B) White, powdery spots on leaves

C) Leaf curling

D) Root rot

Answer: B) White, powdery spots on leaves

Rationale: Powdery mildew is characterized by white, powdery fungal growth on plant surfaces.

14. Which of the following is NOT a method of disease management?

A) Cultural practices

B) Chemical control

C) Soil erosion

D) Biological control

Answer: C) Soil erosion

Rationale: Soil erosion is a process, not a disease management method.

15. What type of pathogen causes the disease "frost injury"?

A) Fungal

B) Bacterial

C) Viral

D) Environmental

Answer: D) Environmental

Rationale: Frost injury is caused by environmental conditions, not by pathogens.

16. Which plant is susceptible to late blight?

A) Corn

B) Tomato

C) Rice

D) Soybean

Answer: B) Tomato

Rationale: Late blight, caused by *Phytophthora infestans*, is particularly destructive to tomatoes.

17. What is the primary way to manage bacterial wilt?

A) Improved drainage

B) Crop rotation

C) Fungicides

D) Biological control

Answer: B) Crop rotation

Rationale: Rotating crops helps disrupt the life cycle of the bacteria causing wilt.

18. Which of the following symptoms indicates a viral infection?

A) Water-soaked lesions

B) Leaf curl and mottling

C) Root decay

D) Wilting

Answer: B) Leaf curl and mottling

Rationale: Viral infections often cause distinctive leaf symptoms like curling and mottling.

19. What is a common method of diagnosing plant diseases?

A) Visual inspection
B) Soil testing
C) Weather forecasting
D) Nutrient analysis

Answer: A) Visual inspection

Rationale: Visual inspection allows for the identification of visible symptoms indicative of diseases.

20. Which organism is responsible for the disease known as "frost damage"?

A) Virus
B) Fungi
C) Environmental conditions
D) Bacteria

Answer: C) Environmental conditions

Rationale: Frost damage results from exposure to freezing temperatures, not pathogens.

21. What is the role of the stomata in plant health?

A) Nutrient absorption
B) Gas exchange
C) Water retention
D) Root growth

Answer: B) Gas exchange

Rationale: Stomata are openings on leaves that facilitate the exchange of gases (O2 and CO2).

22. Which disease is characterized by black streaks on the leaves of maize?

A) Leaf rust
B) Gray leaf spot
C) Southern corn leaf blight
D) Fusarium wilt

Answer: B) Gray leaf spot

Rationale: Gray leaf spot is characterized by elongated gray lesions, often leading to black streaks.

23. What type of pathogen is responsible for bacterial blight in rice?

A) Virus
B) Fungus
C) Bacteria
D) Nematode

Answer: C) Bacteria

Rationale: Bacterial blight in rice is caused by *Xanthomonas oryzae*.

24. What is the function of a disease-resistant variety in crop production?

A) Decreases yield
B) Increases vulnerability to diseases
C) Enhances plant health and yield
D) Requires more inputs

Answer: C) Enhances plant health and yield

Rationale: Disease-resistant varieties can reduce the incidence of diseases and improve overall yield.

25. Which of the following is a primary method of controlling nematodes?

A) Soil solarization
B) Crop rotation
C) Chemical fumigation

D) All of the above

Answer: D) All of the above

Rationale: Soil solarization, crop rotation, and fumigation are effective methods to manage nematodes.

26. What is the major impact of plant diseases on agriculture?

A) Increased yields
B) Decreased labor costs
C) Reduced crop yields and quality
D) Improved soil fertility

Answer: C) Reduced crop yields and quality

Rationale: Plant diseases can lead to significant yield losses and reduced quality of crops.

27. What is the term for the manipulation of plant environments to prevent disease?

A) Genetic engineering
B) Cultural practices
C) Biological control
D) Chemical management

Answer: B) Cultural practices

Rationale: Cultural practices involve techniques like spacing, watering, and sanitation to reduce disease risk.

28. Which of the following diseases is known to be seed-borne?

A) Bacterial wilt
B) Fusarium wilt
C) Downy mildew
D) Damping-off

Answer: D) Damping-off

Rationale: Damping-off, caused by various fungi, is often linked to infected seeds.

29. **Which of the following factors contributes to the spread of plant diseases?**

A) Adequate sunlight
B) Overcrowding of plants
C) Balanced fertilization
D) Proper irrigation

Answer: B) Overcrowding of plants

Rationale: Overcrowding can increase humidity and promote the spread of diseases.

30. What is the primary characteristic of biotrophic pathogens?

A) They kill their host
B) They require living host tissue to survive
C) They cause root rot
D) They thrive in dead matter

Answer: B) They require living host tissue to survive

Rationale: Biotrophic pathogens obtain nutrients from living plants without killing them.

31. Which of the following is an example of a viral disease in cassava?

A) Cassava mosaic
B) Bacterial wilt
C) Root rot
D) Leaf blight

Answer: A) Cassava mosaic

Rationale: Cassava mosaic disease is caused by viruses, leading to mottled leaves and reduced yield.

32. What is the purpose of using resistant varieties in crop production?

A) To increase the cost of production
B) To minimize the use of pesticides
C) To encourage the spread of diseases

D) To limit crop diversity

Answer: B) To minimize the use of pesticides

Rationale: Resistant varieties reduce the need for chemical interventions against diseases.

33. Which of the following best describes a necrotrophic pathogen?

A) They require living host tissue.

B) They thrive on dead or decaying tissue.

C) They do not cause visible symptoms.

D) They induce systemic resistance in hosts.

Answer: B) They thrive on dead or decaying tissue.

Rationale: Necrotrophic pathogens kill plant tissue and then feed on the dead matter.

34. Which condition favors the development of fungal diseases?

A) Low humidity

B) High temperatures

C) Excessive moisture

D) Bright sunlight

Answer: C) Excessive moisture

Rationale: Fungal diseases thrive in conditions with high moisture and humidity.

35. What is the primary management strategy for root rot diseases?

A) Excessive fertilization

B) Improved drainage

C) Overcrowding

D) High soil moisture

Answer: B) Improved drainage

Rationale: Improving drainage helps prevent waterlogging, which exacerbates root rot.

36. Which disease is known to cause a 'wilt' symptom in plants?

A) Root rot

B) Damping-off

C) Fusarium wilt

D) Leaf spot

Answer: C) Fusarium wilt

Rationale: Fusarium wilt is a vascular disease that causes wilting due to blockage of water transport.

37. What role do environmental conditions play in plant diseases?

A) They have no effect.

B) They can either exacerbate or mitigate disease severity.

C) They only cause diseases.

D) They are less important than pathogens.

Answer: B) They can either exacerbate or mitigate disease severity.

Rationale: Environmental factors such as temperature and humidity significantly influence disease development.

38. Which method is used to control bacterial diseases in crops?

A) Crop rotation

B) Fungicides

C) Soil sterilization

D) Chemical bactericides

Answer: D) Chemical bactericides

Rationale: Chemical bactericides are specifically designed to target bacterial pathogens.

39. What symptom is indicative of bacterial infections?

A) Powdery growth

B) Water-soaked lesions

C) Wilting
D) Leaf curl
Answer: B) Water-soaked lesions
Rationale: Water-soaked lesions are a common symptom of bacterial infections.

40. What is the purpose of using mulch in plant disease management?
A) Enhance nutrient availability
B) Control moisture levels and reduce disease pressure
C) Promote weed growth
D) Increase soil temperature
Answer: B) Control moisture levels and reduce disease pressure
Rationale: Mulching helps retain moisture and suppress diseases by reducing soil splash and humidity.

41. Which organism is responsible for coffee leaf rust?
A) Fungi
B) Bacteria
C) Nematodes
D) Viruses
Answer: A) Fungi
Rationale: Coffee leaf rust is caused by the fungus *Hemileia vastatrix*.

42. What is a common symptom of root-knot nematode infestation?
A) Yellowing of leaves
B) Galls or nodules on roots
C) Wilting
D) Necrosis
Answer: B) Galls or nodules on roots
Rationale: Root-knot nematodes create galls on plant roots, impairing nutrient and water uptake.

43. What role do plant growth-promoting rhizobacteria (PGPR) play in agriculture?
A) They cause diseases.
B) They promote plant growth and suppress pathogens.
C) They increase soil salinity.
D) They decompose organic matter.
Answer: B) They promote plant growth and suppress pathogens.
Rationale: PGPR enhance plant growth and can help in biological control of certain pathogens.

44. Which disease is characterized by a distinct 'mosaic' pattern on leaves?
A) Fusarium wilt
B) Bacterial blight
C) Viral infections
D) Root rot
Answer: C) Viral infections
Rationale: Viral infections often cause a characteristic mosaic pattern on the leaves of affected plants.

45. Which plant is commonly affected by rust diseases?
A) Corn
B) Wheat
C) Rice

D) Soybean

Answer: B) Wheat

Rationale: Wheat is particularly susceptible to various rust diseases caused by fungal pathogens.

46. What is the effect of high nitrogen levels on certain diseases?

A) It reduces disease incidence.
B) It increases disease susceptibility.
C) It has no effect.
D) It eliminates pathogens.

Answer: B) It increases disease susceptibility.

Rationale: Excess nitrogen can make plants more susceptible to certain diseases.

47. Which of the following is an effective method for managing downy mildew?

A) Excessive irrigation
B) Crop rotation with non-hosts
C) High nitrogen fertilization
D) Overcrowding

Answer: B) Crop rotation with non-hosts

Rationale: Rotating with non-host crops helps reduce the disease's incidence and spread.

48. What is the primary benefit of integrated pest management (IPM)?

A) Increases chemical pesticide use
B) Reduces overall pest and disease pressure sustainably
C) Requires extensive resources
D) Relies solely on biological control

Answer: B) Reduces overall pest and disease pressure sustainably

Rationale: IPM combines various management strategies to reduce pest and disease pressure effectively.

49. Which disease management strategy involves the use of natural predators?

A) Cultural control
B) Biological control
C) Chemical control
D) Mechanical control

Answer: B) Biological control

Rationale: Biological control employs natural enemies to manage pest and disease populations.

50. Which symptom is commonly associated with bacterial wilt in crops?

A) Leaf yellowing
B) Water-soaked lesions
C) Sudden wilting
D) Leaf curling

Answer: C) Sudden wilting

Rationale: Bacterial wilt causes rapid wilting of plants, often without prior symptoms.

51. What is the term for the stage in a pathogen's life cycle that can survive unfavorable conditions?

A) Pathogen
B) Spore
C) Host
D) Vector

Answer: B) Spore

Rationale: Spores allow pathogens to survive in dormant states until conditions are favorable for infection.

52. What is the effect of planting resistant crop varieties on disease incidence?

A) Increases disease severity

B) Reduces disease incidence
C) Has no effect
D) Promotes more severe outbreaks

Answer: B) Reduces disease incidence

Rationale: Resistant varieties are less susceptible to diseases, thus reducing overall incidence.

53. What is the primary symptom of a phosphorus deficiency in plants?

A) Leaf yellowing
B) Stunted growth and dark green foliage
C) Wilting
D) Necrosis

Answer: B) Stunted growth and dark green foliage

Rationale: Phosphorus deficiency typically causes stunted growth and darker foliage due to insufficient energy transfer.

54. What is the function of quarantine measures in agriculture?

A) Increase biodiversity
B) Prevent the introduction of new diseases
C) Promote monoculture
D) Encourage pest populations

Answer: B) Prevent the introduction of new diseases

Rationale: Quarantine measures help protect crops by preventing the entry of new pests and diseases.

55. Which of the following is a method to identify plant pathogens?

A) DNA sequencing
B) Visual inspection
C) Soil testing
D) Weather analysis

Answer: A) DNA sequencing

Rationale: DNA sequencing allows for precise identification of pathogens based on genetic material.

56. What is the significance of temperature in fungal diseases?

A) It has no impact.
B) It only affects bacterial diseases.
C) It can influence spore germination and growth rates.
D) It increases disease resistance.

Answer: C) It can influence spore germination and growth rates.

Rationale: Temperature affects the life cycle of fungi, influencing disease severity.

57. Which disease is caused by the fungus *Fusarium oxysporum*?

A) Powdery mildew
B) Fusarium wilt
C) Downy mildew
D) Bacterial blight

Answer: B) Fusarium wilt

Rationale: *Fusarium oxysporum* is known to cause wilt diseases in various crops.

58. Which of the following is a symptom of downy mildew?

A) White powdery spots on leaves

B) Yellowing of leaves and stunted growth
C) Greyish mold on leaves
D) Leaf curling and necrosis

Answer: C) Greyish mold on leaves

Rationale: Downy mildew is characterized by greyish or white fungal growth on the underside of leaves.

59. What role do soil-borne pathogens play in plant disease?

A) They increase crop yield.
B) They cause diseases in roots and lower plant parts.
C) They are beneficial organisms.
D) They only affect foliage.

Answer: B) They cause diseases in roots and lower plant parts.

Rationale: Soil-borne pathogens primarily infect roots, causing various diseases.

60. Which of the following diseases affects the stem and leaves of plants?

A) Root rot
B) Blight
C) Wilt
D) Leaf spot

Answer: B) Blight

Rationale: Blight diseases typically affect both stems and leaves, causing rapid tissue death.

61. What is a common symptom of nutrient deficiencies in plants?

A) Wilting
B) Stunted growth
C) Chlorosis
D) All of the above

Answer: D) All of the above

Rationale: Nutrient deficiencies can cause a range of symptoms, including wilting, stunted growth, and chlorosis.

62. Which of the following is a significant disease in the cultivation of sugarcane?

A) Fusarium wilt
B) Sugarcane mosaic virus
C) Downy mildew
D) Root rot

Answer: B) Sugarcane mosaic virus

Rationale: Sugarcane mosaic virus significantly impacts sugarcane production.

63. What is the main environmental factor that contributes to the spread of downy mildew?

A) Low humidity
B) High temperatures
C) High humidity
D) Bright sunlight

Answer: C) High humidity

Rationale: High humidity levels favor the spread of downy mildew and other fungal diseases.

64. Which of the following is a non-chemical method to manage pests and diseases?

A) Pesticides
B) Cultural practices

C) Fertilizers

D) Herbicides

Answer: B) Cultural practices

Rationale: Cultural practices involve strategies that do not use chemicals to manage pests and diseases.

65. What is the significance of maintaining plant diversity in agriculture?

A) Increases susceptibility to diseases

B) Enhances resilience to pests and diseases

C) Requires more resources

D) Decreases yield

Answer: B) Enhances resilience to pests and diseases

Rationale: Biodiversity can help prevent the spread of diseases by providing a range of genetic resources.

66. Which disease is caused by a combination of fungal and bacterial agents?

A) Leaf blight

B) Damping-off

C) Fusarium wilt

D) Soft rot

Answer: D) Soft rot

Rationale: Soft rot can be caused by both fungal and bacterial pathogens.

67. Which of the following diseases is a significant threat to banana production?

A) Rice blast

B) Banana bunchy top virus

C) Fusarium wilt

D) Bacterial wilt

Answer: B) Banana bunchy top virus

Rationale: Banana bunchy top virus severely affects banana plants, reducing yield.

68. What is a primary reason for the emergence of new plant diseases?

A) Improved agricultural practices

B) Climate change and globalization

C) Use of organic fertilizers

D) Increased biodiversity

Answer: B) Climate change and globalization

Rationale: Climate change and increased global trade can introduce new pathogens and expand their range.

69. Which management practice is crucial during wet seasons to control diseases?

A) Crop rotation

B) Mulching

C) Draining excess water

D) Irrigation

Answer: C) Draining excess water

Rationale: Proper drainage prevents waterlogging, which can exacerbate many plant diseases.

70. What role does genetic resistance play in sustainable agriculture?

A) It reduces pesticide use.

B) It increases disease severity.

C) It promotes monoculture.

D) It has no impact on disease management.

Answer: A) It reduces pesticide use.

Rationale: Genetic resistance helps manage diseases effectively, reducing the need for chemical interventions.

71. What is the primary cause of anthracnose in plants?

A) Bacteria

B) Fungi

C) Nematodes

D) Viruses

Answer: B) Fungi

Rationale: Anthracnose is a fungal disease that affects various plants, causing leaf and fruit lesions.

72. Which practice is effective in managing foliar diseases?

A) Overcrowding

B) Pruning and proper spacing

C) Excessive irrigation

D) High nitrogen application

Answer: B) Pruning and proper spacing

Rationale: Proper spacing and pruning enhance air circulation, reducing humidity and disease incidence.

73. What is the primary vector for the transmission of the tomato yellow leaf curl virus?

A) Aphids

B) Beetles

C) Nematodes

D) Fungi

Answer: A) Aphids

Rationale: Aphids are the primary vectors for transmitting the tomato yellow leaf curl virus.

74. What is the term for the symptoms observed on a plant due to a pathogen?

A) Disease cycle

B) Pathogenicity

C) Disease expression

D) Virulence

Answer: C) Disease expression

Rationale: Disease expression refers to the visible symptoms caused by a pathogen in a plant.

75. What environmental factor is critical for the development of fungal diseases?

A) Cold temperatures

B) Dry conditions

C) High humidity and warmth

D) Low light

Answer: C) High humidity and warmth

Rationale: Fungal diseases thrive in warm, humid conditions that promote spore germination.

76. Which of the following diseases is commonly associated with legumes?

A) Tomato blight

B) Pea wilt

C) Rice blast
D) Corn smut

Answer: B) Pea wilt

Rationale: Pea wilt is a common disease affecting legumes, caused by *Fusarium* species.

77. What is the main objective of using chemical fungicides?

A) Promote growth
B) Control fungal infections
C) Improve soil structure
D) Increase crop diversity

Answer: B) Control fungal infections

Rationale: Chemical fungicides are specifically designed to manage fungal diseases in crops.

78. Which disease is known to affect both the root and foliage of the plant?

A) Downy mildew
B) Bacterial wilt
C) Fusarium wilt
D) Damping-off

Answer: C) Fusarium wilt

Rationale: Fusarium wilt affects both root and foliage, leading to wilting symptoms.

79. Which of the following is a preventive measure against root rot?

A) Deep planting
B) Excessive irrigation
C) Good drainage practices
D) Overcrowding

Answer: C) Good drainage practices

Rationale: Ensuring good drainage reduces the risk of root rot diseases.

80. What is a typical symptom of crown gall disease?

A) Wilting
B) Galls on stems and roots
C) Leaf curling
D) Yellowing of leaves

Answer: B) Galls on stems and roots

Rationale: Crown gall disease is characterized by the formation of galls, or tumors, on the plant's stems and roots.

81. What is the main function of fungicides in plant disease management?

A) Increase nutrient absorption
B) Kill or inhibit fungal pathogens
C) Promote plant growth
D) Enhance soil fertility

Answer: B) Kill or inhibit fungal pathogens

Rationale: Fungicides are specifically designed to manage and control fungal diseases in crops.

82. Which of the following practices can help reduce the spread of viral diseases?

A) Crop rotation with the same crop
B) Use of resistant varieties

C) Overhead irrigation
D) Excessive fertilization

Answer: B) Use of resistant varieties

Rationale: Using resistant varieties can significantly reduce the incidence of viral infections in crops.

83. What type of pathogen is responsible for causing the disease known as black sigatoka in bananas?

A) Bacteria
B) Viruses
C) Fungi
D) Nematodes

Answer: C) Fungi

Rationale: Black sigatoka is caused by the fungal pathogen *Mycosphaerella fijiensis*.

84. Which disease is characterized by leaf spot lesions that can lead to defoliation?

A) Bacterial blight
B) Anthracnose
C) Fusarium wilt
D) Root rot

Answer: B) Anthracnose

Rationale: Anthracnose often manifests as leaf spot lesions that can result in significant defoliation.

85. What type of nematodes are commonly associated with root damage in crops?

A) Predatory nematodes
B) Plant-parasitic nematodes
C) Free-living nematodes
D) Fungal-feeding nematodes

Answer: B) Plant-parasitic nematodes

Rationale: Plant-parasitic nematodes, like root-knot nematodes, cause significant damage to roots.

86.What is a common symptom of powdery mildew?

A) Water-soaked lesions
B) White powdery spots on leaves
C) Galls on roots
D) Yellowing of leaves

Answer: B) White powdery spots on leaves

Rationale: Powdery mildew is characterized by a white, powdery fungal growth on leaf surfaces.

87. What is the primary vector for the spread of cucumber mosaic virus?

A) Aphids
B) Thrips
C) Beetles
D) Nematodes

Answer: A) Aphids

Rationale: Aphids are the main vectors that transmit cucumber mosaic virus between plants.

88. Which of the following is an effective cultural practice to manage diseases?

A) Continuous cropping of the same species
B) Proper sanitation and removal of infected plant debris
C) Over-fertilization

D) High-density planting

Answer: B) Proper sanitation and removal of infected plant debris

Rationale: Sanitation helps reduce the presence of pathogens and lowers disease incidence.

89. What symptom is typically associated with a nitrogen deficiency in plants?

A) Dark green leaves

B) Stunted growth and yellowing of older leaves

C) Wilting

D) Galls on roots

Answer: B) Stunted growth and yellowing of older leaves

Rationale: Nitrogen deficiency commonly causes yellowing of older leaves and overall stunting.

90.Which pathogen is known for causing late blight in potatoes?

A) *Phytophthora infestans*

B) *Fusarium oxysporum*

C) *Verticillium dahliae*

D) *Pythium* spp.

Answer: A) *Phytophthora infestans*

Rationale: *Phytophthora infestans* is the causative agent of late blight, leading to significant losses in potato crops.

91. **What is the best method to control bacterial diseases in plants?**

A) Chemical fungicides

B) Biological control agents

C) Soil solarization

D) Use of copper-based bactericides

Answer: D) Use of copper-based bactericides

Rationale: Copper-based bactericides are effective in managing bacterial infections in crops.

92. Which of the following diseases is caused by a soil-borne pathogen?

A) Downy mildew

B) Fusarium wilt

C) Powdery mildew

D) Viral infections

Answer: B) Fusarium wilt

Rationale: Fusarium wilt is caused by a soil-borne fungus that infects the plant through its roots.

93. What is the primary benefit of crop rotation in disease management?

A) Increases soil fertility

B) Prevents build-up of soil-borne pathogens

C) Reduces labor costs

D) Enhances pest populations

Answer: B) Prevents build-up of soil-borne pathogens

Rationale: Crop rotation disrupts the life cycle of pathogens, preventing their accumulation in the soil.

94. Which of the following diseases is associated with sudden wilting and yellowing of leaves?

A) Root rot

B) Bacterial wilt

C) Powdery mildew

D) Leaf spot

Answer: B) Bacterial wilt

Rationale: Bacterial wilt causes rapid wilting and yellowing due to the blockage of vascular tissues.

95. What management practice can help control downy mildew?

A) Overhead irrigation
B) Reducing humidity through proper spacing
C) Excessive nitrogen application
D) Planting susceptible varieties

Answer: B) Reducing humidity through proper spacing

Rationale: Proper spacing enhances air circulation and reduces humidity, making conditions less favorable for downy mildew.

96. **What type of disease results from the action of multiple pathogens?**

A) Monocyclic disease
B) Polycyclic disease
C) Complex disease
D) Systemic disease

Answer: C) Complex disease

Rationale: Complex diseases involve interactions between multiple pathogens affecting the host.

97. Which symptom is most indicative of leaf rust disease?

A) Dark spots on leaves
B) Orange or rust-colored pustules
C) Wilting and drooping
D) Leaf curling

Answer: B) Orange or rust-colored pustules

Rationale: Leaf rust is characterized by the appearance of rust-colored pustules on the leaf surface.

98. Which of the following is a common biological control agent against fungal diseases?

A) Bacillus thuringiensis
B) Trichoderma spp.
C) Pseudomonas syringae
D) Rhizobium spp.

Answer: B) Trichoderma spp.

Rationale: *Trichoderma* species are effective biocontrol agents that inhibit fungal pathogens.

99. What is the role of leaf litter in disease management?

A) Increase humidity
B) Provide habitat for pests
C) Suppress soil-borne pathogens
D) Promote weed growth

Answer: C) Suppress soil-borne pathogens

Rationale: Leaf litter can suppress pathogens by providing habitat for beneficial organisms.

100. What is the primary cause of root rot in many crops?

A) Excessive nitrogen
B) Poor soil drainage

C) Low humidity
D) High temperatures

Answer: B) Poor soil drainage

Rationale: Poor drainage leads to waterlogged conditions that favor root rot diseases caused by various pathogens.

G. Entomology

1. **What is the primary role of beneficial insects in agriculture?**
   A) Pest control
   B) Pollination
   C) Decomposition
   D) All of the above
   Answer: D) All of the above
   Rationale: Beneficial insects contribute to pest control, pollination, and nutrient recycling through decomposition.

2. What type of metamorphosis do most agricultural pests undergo?
   A) Ametabolous
   B) Hemimetabolous
   C) Holometabolous
   D) None of the above
   Answer: C) Holometabolous
   Rationale: Many agricultural pests, such as beetles and moths, undergo complete metamorphosis, involving egg, larva, pupa, and adult stages.

3. Which of the following is a method of biological control for pest management?
   A) Chemical pesticides
   B) Release of parasitoids
   C) Soil fumigation
   D) Crop rotation
   Answer: B) Release of parasitoids
   Rationale: Introducing parasitoids can help control pest populations naturally.

4. What is the primary purpose of insect traps in agriculture?
   A) Harvest insects
   B) Monitor pest populations
   C) Attract beneficial insects

D) Increase soil fertility

Answer: B) Monitor pest populations

Rationale: Traps are primarily used to assess pest levels and inform management decisions.

5. Which insect is known for causing significant damage to corn crops in the Philippines?

A) Cotton bollworm

B) Fall armyworm

C) Stem borer

D) Whitefly

Answer: C) Stem borer

Rationale: The stem borer is a notorious pest affecting corn, leading to reduced yield.

6. What is Integrated Pest Management (IPM)?

A) A chemical-only approach to pest control

B) A holistic approach combining various control methods

C) A method that uses only natural pesticides

D) None of the above

Answer: B) A holistic approach combining various control methods

Rationale: IPM integrates biological, cultural, and chemical methods for sustainable pest management.

7. Which insect order do butterflies and moths belong to?

A) Coleoptera

B) Lepidoptera

C) Diptera

D) Hymenoptera

Answer: B) Lepidoptera

Rationale: Butterflies and moths are classified under the order Lepidoptera.

8. What is a common symptom of aphid infestation in crops?

A) Wilting leaves

B) Honeydew secretion

C) Leaf curling

D) All of the above

Answer: D) All of the above

Rationale: Aphids can cause wilting, produce honeydew, and lead to leaf curling.

9. Which insect is a well-known vector of plant viruses?

A) Termite

B) Whitefly

C) Grasshopper

D) Ladybug

Answer: B) Whitefly

Rationale: Whiteflies are significant vectors for several plant viruses affecting crops.

10. What is the main function of insecticidal soaps?

A) Kill all insects

B) Control soft-bodied pests

C) Enhance plant growth

D) Improve soil health

Answer: B) Control soft-bodied pests

Rationale: Insecticidal soaps are effective against soft-bodied insects like aphids and mites.

11. Which beneficial insect is known for its role in pollination?

A) Ladybug

B) Honeybee

C) Lacewing
D) Parasitic wasp
Answer: B) Honeybee
Rationale: Honeybees are vital pollinators that contribute significantly to agricultural productivity.

12. What type of damage do root-feeding nematodes cause?
A) Foliar damage
B) Wilting and stunted growth
C) Leaf spots
D) Fruit rot
Answer: B) Wilting and stunted growth
Rationale: Root-feeding nematodes disrupt nutrient uptake, causing wilting and stunted growth.

13. Which of the following is a characteristic of the fruit fly pest?
A) It feeds on roots
B) It lays eggs in fruit
C) It is a beneficial insect
D) It only affects vegetables
Answer: B) It lays eggs in fruit
Rationale: Fruit flies lay eggs in ripening fruit, causing significant damage.

14. What is a significant factor contributing to the development of insect resistance to pesticides?
A) Genetic diversity
B) Overuse of the same pesticide
C) Climate change
D) Use of organic farming
Answer: B) Overuse of the same pesticide
Rationale: Repeated use of the same pesticide can select for resistant insect populations.

15. What is the primary role of parasitoid wasps in pest management?
A) Pollination
B) Feeding on nectar
C) Parasitizing pest insects
D) Soil aeration
Answer: C) Parasitizing pest insects
Rationale: Parasitoid wasps lay eggs inside pest insects, eventually leading to their death.

16. Which insect is a major pest of the coconut tree in the Philippines?
A) Coffee borer
B) Coconut rhinoceros beetle
C) Sugarcane borer
D) Rice weevil
Answer: B) Coconut rhinoceros beetle
Rationale: This beetle is a significant pest affecting coconut palms, leading to economic losses.

17. What is the impact of pesticide drift?
A) It only affects the target crop.
B) It can harm non-target plants and organisms.
C) It improves pest control efficiency.
D) It has no environmental effects.
Answer: B) It can harm non-target plants and organisms.
Rationale: Pesticide drift can negatively affect neighboring crops, beneficial insects, and the environment.

18. Which of the following insects is known for its role in biological control of aphids?
A) Green lacewing

B) Cockroach
C) Grasshopper
D) Beetle
Answer: A) Green lacewing
Rationale: Green lacewings feed on aphids and are beneficial for pest control.

19. What is the main consequence of monoculture in agriculture?
A) Increased biodiversity
B) Enhanced pest populations
C) Reduced soil fertility
D) Higher crop yields
Answer: B) Enhanced pest populations
Rationale: Monoculture can lead to increased pest outbreaks due to a lack of natural enemies.

20. Which insect is a common pest of vegetables in the Philippines?
A) Stink bug
B) Leaf miner
C) Both A and B
D) None of the above
Answer: C) Both A and B
Rationale: Both stink bugs and leaf miners are significant pests of various vegetables.

21. What is the significance of using pheromone traps in pest management?
A) To kill pests
B) To monitor pest populations
C) To attract beneficial insects
D) To improve soil health
Answer: B) To monitor pest populations
Rationale: Pheromone traps help in monitoring and managing pest populations by luring them.

22. Which insect is notorious for causing damage to citrus crops?
A) Coconut beetle
B) Asian citrus psyllid
C) Ant
D) Termite
Answer: B) Asian citrus psyllid
Rationale: The Asian citrus psyllid is a vector for Huanglongbing (citrus greening disease), affecting citrus crops.

23. What is the role of ladybugs in agriculture?
A) Pollinators
B) Pest predators
C) Soil aerators
D) Nutrient fixers
Answer: B) Pest predators
Rationale: Ladybugs are natural predators of aphids and other soft-bodied pests.

24. Which type of insect is a major pest of sugarcane?
A) Cotton bollworm

B) Sugarcane borer
C) Stink bug
D) Leafcutter ant
Answer: B) Sugarcane borer
Rationale: The sugarcane borer is a significant pest causing damage to sugarcane crops.

25. What is the impact of crop rotation on pest management?
A) It increases pest populations.
B) It has no effect on pests.
C) It disrupts pest life cycles.
D) It makes pest management more difficult.
Answer: C) It disrupts pest life cycles.
Rationale: Crop rotation can help break pest life cycles and reduce their populations.

26. Which pest is known for its ability to develop resistance to multiple insecticides?
A) Termite
B) Cockroach
C) Cotton bollworm
D) Honeybee
Answer: C) Cotton bollworm
Rationale: The cotton bollworm has developed resistance to various insecticides over time.

27. What is the primary cause of damage from locust swarms?
A) Feeding on leaves
B) Reproduction
C) Soil compaction
D) Habitat destruction
Answer: A) Feeding on leaves
Rationale: Locusts consume large quantities of vegetation, causing extensive damage to crops.

28. Which insect is known to be a vector of the bacterial wilt in tomatoes?
A) Thrips
B) Leafhoppers
C) Whiteflies
D) Aphids
Answer: B) Leafhoppers
Rationale: Leafhoppers are known to transmit bacterial wilt pathogens in tomatoes.

29. What is a characteristic symptom of a mealybug infestation?
A) Wilting leaves
B) Cotton-like wax on stems
C) Yellowing of leaves
D) Leaf drop
Answer: B) Cotton-like wax on stems
Rationale: Mealybugs produce a cotton-like wax covering, which is a characteristic sign of their presence.

30. Which pest is notorious for damaging rice crops through leaf feeding?
A) Rice weevil

B) Green leafhopper
C) Brown planthopper
D) All of the above
Answer: C) Brown planthopper
Rationale: The brown planthopper damages rice by feeding on leaves, affecting plant health and yield.

31. What is the main benefit of using trap crops?

A) Attract pests away from main crops
B) Improve soil health
C) Increase crop diversity
D) Enhance irrigation
Answer: A) Attract pests away from main crops
Rationale: Trap crops can divert pests from the main crops, reducing damage.

32. What is a common method to control fall armyworms?

A) Chemical pesticides
B) Biological control using natural enemies
C) Both A and B
D) None of the above
Answer: C) Both A and B
Rationale: Both chemical and biological methods can be used effectively to control fall armyworms.

33. Which insect is a common pest of the sweet potato crop?

A) Sweet potato weevil
B) Cabbage looper
C) Corn earworm
D) Thrips
Answer: A) Sweet potato weevil
Rationale: The sweet potato weevil is known to cause significant damage to sweet potato crops.

34. Which of the following is a significant pest of soybeans?

A) Green stink bug
B) Rice bug
C) Spider mite
D) All of the above
Answer: A) Green stink bug
Rationale: The green stink bug is a notable pest that feeds on soybean plants, affecting yield.

35. What is the primary method of pest management used in organic farming?

A) Chemical pesticides
B) Cultural practices and biological control
C) Monoculture
D) Genetic modification
Answer: B) Cultural practices and biological control
Rationale: Organic farming relies on cultural and biological methods rather than synthetic chemicals.

36. What is the role of entomopathogenic fungi in pest management?

A) They promote plant growth.
B) They are used to kill pests.

C) They improve soil fertility.
D) They enhance pollination.
Answer: B) They are used to kill pests.
Rationale: Entomopathogenic fungi infect and kill various insect pests, serving as a biological control agent.

37. What is a common method for monitoring pest populations in the field?
A) Soil testing
B) Visual inspections and traps
C) Irrigation management
D) Crop rotation
Answer: B) Visual inspections and traps
Rationale: Regular inspections and the use of traps help monitor pest levels and assess management needs.

38. Which insect is often referred to as a "sucking pest"?
A) Grasshopper
B) Beetle
C) Aphid
D) Butterfly
Answer: C) Aphid
Rationale: Aphids are known for sucking sap from plants, causing damage and potentially transmitting viruses.

39. What is a significant consequence of insect infestation on crops?
A) Improved crop quality
B) Reduced yields and quality
C) Increased soil fertility
D) Enhanced pollination
Answer: B) Reduced yields and quality
Rationale: Insect infestations often lead to lower crop yields and diminished quality.

40. What is the primary goal of pest scouting?
A) To apply pesticides
B) To monitor pest populations and inform management decisions
C) To increase crop diversity
D) To enhance soil health
Answer: B) To monitor pest populations and inform management decisions
Rationale: Pest scouting helps determine when and how to manage pests effectively.

41. Which insect is known for damaging stored grains?
A) Termite
B) Grain weevil
C) Green bug
D) Ladybug
Answer: B) Grain weevil
Rationale: Grain weevils are notorious for infesting and damaging stored grains.

42. What is a common cultural practice to manage insect pests?
A) Crop rotation

B) Applying chemical pesticides
C) Increasing irrigation
D) Monocropping
Answer: A) Crop rotation
Rationale: Crop rotation can disrupt pest life cycles and reduce populations.

43. Which insect is known for its role in degrading plant material?

A) Ladybug
B) Termite
C) Grasshopper
D) Butterfly
Answer: B) Termite
Rationale: Termites play a key role in decomposing plant material, contributing to nutrient cycling.

44. What is the primary benefit of using neem oil in pest management?

A) It repels all insects.
B) It disrupts the life cycle of pests.
C) It promotes plant growth.
D) It increases soil fertility.
Answer: B) It disrupts the life cycle of pests.
Rationale: Neem oil affects the growth and reproduction of pests, serving as a natural insecticide.

45. Which insect pest is known for feeding on the roots of various crops?

A) Grasshopper
B) Root-knot nematode
C) Leafcutter ant
D) Caterpillar
Answer: B) Root-knot nematode
Rationale: Root-knot nematodes are pests that damage plant roots, affecting growth and yield.

46. What is the main consequence of over-reliance on chemical pesticides?

A) Decreased pest resistance
B) Increased biodiversity
C) Development of resistant pest populations
D) Improved soil health
Answer: C) Development of resistant pest populations
Rationale: Overuse of pesticides can lead to pests developing resistance, making control more difficult.

47. Which insect is a key pollinator for many crops in the Philippines?

A) Butterfly
B) Honeybee
C) Moth
D) Ant
Answer: B) Honeybee
Rationale: Honeybees are critical for pollinating a wide variety of crops.

48. What is a characteristic feature of the leafcutter ant?

A) They lay eggs in soil.
B) They cut leaves to cultivate fungus.

C) They are nocturnal.
D) They have wings.
Answer: B) They cut leaves to cultivate fungus.
Rationale: Leafcutter ants are known for cutting and carrying leaves to their nests to grow fungus, which they eat.

49. Which insect pest affects tomato plants and causes leaf curl?
A) Whitefly
B) Fruit fly
C) Leafhopper
D) Termite
Answer: A) Whitefly
Rationale: Whiteflies can cause leaf curl and transmit viruses to tomato plants.

50. What is the role of parasitoid wasps in pest management?
A) Pollination
B) Feeding on nectar
C) Killing pest insects
D) Soil aeration
Answer: C) Killing pest insects
Rationale: Parasitoid wasps lay eggs inside host insects, leading to the host's death and helping control pest populations.

51. Which of the following insects can be beneficial for controlling scale insects?
A) Aphids
B) Ladybugs
C) Grasshoppers
D) Ants
Answer: B) Ladybugs
Rationale: Ladybugs are known to feed on scale insects, helping to manage their populations.

52. What is a common practice to prevent the spread of insect pests?
A) Allowing open access to fields
B) Implementing sanitation measures
C) Planting only one crop
D) Ignoring pest populations
Answer: B) Implementing sanitation measures
Rationale: Good sanitation practices help prevent the introduction and spread of insect pests.

53. What type of insect is the coffee borer?
A) Leaf pest
B) Root pest
C) Wood-boring pest
D) Soil pest
Answer: C) Wood-boring pest
Rationale: The coffee borer is a wood-boring pest that damages coffee plants.

54. Which method is often used to control pest populations in organic farming?
A) Genetically modified organisms

B) Natural predators
C) Synthetic pesticides
D) Monoculture
Answer: B) Natural predators
Rationale: Organic farming often relies on natural predators to manage pest populations.

55. What is a major threat to the health of bee populations?

A) Increased biodiversity
B) Habitat destruction
C) Abundance of flowers
D) Natural predators
Answer: B) Habitat destruction
Rationale: Habitat destruction significantly threatens bee populations by reducing their foraging resources.

56. Which insect is known for being a significant pest of the papaya plant?

A) Papaya fruit fly
B) Aphid
C) Termite
D) Leafcutter ant
Answer: A) Papaya fruit fly
Rationale: The papaya fruit fly lays eggs in the fruit, causing damage and reducing marketability.

57. What is the primary benefit of using organic insecticides?

A) They are more toxic to pests.
B) They are environmentally friendly.
C) They are cheaper than synthetic insecticides.
D) They are easier to apply.
Answer: B) They are environmentally friendly.
Rationale: Organic insecticides are less harmful to the environment and non-target organisms.

58. Which pest is commonly associated with wilting and yellowing of leaves in vegetables?

A) Stink bug
B) Spider mite
C) Aphid
D) Root-knot nematode
Answer: D) Root-knot nematode
Rationale: Root-knot nematodes can cause wilting and yellowing by damaging roots.

59. What is a significant consequence of pest-induced crop damage?

A) Higher market prices
B) Increased crop yield
C) Loss of farmer income
D) Improved plant quality
Answer: C) Loss of farmer income
Rationale: Crop damage from pests can lead to decreased yields and financial losses for farmers.

60. Which beneficial insect is known for its role in controlling aphid populations?

A) Honeybee
B) Ladybug

C) Termite
D) Grasshopper
Answer: B) Ladybug
Rationale: Ladybugs are natural predators of aphids, helping to keep their populations in check.

61. What is the primary role of pollinators in agriculture?
A) Pest control
B) Seed dispersal
C) Enhancing fruit and seed production
D) Soil aeration
Answer: C) Enhancing fruit and seed production
Rationale: Pollinators are crucial for the reproduction of many crops, leading to fruit and seed development.

62. Which insect pest is commonly found on leafy vegetables?
A) Leaf miner
B) Beetle
C) Stink bug
D) All of the above
Answer: D) All of the above
Rationale: Leafy vegetables can be affected by various pests, including leaf miners, beetles, and stink bugs.

63. What is the best strategy to manage the fall armyworm?
A) Use the same pesticide repeatedly
B) Rotate crops and implement cultural practices
C) Ignore the infestation
D) Plant only resistant varieties
Answer: B) Rotate crops and implement cultural practices
Rationale: Crop rotation and cultural practices help disrupt the life cycle of fall armyworms.

64. What is the main consequence of introducing non-native insect species into agriculture?
A) Improved biodiversity
B) Harm to native species
C) Enhanced crop production
D) Increased pollination
Answer: B) Harm to native species
Rationale: Non-native insects can disrupt ecosystems and outcompete native species, causing ecological imbalance.

65. Which insect is often used as a model organism in entomological research?
A) Honeybee
B) Fruit fly
C) Grasshopper
D) Termite
Answer: B) Fruit fly
Rationale: The fruit fly (*Drosophila melanogaster*) is widely used in genetic and developmental biology research.

66. What is the primary target of insect growth regulators (IGRs)?

A) Adult insects
B) Eggs and larvae
C) Soil organisms
D) Beneficial insects
Answer: B) Eggs and larvae
Rationale: IGRs disrupt the development of eggs and larvae, preventing them from maturing into adults.

67. What is a primary method for managing thrips populations?

A) Crop rotation
B) Chemical pesticides
C) Both A and B
D) Ignoring the problem
Answer: C) Both A and B
Rationale: Both cultural practices and chemical controls can be employed to manage thrips.

68. Which of the following pests is known to affect the yield of mangoes?

A) Mango weevil
B) Cotton bollworm
C) Armyworm
D) All of the above
Answer: A) Mango weevil
Rationale: The mango weevil specifically targets mango fruit, leading to reduced yields.

69. What is the primary effect of climate change on insect populations?

A) Decreased pest populations
B) Altered life cycles and distribution patterns
C) Increased biodiversity
D) None of the above
Answer: B) Altered life cycles and distribution patterns
Rationale: Climate change can affect insect behavior, life cycles, and geographical ranges.

70. What is a common sign of spider mite infestation?

A) Large holes in leaves
B) Webbing on leaves
C) Yellowing leaves
D) All of the above
Answer: B) Webbing on leaves
Rationale: Spider mites produce fine webs on leaves, which is a key indicator of their presence.

71. Which of the following insects can cause significant damage to fruit trees?

A) Fruit fly
B) Codling moth
C) Both A and B
D) None of the above
Answer: C) Both A and B
Rationale: Both fruit flies and codling moths can inflict serious damage on fruit trees.

72. What is the main ecological role of decomposer insects?

A) Pollination
B) Nutrient cycling

C) Pest control
D) Seed dispersal
Answer: B) Nutrient cycling
Rationale: Decomposer insects break down organic matter, recycling nutrients back into the soil.

73. Which insect pest is commonly associated with reduced fruit quality in grapes?
A) Leafcutter ant
B) Fruit fly
C) Aphid
D) All of the above
Answer: B) Fruit fly
Rationale: Fruit flies can significantly affect the quality and marketability of grapes.

74. What is the main advantage of using cover crops in pest management?
A) They prevent soil erosion.
B) They provide habitat for beneficial insects.
C) They increase pest populations.
D) Both A and B
Answer: D) Both A and B
Rationale: Cover crops can protect soil and provide refuge for beneficial insects, aiding in pest management.

75. Which insect is known as a major pest of rice in the Philippines?
A) Locust
B) Brown Planthopper
C) Termite
D) Aphid
Answer: B) Brown Planthopper
Rationale: The Brown Planthopper is a significant pest of rice, causing damage by feeding on plant sap and transmitting viruses.

76. What is the primary benefit of integrated pest management (IPM) in agriculture?
A) Increased chemical use
B) Reduced crop yields
C) Sustainable pest control
D) Higher costs
Answer: C) Sustainable pest control
Rationale: IPM emphasizes ecological balance and sustainability, reducing reliance on chemical pesticides.

77. Which of the following is a beneficial insect commonly used in biological control?
A) Ladybug
B) Cockroach
C) Armyworm
D) Cutworm
Answer: A) Ladybug

Rationale: Ladybugs are natural predators of aphids and other pests, making them beneficial for pest control.

78. What is the main disadvantage of relying heavily on chemical pesticides?

A) Increased crop diversity
B) Environmental pollution
C) Enhanced pest resistance
D) Both B and C
Answer: D) Both B and C
Rationale: Heavy use of chemical pesticides can lead to environmental damage and the development of resistant pest populations.

79. Which insect is known for causing the "bamboo borer" problem in the Philippines?

A) Rhinoceros beetle
B) Termite
C) Cossid moth
D) Weevil
Answer: C) Cossid moth
Rationale: The larvae of Cossid moths bore into bamboo, causing significant damage.

80. The presence of which insect indicates a healthy ecosystem?

A) Mosquito
B) Butterfly
C) Cockroach
D) Fruit fly
Answer: B) Butterfly
Rationale: Butterflies are sensitive to environmental changes and their presence often indicates a healthy ecosystem.

81. Which of the following is an effective method for managing the fall armyworm in corn?

A) Increased irrigation
B) Crop rotation
C) Use of synthetic fertilizers
D) Continuous planting
Answer: B) Crop rotation
Rationale: Crop rotation can disrupt the life cycle of the fall armyworm and reduce its population.

82. What type of insect is the coffee borer beetle?

A) Herbivore
B) Carnivore
C) Detritivore
D) Omnivore
Answer: A) Herbivore
Rationale: The coffee borer beetle feeds on coffee plants, making it a herbivore.

83. Which pest is known for damaging stored grains in the Philippines?

A) Grain weevil
B) Spider mite
C) Leafhopper
D) Whitefly
Answer: A) Grain weevil
Rationale: Grain weevils are notorious for infesting and damaging stored grains.

84. What is the primary function of pollinators in agriculture?

A) Pest control
B) Seed dispersal
C) Fertilization
D) Soil aeration
Answer: C) Fertilization
Rationale: Pollinators facilitate the fertilization of flowering plants, which is crucial for fruit and seed production.

85. Which of the following is an ecological impact of insect pests?
A) Enhanced biodiversity
B) Soil erosion
C) Disease transmission
D) Increased water retention
Answer: C) Disease transmission
Rationale: Insect pests can act as vectors for diseases, affecting both plants and animals.

86. What insect is primarily responsible for the spread of the cacao pod borer disease?
A) Midge
B) Leafcutter ant
C) Cocoa pod borer
D) Thrips
Answer: C) Cocoa pod borer
Rationale: The cocoa pod borer directly infests cacao pods, leading to significant losses in production.

87. Which practice can help reduce the population of the whitefly?
A) Monoculture planting
B) Use of insect nets
C) Excessive watering
D) Chemical spraying
Answer: B) Use of insect nets
Rationale: Insect nets can physically block whiteflies from reaching crops, thereby reducing their population.

88. The red palm weevil primarily affects which type of plant?
A) Rice
B) Coconut
C) Corn
D) Sugarcane
Answer: B) Coconut
Rationale: The red palm weevil is a significant pest of coconut palms, causing damage to the tree's structure.

89. Which of the following is a characteristic of pest-resistant plant varieties?
A) Higher yield potential
B) Increased vulnerability
C) Requires more water
D) Shorter lifespan
Answer: A) Higher yield potential

Rationale: Pest-resistant varieties can reduce losses due to pest damage, potentially leading to higher yields.

90. Which natural enemy is used to control aphid populations?

A) Parasitic wasps
B) Lacewing larvae
C) Both A and B
D) Ladybugs only
Answer: C) Both A and B
Rationale: Both parasitic wasps and lacewing larvae are effective predators of aphids.

91. Which insect is known for causing damage to sugarcane crops?

A) Stemborer
B) Ant
C) Butterfly
D) Grasshopper
Answer: A) Stemborer
Rationale: Stemborers tunnel into the sugarcane stalks, causing significant damage.

92. What role do entomopathogenic fungi play in agriculture?

A) Promote plant growth
B) Control pest populations
C) Decompose organic matter
D) Fix nitrogen
Answer: B) Control pest populations
Rationale: Entomopathogenic fungi infect and kill insect pests, serving as a biological control method.

93. Which pest is known to affect the production of mangoes in the Philippines?

A) Mango weevil
B) Fruit fly
C) Leafcutter ant
D) Both A and B
Answer: D) Both A and B
Rationale: Both the mango weevil and fruit fly are significant pests of mango trees, impacting fruit quality and yield.

94. The term "IPM" stands for what in the context of pest management?

A) Intensive Pest Management
B) Integrated Pest Management
C) Insect Pest Monitoring
D) Intermittent Pest Management
Answer: B) Integrated Pest Management
Rationale: IPM is a sustainable approach to managing pests using a combination of methods.

95. Which insect is a common vector of plant viruses?

A) Grasshopper
B) Aphid
C) Ant
D) Fly
Answer: B) Aphid
Rationale: Aphids are well-known for transmitting various plant viruses as they feed on sap.

96. Which of the following is an example of a cultural control method?

A) Spraying pesticides
B) Crop rotation
C) Using insect traps
D) Introducing natural predators
Answer: B) Crop rotation
Rationale: Crop rotation alters the habitat and life cycles of pests, reducing their populations.

97. The use of neem oil in agriculture is primarily for what purpose?

A) Fertilization
B) Pest repellent
C) Irrigation
D) Soil amendment
Answer: B) Pest repellent
Rationale: Neem oil is derived from the neem tree and is known for its insect-repelling properties.

98. What is a significant impact of the use of invasive insect species in agriculture?

A) Improved crop yield
B) Enhanced biodiversity
C) Crop damage and economic loss
D) Pest suppression
Answer: C) Crop damage and economic loss
Rationale: Invasive insect species can disrupt local ecosystems and cause significant harm to crops.

99. Which practice can help in monitoring pest populations effectively?

A) Random spraying
B) Regular scouting and trapping
C) Ignoring pest signs
D) Over-fertilization
Answer: B) Regular scouting and trapping
Rationale: Regular monitoring allows farmers to identify pest populations early and take appropriate action.

100. Which insect is known as a major pest of rice in the Philippines?

A) Fruit fly
B) Brown planthopper
C) Diamondback moth
D) Leafcutter ant
Answer: B) Brown planthopper
Rationale: The brown planthopper is a significant pest of rice, causing damage and transmitting viruses.

H. Agricultural Economics

1. **What is the primary goal of agricultural economics?**
   A) To maximize crop yields
   B) To analyze resource allocation in agriculture
   C) To develop new farming technologies
   D) To promote organic farming
   Answer: B) To analyze resource allocation in agriculture
   Rationale: Agricultural economics focuses on how resources are allocated and managed within the agricultural sector.
2. **What is a common measure of farm productivity?**
   A) Total land area
   B) Yield per hectare
   C) Number of livestock
   D) Total revenue
   Answer: B) Yield per hectare
   Rationale: Yield per hectare is a key indicator of productivity in agriculture.
3. **Which sector contributes the most to the Philippines' agricultural GDP?**
   A) Livestock
   B) Fisheries
   C) Crops
   D) Forestry
   Answer: C) Crops
   Rationale: The crop sector is the largest contributor to agricultural GDP in the Philippines.
4. **What is the primary purpose of the Philippine Crop Insurance Corporation (PCIC)?**
   A) To provide loans to farmers

B) To insure crops against losses
C) To promote crop diversification
D) To manage irrigation systems
Answer: B) To insure crops against losses
Rationale: PCIC offers crop insurance to protect farmers from losses due to natural disasters and other risks.

5. What does "food security" refer to?
A) The availability of agricultural land
B) The affordability and accessibility of food
C) The quality of food produced
D) The production capacity of farms
Answer: B) The affordability and accessibility of food
Rationale: Food security is about ensuring that all people have access to sufficient, safe, and nutritious food.

6. What is the main purpose of agricultural subsidies?
A) To increase food prices
B) To support farmers' income
C) To discourage farming
D) To promote exports
Answer: B) To support farmers' income
Rationale: Subsidies are often used to help stabilize farmers' incomes and support agricultural production.

7. Which economic concept describes the responsiveness of demand to changes in price?
A) Supply
B) Elasticity
C) Market equilibrium
D) Opportunity cost
Answer: B) Elasticity
Rationale: Elasticity measures how much demand changes in response to price changes.

8. What is a major challenge facing smallholder farmers in the Philippines?
A) High access to credit
B) Advanced technology
C) Limited access to markets
D) Large farm sizes
Answer: C) Limited access to markets
Rationale: Smallholder farmers often struggle with accessing markets to sell their produce.

9. Which of the following is a common cause of agricultural market failure?
A) Perfect competition
B) Externalities
C) Government regulations

D) Seasonal crops

Answer: B) Externalities

Rationale: Externalities, such as pollution from farming practices, can lead to market failures.

10. What role do cooperatives play in the agricultural sector?

A) They increase competition among farmers

B) They provide a platform for collective bargaining

C) They eliminate the need for government support

D) They focus solely on export markets

Answer: B) They provide a platform for collective bargaining

Rationale: Cooperatives enable farmers to work together to improve their bargaining power and access to resources.

11. Which crop is known as the "backbone" of Philippine agriculture?

A) Corn

B) Rice

C) Sugarcane

D) Coconut

Answer: B) Rice

Rationale: Rice is a staple food in the Philippines and is central to the country's agricultural economy.

12. What is the primary aim of agrarian reform in the Philippines?

A) To increase agricultural exports

B) To redistribute land to farmers

C) To modernize farming techniques

D) To promote urbanization

Answer: B) To redistribute land to farmers

Rationale: Agrarian reform aims to provide landless farmers access to land for cultivation.

13. Which economic principle explains the trade-offs in resource allocation?

A) Law of Demand

B) Opportunity Cost

C) Comparative Advantage

D) Market Equilibrium

Answer: B) Opportunity Cost

Rationale: Opportunity cost refers to the value of the next best alternative foregone when making a choice.

14. What is the function of the Department of Agriculture (DA) in the Philippines?

A) To manage agricultural land

B) To formulate policies for agricultural development

C) To directly produce crops

D) To regulate food prices

Answer: B) To formulate policies for agricultural development

Rationale: The DA develops policies to enhance agricultural productivity and sustainability.

15. Which factor is most important in determining agricultural productivity?

A) Weather conditions

B) Soil fertility

C) Technological innovation

D) Labor availability

Answer: C) Technological innovation

Rationale: Technological advancements can significantly boost productivity in agriculture.

16. What does "agribusiness" refer to?

A) Non-profit farming initiatives

B) All business activities related to agriculture

C) Organic farming practices

D) Small-scale farming operations

Answer: B) All business activities related to agriculture

Rationale: Agribusiness encompasses a wide range of activities, including production, processing, and distribution of agricultural products.

17. Which policy aims to protect local farmers from foreign competition?

A) Liberalization

B) Import tariffs

C) Subsidies

D) Export incentives

Answer: B) Import tariffs

Rationale: Import tariffs increase the cost of foreign goods, making local products more competitive.

18. **Which of the following is a key indicator of agricultural development?**

A) Urban migration

B) Agricultural GDP growth

C) Decrease in food production

D) Increased reliance on imports

Answer: B) Agricultural GDP growth

Rationale: Growth in agricultural GDP indicates improvements in the agricultural sector.

19. What is the term for the practice of growing different crops in succession on the same land?

A) Monoculture

B) Crop rotation

C) Intercropping

D) Agroforestry

Answer: B) Crop rotation

Rationale: Crop rotation helps improve soil fertility and control pests.

20. Which of the following best describes "sustainable agriculture"?

A) Agriculture that maximizes short-term profits

B) Farming practices that do not deplete natural resources

C) Industrial agriculture techniques

D) Agriculture focused solely on export

Answer: B) Farming practices that do not deplete natural resources

Rationale: Sustainable agriculture aims to maintain ecological balance and conserve resources for future generations.

21. What is the primary reason for promoting organic farming in the Philippines?

A) To increase chemical pesticide use

B) To ensure food safety and environmental protection

C) To maximize short-term profits

D) To focus on export markets

Answer: B) To ensure food safety and environmental protection

Rationale: Organic farming minimizes harmful inputs and supports a healthier environment.

22. What role does the Bureau of Agricultural Statistics (BAS) play?

A) Regulates prices of agricultural products

B) Collects and analyzes agricultural data

C) Provides loans to farmers

D) Implements agrarian reform

Answer: B) Collects and analyzes agricultural data

Rationale: BAS provides essential statistics that inform agricultural policy and planning.

23. Which term describes the financial resources available to farmers for investment?

A) Capital

B) Labor

C) Land

D) Technology

Answer: A) Capital

Rationale: Capital refers to financial assets that can be used to fund agricultural activities.

24. What is the main benefit of agricultural diversification?

A) Higher market risks

B) Reduced vulnerability to market fluctuations

C) Increased reliance on single crops

D) Higher dependency on imports

Answer: B) Reduced vulnerability to market fluctuations

Rationale: Diversifying crops can protect farmers from losses due to price changes or crop failures.

25. What is the primary source of income for most rural households in the Philippines?

A) Agricultural wages

B) Remittances

C) Government subsidies

D) Tourism

Answer: A) Agricultural wages

Rationale: Many rural households depend on income from agricultural activities.

26. Which institution primarily provides credit to farmers in the Philippines?

A) Land Bank of the Philippines

B) Philippine National Bank

C) Department of Agriculture

D) Cooperative Development Authority

Answer: A) Land Bank of the Philippines

Rationale: The Land Bank specializes in providing financial services to the agricultural sector.

27. What does the term "value chain" refer to in agriculture?

A) The sequence of processes involved in producing a product

B) The cost of inputs used in farming

C) The geographical area of farming

D) The market price of agricultural goods

Answer: A) The sequence of processes involved in producing a product

Rationale: The value chain encompasses all activities from production to marketing, adding value at each stage.

28. Which of the following is a government program aimed at improving rice production?

A) Rice Tariffication Law

B) Comprehensive Agrarian Reform Program (CARP)

C) Kadiwa ni Ani at Kita

D) Philippine Rural Development Project

Answer: A) Rice Tariffication Law

Rationale: This law aims to stabilize rice supply and price through the liberalization of rice imports.

29. What is the primary function of the Agricultural Credit Policy Council (ACPC)?

A) To provide land to farmers

B) To develop agricultural credit policies

C) To implement irrigation projects

D) To manage agricultural statistics

Answer: B) To develop agricultural credit policies

Rationale: ACPC focuses on formulating policies that facilitate access to credit for farmers.

30. **Which agricultural product is primarily exported from the Philippines?**

A) Rice

B) Pineapple

C) Corn

D) Wheat

Answer: B) Pineapple

Rationale: The Philippines is one of the top exporters of pineapple, particularly to international markets.

31. What is the term for the practice of growing two or more crops in the same space?

A) Crop rotation

B) Monocropping

C) Intercropping

D) Agroforestry

Answer: C) Intercropping

Rationale: Intercropping can enhance productivity and resource use efficiency.

32. What is a common economic effect of climate change on agriculture?

A) Stable crop yields

B) Increased pest resistance

C) Crop yield variability

D) Decreased rainfall

Answer: C) Crop yield variability

Rationale: Climate change can lead to unpredictable weather patterns, affecting crop yields.

33. Which of the following is a characteristic of the Philippine agricultural labor force?

A) High levels of mechanization

B) Young workforce

C) Aging farmers
D) Gender balance
Answer: C) Aging farmers
Rationale: Many farmers in the Philippines are aging, which poses challenges for agricultural sustainability.

34. What is the role of the Philippine Center for Postharvest Development and Mechanization (PhilMech)?
A) To provide financial assistance to farmers
B) To promote mechanization and improve postharvest practices
C) To regulate agricultural prices
D) To manage irrigation systems
Answer: B) To promote mechanization and improve postharvest practices
Rationale: PhilMech focuses on enhancing the efficiency of agricultural production and postharvest handling.

35. What is the term for the price at which the quantity of a product supplied equals the quantity demanded?
A) Market price
B) Equilibrium price
C) Floor price
D) Ceiling price
Answer: B) Equilibrium price
Rationale: The equilibrium price balances supply and demand in a market.

36. **Which of the following is a direct impact of globalization on Philippine agriculture?**
A) Decreased competition from imports
B) Increased market access for farmers
C) Reduced exposure to international markets
D) Isolation from global agricultural trends
Answer: B) Increased market access for farmers
Rationale: Globalization can open up new markets for Filipino agricultural products.

37. What is the primary focus of the Philippine Rural Development Project (PRDP)?
A) Urban agriculture
B) Enhancing rural infrastructure and livelihoods
C) Promoting monoculture
D) Exporting agricultural products
Answer: B) Enhancing rural infrastructure and livelihoods
Rationale: PRDP aims to improve rural infrastructure to boost agricultural productivity and incomes.

38. Which of the following factors affects the demand for agricultural products?
A) Consumer income
B) Prices of substitutes
C) Consumer preferences
D) All of the above
Answer: D) All of the above
Rationale: Demand is influenced by various factors, including income, prices of related goods, and consumer preferences.

39. What is the term for the practice of rotating grazing areas for livestock?
A) Overgrazing

B) Rangeland management
C) Pasture rotation
D) Monoculture
Answer: C) Pasture rotation
Rationale: Pasture rotation helps maintain soil health and prevent overgrazing.

40. Which agricultural policy aims to improve farmers' incomes through price support?
A) Trade liberalization
B) Price stabilization program
C) Deregulation
D) Land reform
Answer: B) Price stabilization program
Rationale: Price stabilization helps protect farmers from volatile market prices.

41. What is the economic term for the loss of potential gain from other alternatives when one alternative is chosen?
A) Cost-benefit analysis
B) Opportunity cost
C) Marginal cost
D) Market failure
Answer: B) Opportunity cost
Rationale: Opportunity cost quantifies the value of the next best alternative when a decision is made.

42. Which factor is crucial for determining the pricing of agricultural goods?
A) Production costs
B) Climate
C) Land ownership
D) Availability of water
Answer: A) Production costs
Rationale: Production costs directly influence how prices are set for agricultural products.

43. What does "agricultural productivity" refer to?
A) The amount of labor used in farming
B) The efficiency of production in agriculture
C) The total area under cultivation
D) The number of farmers in a region
Answer: B) The efficiency of production in agriculture
Rationale: Agricultural productivity measures how effectively resources are used to produce crops.

44. What is the impact of land tenure security on agricultural development?
A) It decreases investment in farming
B) It encourages long-term investment and productivity
C) It leads to land grabbing
D) It has no significant impact
Answer: B) It encourages long-term investment and productivity
Rationale: Secure land tenure motivates farmers to invest in their land and improve productivity.

45. Which of the following best defines "comparative advantage"?
A) The ability to produce a good at a lower opportunity cost than others
B) The ability to produce more goods than competitors

C) The advantage of having more resources
D) The dominance of a particular market
Answer: A) The ability to produce a good at a lower opportunity cost than others
Rationale: Comparative advantage encourages specialization and trade.

46. What is the purpose of the Agricultural Competitiveness Enhancement Fund (ACEF)?
A) To reduce import tariffs
B) To provide financial assistance to agricultural projects
C) To promote urban agriculture
D) To manage agricultural statistics
Answer: B) To provide financial assistance to agricultural projects
Rationale: ACEF aims to enhance the competitiveness of the agricultural sector through funding.

47. Which type of agriculture focuses on producing crops primarily for sale?
A) Subsistence agriculture
B) Commercial agriculture
C) Organic agriculture
D) Integrated farming
Answer: B) Commercial agriculture
Rationale: Commercial agriculture is geared towards producing goods for market sale rather than personal consumption.

48. What is a significant factor contributing to rural poverty in the Philippines?
A) High levels of education
B) Lack of access to credit and resources
C) Abundance of agricultural land
D) Strong agricultural policies
Answer: B) Lack of access to credit and resources
Rationale: Limited access to financial resources hinders farmers' ability to invest and improve their livelihoods.

49. Which of the following is an example of a negative externality in agriculture?
A) Increased food production
B) Soil erosion from over-farming
C) Higher crop prices
D) Improved rural infrastructure
Answer: B) Soil erosion from over-farming
Rationale: Soil erosion is a negative consequence of certain agricultural practices that affects the environment.

50. What is the main objective of food marketing programs?
A) To restrict food production
B) To increase food prices
C) To improve market access for farmers
D) To eliminate competition
Answer: C) To improve market access for farmers
Rationale: Food marketing programs aim to help farmers reach more consumers and increase sales.

51. What is the significance of agricultural research and development (R&D)?

A) It focuses solely on crop yields
B) It promotes outdated practices
C) It drives innovation and enhances productivity
D) It reduces investment in agriculture
Answer: C) It drives innovation and enhances productivity
Rationale: R&D is crucial for developing new technologies and practices that improve agricultural outcomes.

52. What is the impact of high-interest rates on agricultural investment?
A) It encourages more borrowing
B) It discourages investment in farming
C) It has no effect
D) It increases agricultural output
Answer: B) It discourages investment in farming
Rationale: High-interest rates can make borrowing expensive, deterring farmers from investing.

53. Which term describes the risk of crop failure due to environmental factors?
A) Market risk
B) Production risk
C) Financial risk
D) Price risk
Answer: B) Production risk
Rationale: Production risk refers to uncertainties in agricultural production due to factors like weather and pests.

54. What is the role of the Food and Agriculture Organization (FAO) in the Philippines?
A) To regulate food prices
B) To support food security initiatives
C) To implement land reforms
D) To provide loans to farmers
Answer: B) To support food security initiatives
Rationale: FAO works to improve food security and agricultural development globally and locally.

55. What is the main focus of rural development programs in the Philippines?
A) Urbanization
B) Improving the quality of life in rural areas
C) Reducing agricultural production
D) Increasing imports of agricultural products
Answer: B) Improving the quality of life in rural areas
Rationale: Rural development programs aim to enhance living standards and economic opportunities in rural communities.

56. Which of the following is a consequence of land degradation in agriculture?
A) Increased crop yields
B) Reduced food security
C) Improved soil fertility
D) Higher farmer incomes
Answer: B) Reduced food security
Rationale: Land degradation negatively impacts agricultural productivity and food availability.

57. What is a key characteristic of subsistence agriculture?
A) High market orientation

B) Production for household consumption
C) Extensive use of technology
D) Large-scale farming operations
Answer: B) Production for household consumption
Rationale: Subsistence agriculture primarily focuses on producing food for the farmer's own family.

58. Which of the following strategies can enhance resilience in agriculture?
A) Monoculture farming
B) Diversification of crops
C) Reduced investment in R&D
D) Increased reliance on chemical inputs
Answer: B) Diversification of crops
Rationale: Diversifying crops can help mitigate risks and improve resilience to environmental changes.

59. What is the primary function of agricultural extension services?
A) To provide legal support to farmers
B) To deliver education and resources to farmers
C) To manage agricultural subsidies
D) To regulate food safety
Answer: B) To deliver education and resources to farmers
Rationale: Agricultural extension services offer training and support to help farmers improve their practices.

60. Which policy aims to stabilize prices for agricultural commodities?
A) Free trade agreements
B) Price support programs
C) Deregulation
D) Export bans
Answer: B) Price support programs
Rationale: Price support programs are designed to maintain stable prices for agricultural products.

61. What is the economic impact of high unemployment rates in rural areas?
A) Increased agricultural productivity
B) Reduced household incomes
C) Greater investment in farming
D) Enhanced food security
Answer: B) Reduced household incomes
Rationale: High unemployment typically leads to lower incomes, affecting purchasing power and food security.

62. Which of the following is a common method to assess agricultural productivity?
A) Cost-benefit analysis
B) Soil testing
C) Yield comparison
D) Land surveys
Answer: C) Yield comparison
Rationale: Comparing yields provides a direct measure of productivity across different farms or practices.

63. What does "land use planning" involve in the context of agriculture?

A) Managing urban development
B) Allocating land for different agricultural activities
C) Restricting farming practices
D) Increasing land taxes
Answer: B) Allocating land for different agricultural activities
Rationale: Effective land use planning optimizes land allocation for various agricultural purposes.

64. Which of the following is a potential benefit of agroforestry?
A) Increased soil erosion
B) Enhanced biodiversity
C) Lower crop yields
D) Higher dependence on pesticides
Answer: B) Enhanced biodiversity
Rationale: Agroforestry systems promote biodiversity and can improve ecosystem health.

65. What does the term "agricultural value addition" refer to?
A) The total cost of production
B) Enhancing the value of raw agricultural products through processing
C) Reducing agricultural exports
D) Increasing the size of farms
Answer: B) Enhancing the value of raw agricultural products through processing
Rationale: Value addition increases the market price and demand for agricultural products.

66. What is a primary goal of food safety regulations?
A) To increase food prices
B) To ensure the safety of food for consumers
C) To limit agricultural production
D) To promote unhealthy eating
Answer: B) To ensure the safety of food for consumers
Rationale: Food safety regulations protect consumers from foodborne illnesses and unsafe products.

67. Which of the following factors can lead to food price inflation?
A) Increased agricultural production
B) Supply chain disruptions
C) Higher agricultural subsidies
D) Improved transportation
Answer: B) Supply chain disruptions
Rationale: Disruptions in the supply chain can reduce food availability, leading to price increases.

68. What is the role of the National Food Authority (NFA)?
A) To regulate agricultural exports
B) To ensure stable supply and price of rice
C) To implement agrarian reform
D) To provide technical assistance to farmers
Answer: B) To ensure stable supply and price of rice
Rationale: The NFA focuses on stabilizing rice supply and prices to support food security.

69. Which of the following is a challenge of implementing agricultural technology?
A) Increased efficiency
B) High initial costs

C) Improved productivity
D) Enhanced crop quality
Answer: B) High initial costs
Rationale: The cost of implementing new technologies can be a barrier for many farmers.

70. What is the primary purpose of agricultural trade policies?
A) To limit imports of agricultural goods
B) To promote exports and enhance competitiveness
C) To reduce agricultural productivity
D) To control food prices
Answer: B) To promote exports and enhance competitiveness
Rationale: Trade policies are designed to improve market access and competitiveness for agricultural products.

71. Which crop is most affected by fluctuating global prices?
A) Rice
B) Corn
C) Coffee
D) Sweet potatoes
Answer: C) Coffee
Rationale: Coffee is heavily influenced by global market dynamics and price fluctuations.

72. What is the effect of inflation on farmers' purchasing power?
A) It increases purchasing power
B) It has no effect
C) It decreases purchasing power
D) It only affects urban consumers
Answer: C) It decreases purchasing power
Rationale: Inflation increases prices, reducing the ability of farmers to purchase inputs.

73. Which term describes the practice of using a single crop variety over time?
A) Monocropping
B) Polyculture
C) Biodiversity
D) Intercropping
Answer: A) Monocropping
Rationale: Monocropping involves cultivating the same crop on the same land for consecutive seasons.

74. What is the main benefit of organic farming?
A) Higher pesticide use
B) Improved soil health and reduced chemical residues
C) Increased dependency on synthetic fertilizers
D) Higher water usage
Answer: B) Improved soil health and reduced chemical residues
Rationale: Organic farming practices aim to enhance soil health and minimize environmental impact.

75. Which of the following is an example of an agricultural cooperative?
A) A private farm
B) A farmer's market

C) A group of farmers pooling resources for mutual benefit
D) A government agency
Answer: C) A group of farmers pooling resources for mutual benefit
Rationale: Agricultural cooperatives allow farmers to share resources, reduce costs, and improve market access.

76. What is the term for the practice of combining crop and livestock production?
A) Integrated farming
B) Monoculture
C) Agroforestry
D) Hydroponics
Answer: A) Integrated farming
Rationale: Integrated farming systems combine crops and livestock to optimize resource use and sustainability.

77. Which of the following is a potential advantage of genetically modified organisms (GMOs) in agriculture?
A) Reduced crop yields
B) Increased resistance to pests and diseases
C) Increased reliance on traditional farming methods
D) Higher costs of production
Answer: B) Increased resistance to pests and diseases
Rationale: GMOs can be engineered for traits that enhance resilience and productivity.

78. What is the main purpose of agricultural insurance?
A) To eliminate all agricultural risks
B) To provide financial protection against losses
C) To increase premiums for farmers
D) To guarantee profits for farmers
Answer: B) To provide financial protection against losses
Rationale: Agricultural insurance helps farmers mitigate risks associated with crop failures and adverse events.

79. What is the role of cooperatives in supporting small farmers?
A) To increase competition among farmers
B) To provide access to markets and resources
C) To reduce collective bargaining power
D) To eliminate subsidies
Answer: B) To provide access to markets and resources
Rationale: Cooperatives help small farmers by enabling them to pool resources and access better markets.

80. Which agricultural practice involves planting crops in rows with wide spaces between them?
A) Intercropping
B) Monocropping
C) Row cropping
D) Cover cropping
Answer: C) Row cropping
Rationale: Row cropping allows for easier management of crops and can improve yields.

81. What is the significance of crop diversification?

A) It increases market risk
B) It reduces resilience to market changes
C) It enhances food security and farm income
D) It complicates farming practices
Answer: C) It enhances food security and farm income
Rationale: Diversification can stabilize income and provide food security by reducing dependence on a single crop.

82. What does the term "sustainable agriculture" refer to?
A) Farming practices that do not consider environmental impacts
B) Agricultural practices that maintain productivity without depleting resources
C) The use of only organic fertilizers
D) Maximizing production at any cost
Answer: B) Agricultural practices that maintain productivity without depleting resources
Rationale: Sustainable agriculture seeks to balance productivity with environmental health.

83. What is a common challenge faced by smallholder farmers?
A) Access to modern technology
B) Excessive land size
C) High levels of income
D) Sufficient market access
Answer: A) Access to modern technology
Rationale: Smallholder farmers often struggle to access the latest technologies and practices.

84. What is the main objective of crop insurance?
A) To increase crop production
B) To provide financial coverage against crop losses
C) To eliminate pests
D) To ensure market prices
Answer: B) To provide financial coverage against crop losses
Rationale: Crop insurance protects farmers from financial losses due to crop failures.

85. Which of the following can negatively affect soil health?
A) Crop rotation
B) Organic farming
C) Over-reliance on chemical fertilizers
D) Cover cropping
Answer: C) Over-reliance on chemical fertilizers
Rationale: Excessive use of chemical fertilizers can lead to soil degradation and nutrient depletion.

86. What is the primary goal of food security programs?
A) To increase agricultural exports
B) To ensure all individuals have access to sufficient food
C) To promote urbanization
D) To eliminate smallholder farming
Answer: B) To ensure all individuals have access to sufficient food
Rationale: Food security programs aim to prevent hunger and ensure everyone has access to food.

87. Which of the following is a potential benefit of precision agriculture?
A) Decreased efficiency
B) Increased input costs

C) Enhanced resource management
D) Reduced crop yields
Answer: C) Enhanced resource management
Rationale: Precision agriculture allows for better management of resources, leading to increased efficiency and productivity.

88. What does "sustainable land management" involve?
A) Depleting natural resources
B) Balancing land use with environmental conservation
C) Expanding urban development
D) Maximizing agricultural output at all costs
Answer: B) Balancing land use with environmental conservation
Rationale: Sustainable land management aims to protect resources while allowing for productive use.

89.. Which of the following is a disadvantage of relying heavily on irrigation?
A) Increased crop yields
B) Soil salinization
C) Improved crop resilience
D) Enhanced agricultural productivity
Answer: B) Soil salinization
Rationale: Heavy irrigation can lead to salt accumulation in the soil, adversely affecting crop health.

.

90. What is the significance of farmer field schools?
A) They focus solely on traditional practices
B) They provide a platform for hands-on learning and knowledge sharing
C) They restrict farmer participation
D) They limit access to resources
Answer: B) They provide a platform for hands-on learning and knowledge sharing
Rationale: Farmer field schools facilitate education and collaboration among farmers.

91. Which of the following is a major factor contributing to rural migration?
A) High levels of job security in agriculture
B) Improved living conditions in rural areas
C) Lack of economic opportunities
D) Abundance of resources
Answer: C) Lack of economic opportunities
Rationale: Limited job prospects in rural areas often drive people to migrate to urban centers for better opportunities.

92. What is the role of the Bureau of Agricultural Statistics (BAS)?
A) To regulate agricultural prices
B) To provide agricultural education
C) To collect and analyze agricultural data
D) To implement land reforms
Answer: C) To collect and analyze agricultural data
Rationale: BAS plays a crucial role in gathering and disseminating data related to agriculture.

93. What is the primary benefit of vertical farming?
A) Increased land use

B) Enhanced food security in urban areas
C) Reduced need for technology
D) Decreased food production
Answer: B) Enhanced food security in urban areas
Rationale: Vertical farming can provide fresh produce in urban settings, helping to address food security.

94. What is a common consequence of climate change on agriculture?
A) Stable weather patterns
B) Increased predictability of crop yields
C) Greater frequency of extreme weather events
D) Decreased pest populations
Answer: C) Greater frequency of extreme weather events
Rationale: Climate change can lead to more extreme and unpredictable weather, impacting agricultural practices.

95. What is the significance of soil health in agriculture?
A) It has no impact on crop production
B) Healthy soil promotes higher productivity and sustainability
C) It is only important for organic farming
D) It leads to increased pesticide use
Answer: B) Healthy soil promotes higher productivity and sustainability
Rationale: Soil health is foundational for achieving productive and sustainable agricultural systems.

96. What is a key challenge in achieving food security?
a. A) Sufficient agricultural production
b. B) Equitable distribution of food resources
c. C) Access to urban areas
d. D) Increased agricultural subsidies
Answer: B) Equitable distribution of food resources
Rationale: Food security involves not just production, but also ensuring that food is accessible to all.

97. **Which agricultural system emphasizes local resource use and community involvement?**
e. A) Conventional agriculture
f. B) Industrial agriculture
g. C) Agroecology
h. D) Monoculture
Answer: C) Agroecology
Rationale: Agroecology focuses on sustainable practices that are closely tied to local environments and communities.

98. **What is the goal of integrated pest management (IPM)?** - A) To eliminate all pests - B) To use pesticides as the only control method - C) To reduce pest populations while minimizing environmental impact - D) To increase reliance on chemical inputs
Answer: C) To reduce pest populations while minimizing environmental impact
Rationale: IPM aims for effective pest control through a combination of practices that protect the environment

99. **What is the primary purpose of agricultural subsidies?**
A) To reduce competition
B) To support farmers and stabilize prices
C) To increase import dependency

D) To eliminate small farms

Answer: B) To support farmers and stabilize prices

Rationale: Subsidies help ensure farmers can sustain their operations and maintain price stability

100. **Which practice can improve soil fertility?**

A) Overgrazing

B) Crop rotation

C) Monocropping

D) Chemical pesticide use

Answer: B) Crop rotation

Rationale: Crop rotation can enhance soil nutrients and reduce pest buildup

I - Extension Education

1. **What is the primary goal of agricultural extension services?**

A) To increase production costs

B) To provide technical support to farmers

C) To regulate market prices

D) To eliminate traditional farming practices

Answer: B) To provide technical support to farmers

Rationale: Agricultural extension services aim to educate and support farmers in adopting improved practices.

2. Which of the following is a key role of agricultural extension workers?

A) Conducting research

B) Implementing agricultural policies

C) Facilitating farmer education and training

D) Managing financial aid programs

Answer: C) Facilitating farmer education and training

Rationale: Extension workers primarily focus on educating farmers about best practices and innovations.

3. What method is commonly used in extension education to promote participatory learning?

A) Lecture-based training

B) Farmer field schools

C) Written manuals

D) Online webinars

Answer: B) Farmer field schools

Rationale: Farmer field schools encourage hands-on learning and active participation among farmers.

4. What is the significance of using local knowledge in agricultural extension?

A) It reduces the need for research

B) It discredits modern practices

C) It enhances the relevance of extension programs

D) It limits innovation

Answer: C) It enhances the relevance of extension programs

Rationale: Incorporating local knowledge ensures that extension services are culturally appropriate and effective.

5. Which of the following is a barrier to effective agricultural extension in the Philippines?

A) High farmer literacy rates

B) Limited access to technology
C) Abundance of extension resources
D) Strong government support
Answer: B) Limited access to technology
Rationale: Limited access to technology can hinder the dissemination of information to farmers.

6. What type of training is most beneficial for smallholder farmers?
A) Specialized technical training
B) General agriculture courses
C) Hands-on practical training
D) Long-term academic programs
Answer: C) Hands-on practical training
Rationale: Practical training helps smallholder farmers apply new techniques directly to their farming practices.

7. Which extension approach emphasizes the use of farmer-to-farmer learning?
A) Top-down approach
B) Participatory approach
C) Technology transfer approach
D) Directive approach
Answer: B) Participatory approach
Rationale: The participatory approach encourages knowledge sharing among farmers, enhancing community learning.

8. What is the primary purpose of conducting needs assessments in extension education?
A) To evaluate funding sources
B) To identify gaps in knowledge and resources
C) To restrict access to information
D) To standardize practices
Answer: B) To identify gaps in knowledge and resources
Rationale: Needs assessments help tailor extension programs to address specific community needs.

9. Which of the following is a common tool used in agricultural extension?
A) Research papers
B) Extension bulletins
C) Legal documents
D) Financial audits
Answer: B) Extension bulletins
Rationale: Extension bulletins provide accessible information on agricultural practices to farmers.

10. What is the role of agricultural cooperatives in extension education?
A) To provide only financial support
B) To serve as platforms for collective learning and resource sharing
C) To eliminate competition among farmers
D) To enforce government regulations
Answer: B) To serve as platforms for collective learning and resource sharing
Rationale: Cooperatives enable farmers to collaborate and learn from each other's experiences.

11. Which method is most effective for disseminating agricultural information in remote areas?

A) Social media campaigns
B) Radio programs
C) Printed newsletters
D) Online forums
Answer: B) Radio programs
Rationale: Radio is often more accessible in remote areas, allowing for broader reach of agricultural information.

12. What is the purpose of technology transfer in agricultural extension?

A) To restrict the use of new technologies
B) To facilitate the adoption of innovations
C) To increase dependency on foreign technology
D) To eliminate traditional practices
Answer: B) To facilitate the adoption of innovations
Rationale: Technology transfer aims to help farmers adopt new technologies that can improve productivity.

13. Which factor is critical for the success of extension education programs?

A) High farmer resistance
B) Strong community involvement
C) Isolated implementation
D) Lack of follow-up
Answer: B) Strong community involvement
Rationale: Engaging the community fosters ownership and increases the likelihood of program success.

14. What is the significance of using demonstrations in agricultural extension?

A) They confuse farmers
B) They provide visual evidence of practices
C) They limit learning opportunities
D) They are time-consuming
Answer: B) They provide visual evidence of practices
Rationale: Demonstrations help farmers see the benefits of practices firsthand, facilitating understanding.

15. Which of the following best describes "participatory rural appraisal" (PRA)?

A) A method to assess rural agricultural policies
B) A tool for community-driven planning and decision-making
C) A financial auditing process
D) A method for enforcing government regulations
Answer: B) A tool for community-driven planning and decision-making
Rationale: PRA empowers communities to analyze their own situations and develop solutions collaboratively.

16. What is the role of gender in agricultural extension education?

A) It should be ignored
B) It is only relevant in urban areas
C) It influences participation and access to resources

D) It complicates training programs

Answer: C) It influences participation and access to resources

Rationale: Understanding gender dynamics is crucial for ensuring equitable access to extension services.

17. Which approach to extension emphasizes self-learning and problem-solving?

A) Prescriptive approach
B) Participatory approach
C) Top-down approach
D) Directive approach

Answer: B) Participatory approach

Rationale: The participatory approach encourages farmers to engage in self-learning and collaboratively solve problems.

19. **What type of education focuses on sustainable agricultural practices?**

A) Conventional education
B) Environmental education
C) Technical education
D) Commercial education

Answer: B) Environmental education

Rationale: Environmental education promotes awareness and adoption of sustainable practices in agriculture.

20. Which is a significant challenge in agricultural extension in the Philippines?

A) Abundance of resources
B) High literacy rates
C) Geographic diversity and accessibility
D) Strong farmer participation

Answer: C) Geographic diversity and accessibility

Rationale: Diverse geography can hinder the delivery of extension services to remote areas.

21. What is the primary focus of community-based extension programs?

A) Top-down decision-making
B) Enhancing community capacity and involvement
C) Promoting government policies
D) Reducing agricultural production

Answer: B) Enhancing community capacity and involvement

Rationale: Community-based programs aim to empower local populations to address their agricultural challenges.

22. Which of the following is an example of non-formal education in agriculture?

A) University degrees
B) Workshops and seminars
C) Online courses
D) Technical certifications

Answer: B) Workshops and seminars

Rationale: Non-formal education includes training sessions that are not part of formal academic curricula.

23. What is the significance of feedback mechanisms in extension education?

A) They complicate program implementation
B) They help improve program relevance and effectiveness
C) They reduce farmer participation

D) They are unnecessary

Answer: B) They help improve program relevance and effectiveness

Rationale: Feedback allows extension programs to adapt to the needs of farmers, enhancing effectiveness.

24. **What is a key benefit of using visual aids in extension training?**

A) They distract from learning

B) They enhance understanding and retention

C) They require additional resources

D) They are only useful for technical topics

Answer: B) They enhance understanding and retention

Rationale: Visual aids can make complex information more accessible and memorable for learners.

25. **Which type of training emphasizes peer learning among farmers?**

A) Conventional training

B) Workshops

C) Farmer-to-farmer training

D) Online courses

Answer: C) Farmer-to-farmer training

Rationale: Farmer-to-farmer training leverages the experiences of peers for effective learning.

26. What is the primary objective of agricultural extension communication?

A) To disseminate irrelevant information

B) To facilitate the exchange of knowledge and skills

C) To restrict farmer access to information

D) To enforce regulatory measures

Answer: B) To facilitate the exchange of knowledge and skills

Rationale: Effective communication is essential for sharing relevant agricultural knowledge and practices.

27. Which approach is effective in addressing the diverse needs of farmers?

A) One-size-fits-all approach

B) Participatory and flexible approach

C) Rigid instructional methods

D) Solely academic approach

Answer: B) Participatory and flexible approach

Rationale: A participatory approach allows for adaptation to the unique needs of different farming communities.

28. What role do NGOs play in agricultural extension?

A) They hinder farmer education

B) They provide funding only

C) They complement government efforts in delivering services

D) They replace government agencies

Answer: C) They complement government efforts in delivering services

Rationale: NGOs often fill gaps in government services, enhancing outreach and support for farmers.

29. What is the main focus of integrated pest management (IPM) in extension education?

A) Total reliance on chemical pesticides

B) Sustainable pest control strategies

C) Eliminating all pests

D) Increasing chemical inputs

Answer: B) Sustainable pest control strategies

Rationale: IPM emphasizes sustainable methods to manage pests while minimizing environmental impact.

30. What is the purpose of organizing farmer groups in extension programs?
    A) To reduce communication
    B) To increase competition
    C) To foster collaboration and resource sharing
    D) To isolate farmers

Answer: C) To foster collaboration and resource sharing

Rationale: Farmer groups facilitate collective learning and support, enhancing agricultural practices.

31. Which of the following is an effective way to motivate farmers to participate in extension programs?
    A) Mandatory attendance
    B) Incentives and rewards
    C) Punitive measures for non-participation
    D) Minimal interaction

Answer: B) Incentives and rewards

Rationale: Providing incentives can encourage participation and engagement in extension programs.

32. What type of evaluation assesses the impact of extension programs on farmers' livelihoods?
    A) Process evaluation
    B) Impact evaluation
    C) Formative evaluation
    D) Summative evaluation

Answer: B) Impact evaluation

Rationale: Impact evaluation measures the changes in farmers' livelihoods resulting from extension interventions.

33. Which of the following is crucial for successful extension delivery?
    A) Ignoring farmer feedback
    B) Building trust and rapport with farmers
    C) Using complex jargon
    D) Limiting access to information

Answer: B) Building trust and rapport with farmers

Rationale: Trust fosters effective communication and engagement between extension workers and farmers.

34. What role does research play in agricultural extension education?
    A) It has no relevance
    B) It informs and supports evidence-based practices
    C) It restricts access to new techniques
    D) It complicates training programs

Answer: B) It informs and supports evidence-based practices

Rationale: Research provides the foundation for developing effective extension programs and practices.

35. What is the importance of field visits in extension education?
    A) They waste resources
    B) They provide real-world context and understanding
    C) They are purely formalities
    D) They limit interaction

Answer: B) They provide real-world context and understanding

Rationale: Field visits allow extension workers to observe conditions and tailor their advice accordingly.

36. Which of the following is a challenge in agricultural extension for women farmers?

A) High levels of participation

B) Limited access to resources and training

C) Increased support from organizations

D) Equal representation in decision-making

Answer: B) Limited access to resources and training

Rationale: Women farmers often face barriers that limit their access to agricultural education and resources.

37. What is the role of technology in modern agricultural extension?

A) It complicates communication

B) It enhances information dissemination and accessibility

C) It reduces farmer participation

D) It limits the scope of extension services

Answer: B) It enhances information dissemination and accessibility

Rationale: Technology can improve how information is shared and accessed by farmers.

38. What is the significance of continuous professional development for extension workers?

A) It is not necessary

B) It ensures they remain informed about best practices and innovations

C) It complicates their roles

D) It limits their interaction with farmers

Answer: B) It ensures they remain informed about best practices and innovations

Rationale: Ongoing training helps extension workers provide the best support to farmers.

40. Which approach to extension emphasizes the use of local resources and knowledge?

A) Industrial agriculture approach

B) Agroecological approach

C) Monoculture approach

D) Conventional approach

Answer: B) Agroecological approach

Rationale: Agroecology promotes sustainable practices based on local knowledge and resources.

41.. What is a key benefit of using mobile technology in agricultural extension?

A) It complicates communication

B) It increases costs for farmers

C) It enhances real-time information sharing

D) It limits outreach

Answer: C) It enhances real-time information sharing

Rationale: Mobile technology can provide farmers with timely information and support.

42. Which extension method is most suitable for reaching diverse farmer populations?

A) Uniform training programs

B) Tailored and flexible approaches

C) Lecture-based formats

D) Strict adherence to protocols

Answer: B) Tailored and flexible approaches

Rationale: Customized methods can better address the specific needs of different farmer groups.

43. What is the role of monitoring and evaluation in extension education?
    A) To enforce strict regulations
    B) To assess program effectiveness and make improvements
    C) To limit farmer involvement
    D) To increase costs
Answer: B) To assess program effectiveness and make improvements
Rationale: Monitoring and evaluation help ensure that extension programs are meeting their objectives.
44. Which of the following is a common challenge faced by extension educators?
    A) Overwhelming farmer engagement
    B) Resistance to new practices
    C) Abundant resources
    D) High literacy levels
Answer: B) Resistance to new practices
Rationale: Farmers may be hesitant to adopt new methods due to tradition or uncertainty.
45. What is the purpose of community organizing in extension education?
    A) To isolate farmers
    B) To build collective action and empowerment
    C) To limit collaboration
    D) To enforce top-down decisions
Answer: B) To build collective action and empowerment
Rationale: Community organizing helps farmers work together towards common goals and solutions.
46. What type of learning is emphasized in experiential education methods?
    A) Passive learning
    B) Rote memorization
    C) Hands-on and reflective learning
    D) Solely theoretical knowledge
Answer: C) Hands-on and reflective learning
Rationale: Experiential education encourages active participation and reflection on experiences.
47. Which of the following best describes "extension communication"?
    A) One-way information flow
    B) Collaborative and interactive exchange of information
    C) Only verbal communication
    D) A formal written process
Answer: B) Collaborative and interactive exchange of information
Rationale: Effective extension communication involves engaging farmers in dialogue and feedback.
48. What is the role of agricultural policy in extension education?
    A) To limit farmer access to information
    B) To guide and support extension initiatives
    C) To reduce funding for programs
    D) To eliminate local knowledge
Answer: B) To guide and support extension initiatives
Rationale: Agricultural policies can provide a framework for effective extension services.
49. Which of the following is essential for building a strong extension network?
    A) Isolation of farmers
    B) Collaboration among stakeholders
    C) Strict top-down directives
    D) Limited communication channels
Answer: B) Collaboration among stakeholders
Rationale: Strong networks enhance resources and information sharing among different actors.

50. What is the importance of culturally sensitive training in extension education?
    A) It complicates training processes
    B) It enhances relevance and acceptance of practices
    C) It limits participation
    D) It reduces the need for training
Answer: B) It enhances relevance and acceptance of practices
Rationale: Culturally sensitive training ensures that practices resonate with local customs and values.
51. Which of the following is a common method for evaluating extension program success?
    A) Monitoring participant attendance
    B) Gathering qualitative and quantitative feedback
    C) Measuring only financial outcomes
    D) Conducting annual reports only
Answer: B) Gathering qualitative and quantitative feedback
Rationale: A comprehensive evaluation considers multiple dimensions of program impact.
52. What is the significance of farmer-led innovation in extension education?
    A) It undermines expert knowledge
    B) It promotes local solutions and adaptability
    C) It complicates the innovation process
    D) It reduces diversity in practices
Answer: B) It promotes local solutions and adaptability
Rationale: Farmer-led innovation allows for tailored solutions that fit local contexts and challenges.
53. Which of the following describes "adaptive learning" in extension education?
    A) Rigid adherence to traditional methods
    B) Flexibility in adjusting practices based on feedback
    C) Sole reliance on expert knowledge
    D) Passive absorption of information
Answer: B) Flexibility in adjusting practices based on feedback
Rationale: Adaptive learning encourages continuous improvement and responsiveness to farmers' needs.
54. What is the significance of social capital in agricultural extension?
    A) It is irrelevant to farming
    B) It fosters trust and cooperation among farmers
    C) It limits farmer networks
    D) It complicates resource sharing
Answer: B) It fosters trust and cooperation among farmers
Rationale: Social capital strengthens community ties, enhancing collaboration and support.
55. Which of the following best defines "farmers' rights" in extension education?
    A) Farmers have no rights
    B) Farmers should have access to information and resources
    C) Farmers are restricted from decision-making
    D) Farmers' rights are only legal protections
Answer: B) Farmers should have access to information and resources
Rationale: Recognizing farmers' rights ensures they can participate fully in agricultural development.
56. What role do gender-sensitive approaches play in agricultural extension?
    A) They create inequality
    B) They promote inclusivity and equity
    C) They complicate programs
    D) They limit participation
Answer: B) They promote inclusivity and equity
Rationale: Gender-sensitive approaches ensure that both men and women benefit equally from extension services.

57. Which of the following is a challenge to implementing sustainable practices in agriculture?
    A) High farmer engagement
    B) Resistance to change and tradition
    C) Abundance of resources
    D) Strong governmental support
Answer: B) Resistance to change and tradition
Rationale: Farmers may be hesitant to adopt sustainable practices due to established traditions.
58. What is the goal of participatory action research (PAR) in extension education?
    A) To control farmers' decisions
    B) To empower communities through active involvement in research
    C) To restrict access to knowledge
    D) To standardize agricultural practices
Answer: B) To empower communities through active involvement in research
Rationale: PAR engages communities in identifying problems and developing solutions together.
59. Which extension strategy focuses on building local capacities for sustainable farming?
    A) Traditional training methods
    B) Capacity-building initiatives
    C) Government-led directives
    D) Financial incentives only
Answer: B) Capacity-building initiatives
Rationale: Capacity building enhances local skills and knowledge for sustainable agricultural practices.
60. What is a significant outcome of effective extension education?
    A) Decreased agricultural productivity
    B) Enhanced farmer resilience and adaptability
    C) Isolation of farmers
    D) Limited access to information
Answer: B) Enhanced farmer resilience and adaptability
Rationale: Effective extension education empowers farmers to respond to challenges and changes.
61. Which of the following is essential for effective communication in extension education?
    A) Use of jargon
    B) Clarity and simplicity of information
    C) Exclusively formal communication
    D) One-way information flow
Answer: B) Clarity and simplicity of information
Rationale: Clear and simple communication ensures that farmers understand and can apply the information.
62. What is the importance of policy advocacy in agricultural extension?
    A) It limits farmer involvement
    B) It influences favorable conditions for farmers and extension services
    C) It complicates service delivery
    D) It reduces government support
Answer: B) It influences favorable conditions for farmers and extension services
Rationale: Advocacy can lead to policies that support agricultural development and extension initiatives.
63. Which of the following strategies enhances farmer participation in extension programs?
    A) Mandating participation
    B) Involving farmers in program design and evaluation
    C) Restricting communication
    D) Focusing solely on expert opinions
Answer: B) Involving farmers in program design and evaluation
Rationale: When farmers are involved, they are more likely to engage and benefit from extension programs.

64. What is the role of agricultural education in promoting sustainable practices?
    A) It has no impact
    B) It raises awareness and builds skills for sustainability
    C) It complicates farming methods
    D) It limits innovation
Answer: B) It raises awareness and builds skills for sustainability
Rationale: Education is key to equipping farmers with the knowledge needed for sustainable practices.
65. What is the significance of integrating local culture in extension programs?
    A) It complicates program implementation
    B) It enhances acceptance and relevance of practices
    C) It limits participation
    D) It reduces the need for training
Answer: B) It enhances acceptance and relevance of practices
Rationale: Programs that respect and incorporate local culture are more likely to be embraced by farmers.
66. Which of the following best describes the "knowledge spiral" in extension education?
    A) A linear process of learning
    B) A dynamic interaction between tacit and explicit knowledge
    C) A one-way flow of information
    D) A method to restrict learning
Answer: B) A dynamic interaction between tacit and explicit knowledge
Rationale: The knowledge spiral emphasizes the continuous exchange and development of knowledge among farmers and extension workers.
67. What is the main objective of training-of-trainers (ToT) programs in extension education?
    A) To limit the number of trainers
    B) To equip trainers with knowledge to educate others
    C) To standardize farming practices
    D) To eliminate local trainers
Answer: B) To equip trainers with knowledge to educate others
Rationale: ToT programs prepare trainers to effectively disseminate knowledge to farmers.
68. Which extension method encourages experimentation and learning from failure?
    A) Prescriptive methods
    B) Rigid protocols
    C) Learning-by-doing approach
    D) Solely theoretical learning
Answer: C) Learning-by-doing approach
Rationale: This approach promotes practical experimentation, allowing farmers to learn through trial and error.
69. What is the importance of sharing success stories in extension education?
    A) They create competition
    B) They inspire and motivate other farmers
    C) They are irrelevant
    D) They complicate the learning process
Answer: B) They inspire and motivate other farmers
Rationale: Success stories can provide relatable examples and encourage others to adopt new practices.
70. Which of the following best defines "capacity building" in agricultural extension?
    A) Focusing solely on financial resources
    B) Enhancing skills, knowledge, and abilities of farmers and extension workers
    C) Limiting participation
    D) Standardizing practices across regions
Answer: B) Enhancing skills, knowledge, and abilities of farmers and extension workers

Rationale: Capacity building ensures that both farmers and extension workers can effectively respond to challenges.

71. What is the significance of creating a supportive policy environment for agricultural extension?
    A) It reduces access to services
    B) It facilitates the implementation of effective extension programs
    C) It complicates decision-making
    D) It limits community involvement

Answer: B) It facilitates the implementation of effective extension programs

Rationale: Supportive policies can enhance funding and resources for extension services.

72. Which of the following is a benefit of collaborating with universities in extension education?
    A) It complicates the learning process
    B) It enhances access to research and expert knowledge
    C) It limits practical training opportunities
    D) It creates competition among institutions

Answer: B) It enhances access to research and expert knowledge

Rationale: Collaboration can strengthen the quality and relevance of extension services.

73. Which of the following is a common method for evaluating extension program success?
    A) Monitoring participant attendance
    B) Gathering qualitative and quantitative feedback
    C) Measuring only financial outcomes
    D) Conducting annual reports only

Answer: B) Gathering qualitative and quantitative feedback

Rationale: A comprehensive evaluation considers multiple dimensions of program impact.

74. What is the significance of farmer-led innovation in extension education?
    A) It undermines expert knowledge
    B) It promotes local solutions and adaptability
    C) It complicates the innovation process
    D) It reduces diversity in practices

Answer: B) It promotes local solutions and adaptability

Rationale: Farmer-led innovation allows for tailored solutions that fit local contexts and challenges.

75. Which of the following describes "adaptive learning" in extension education?
    A) Rigid adherence to traditional methods
    B) Flexibility in adjusting practices based on feedback
    C) Sole reliance on expert knowledge
    D) Passive absorption of information

Answer: B) Flexibility in adjusting practices based on feedback

Rationale: Adaptive learning encourages continuous improvement and responsiveness to farmers' needs.

76. . What is the significance of social capital in agricultural extension?
    A) It is irrelevant to farming
    B) It fosters trust and cooperation among farmers
    C) It limits farmer networks
    D) It complicates resource sharing

Answer: B) It fosters trust and cooperation among farmers

Rationale: Social capital strengthens community ties, enhancing collaboration and support.

77. Which of the following best defines "farmers' rights" in extension education?
    A) Farmers have no rights
    B) Farmers should have access to information and resources
    C) Farmers are restricted from decision-making
    D) Farmers' rights are only legal protections
Answer: B) Farmers should have access to information and resources
Rationale: Recognizing farmers' rights ensures they can participate fully in agricultural development.
78. What role do gender-sensitive approaches play in agricultural extension?
    A) They create inequality
    B) They promote inclusivity and equity
    C) They complicate programs
    D) They limit participation
Answer: B) They promote inclusivity and equity
Rationale: Gender-sensitive approaches ensure that both men and women benefit equally from extension services.
78. . Which of the following is a challenge to implementing sustainable practices in agriculture?
    A) High farmer engagement
    B) Resistance to change and tradition
    C) Abundance of resources
    D) Strong governmental support
Answer: B) Resistance to change and tradition
Rationale: Farmers may be hesitant to adopt sustainable practices due to established traditions.
79. What is the goal of participatory action research (PAR) in extension education?
    A) To control farmers' decisions
    B) To empower communities through active involvement in research
    C) To restrict access to knowledge
    D) To standardize agricultural practices
Answer: B) To empower communities through active involvement in research
Rationale: PAR engages communities in identifying problems and developing solutions together.
80. Which extension strategy focuses on building local capacities for sustainable farming?
    A) Traditional training methods
    B) Capacity-building initiatives
    C) Government-led directives
    D) Financial incentives only
Answer: B) Capacity-building initiatives
Rationale: Capacity building enhances local skills and knowledge for sustainable agricultural practices.
81. What is a significant outcome of effective extension education?
    A) Decreased agricultural productivity
    B) Enhanced farmer resilience and adaptability
    C) Isolation of farmers
    D) Limited access to information
Answer: B) Enhanced farmer resilience and adaptability
Rationale: Effective extension education empowers farmers to respond to challenges and changes.
82. Which of the following is essential for effective communication in extension education?
    A) Use of jargon
    B) Clarity and simplicity of information
    C) Exclusively formal communication
    D) One-way information flow
Answer: B) Clarity and simplicity of information
Rationale: Clear and simple communication ensures that farmers understand and can apply the information.

83. What is the importance of policy advocacy in agricultural extension?
A) It limits farmer involvement
B) It influences favorable conditions for farmers and extension services
C) It complicates service delivery
D) It reduces government support
Answer: B) It influences favorable conditions for farmers and extension services
Rationale: Advocacy can lead to policies that support agricultural development and extension initiatives.
84. Which of the following strategies enhances farmer participation in extension programs?
A) Mandating participation
B) Involving farmers in program design and evaluation
C) Restricting communication
D) Focusing solely on expert opinions
Answer: B) Involving farmers in program design and evaluation
Rationale: When farmers are involved, they are more likely to engage and benefit from extension programs.
85. What is the role of agricultural education in promoting sustainable practices?
A) It has no impact
B) It raises awareness and builds skills for sustainability
C) It complicates farming methods
D) It limits innovation
Answer: B) It raises awareness and builds skills for sustainability
Rationale: Education is key to equipping farmers with the knowledge needed for sustainable practices.
86. What is the significance of integrating local culture in extension programs?
A) It complicates program implementation
B) It enhances acceptance and relevance of practices
C) It limits participation
D) It reduces the need for training
Answer: B) It enhances acceptance and relevance of practices
Rationale: Programs that respect and incorporate local culture are more likely to be embraced by farmers.
67. Which of the following best describes the "knowledge spiral" in extension education?
A) A linear process of learning
B) A dynamic interaction between tacit and explicit knowledge
C) A one-way flow of information
D) A method to restrict learning
Answer: B) A dynamic interaction between tacit and explicit knowledge
Rationale: The knowledge spiral emphasizes the continuous exchange and development of knowledge among farmers and extension workers.
88. What is the main objective of training-of-trainers (ToT) programs in extension education?
A) To limit the number of trainers
B) To equip trainers with knowledge to educate others
C) To standardize farming practices
D) To eliminate local trainers
Answer: B) To equip trainers with knowledge to educate others
Rationale: ToT programs prepare trainers to effectively disseminate knowledge to farmers.

89. Which extension method encourages experimentation and learning from failure?
A) Prescriptive methods
B) Rigid protocols
C) Learning-by-doing approach
D) Solely theoretical learning

Answer: C) Learning-by-doing approach
Rationale: This approach promotes practical experimentation, allowing farmers to learn through trial and error.

90. What is the importance of sharing success stories in extension education?
A) They create competition
B) They inspire and motivate other farmers
C) They are irrelevant
D) They complicate the learning process
Answer: B) They inspire and motivate other farmers
Rationale: Success stories can provide relatable examples and encourage others to adopt new practices.

91. Which of the following best defines "capacity building" in agricultural extension?
A) Focusing solely on financial resources
B) Enhancing skills, knowledge, and abilities of farmers and extension workers
C) Limiting participation
D) Standardizing practices across regions
Answer: B) Enhancing skills, knowledge, and abilities of farmers and extension workers
Rationale: Capacity building ensures that both farmers and extension workers can effectively respond to challenges.

92. What is the significance of creating a supportive policy environment for agricultural extension?
A) It reduces access to services
B) It facilitates the implementation of effective extension programs
C) It complicates decision-making
D) It limits community involvement
Answer: B) It facilitates the implementation of effective extension programs
Rationale: Supportive policies can enhance funding and resources for extension services.
93. Which of the following is a benefit of collaborating with universities in extension education?
A) It complicates the learning process
B) It enhances access to research and expert knowledge
C) It limits practical training opportunities
D) It creates competition among institutions
Answer: B) It enhances access to research and expert knowledge
Rationale: Collaboration can strengthen the quality and relevance of extension services.
94. What is the importance of addressing climate change in agricultural extension programs?
A) It has no relevance
B) It ensures farmers are equipped to adapt and mitigate impacts
C) It complicates farming practices
D) It reduces the need for training
Answer: B) It ensures farmers are equipped to adapt and mitigate impacts
Rationale: Addressing climate change is crucial for building resilience in agricultural systems.
95. Which of the following describes "peer-to-peer learning" in extension education?
A) Learning solely from experts
B) Farmers sharing knowledge and experiences with each other
C) One-way communication
D) A formal training process
Answer: B) Farmers sharing knowledge and experiences with each other

Rationale: Peer-to-peer learning fosters collaboration and enhances understanding through shared experiences.

96. What is the role of agribusiness in agricultural extension?
    A) To limit farmer access to markets
    B) To provide resources, information, and support to farmers
    C) To complicate the supply chain
    D) To isolate farmers from information
Answer: B) To provide resources, information, and support to farmers
Rationale: Agribusinesses can enhance extension efforts by supplying valuable inputs and market information.

97. Which of the following best describes "sustainable agriculture"?
    A) Practices that harm the environment
    B) Farming that meets current needs without compromising future generations
    C) Solely chemical-based farming
    D) Monoculture farming practices
Answer: B) Farming that meets current needs without compromising future generations
Rationale: Sustainable agriculture aims to balance productivity with environmental health.

98. What is the importance of creating a learning community in extension education?
    A) It isolates farmers
    B) It fosters collaboration and knowledge sharing
    C) It complicates the learning process
    D) It limits access to information
Answer: B) It fosters collaboration and knowledge sharing
Rationale: Learning communities encourage collective problem-solving and innovation among farmers.

99. What is the primary goal of agricultural extension services?
    A) To increase agricultural production at all costs
    B) To improve farmers' knowledge and skills for better livelihoods
    C) To restrict farmers from using traditional methods
    D) To promote urban agriculture exclusively
    Answer: B) To improve farmers' knowledge and skills for better livelihoods
    Rationale: The main aim of extension services is to empower farmers through education and resources.

100. **Which method is most effective for adult learning in agricultural extension?**
    A) Lecture-based teaching
    B) Interactive workshops and discussions
    C) One-way presentations
    D) Written manuals only
    Answer: B) Interactive workshops and discussions
    Rationale: Adults learn best through engagement and practical interaction.

101. What is the significance of gender-responsive extension programs?
    A) They focus solely on men's needs

B) They ignore cultural contexts
C) They ensure both men and women have equal access to resources
D) They complicate program implementation
Answer: C) They ensure both men and women have equal access to resources
Rationale: Gender-responsive programs promote equity and inclusivity in agricultural development.

102.What is the role of feedback in extension education?
A) It is unnecessary
B) It helps improve programs and address farmer concerns
C) It complicates decision-making
D) It limits communication
Answer: B) It helps improve programs and address farmer concerns
Rationale: Feedback allows extension educators to adjust their approaches to better meet farmers' needs.

103. **What is a key component of participatory rural appraisal (PRA)?**
A) Top-down decision-making
B) Community involvement in data collection and analysis
C) Sole reliance on expert opinions
D) Minimal farmer engagement
Answer: B) Community involvement in data collection and analysis
Rationale: PRA encourages local participation to understand and solve community issues.
104. Which of the following is a barrier to effective agricultural extension?
A) High levels of farmer engagement
B) Poor infrastructure and limited resources
C) Availability of trained extension workers
D) Strong government support
Answer: B) Poor infrastructure and limited resources
Rationale: Lack of resources can significantly hinder the effectiveness of extension services.
105. What is the purpose of developing extension materials in local languages?
A) To confuse farmers
B) To ensure accessibility and understanding
C) To limit outreach
D) To increase costs
Answer: B) To ensure accessibility and understanding
Rationale: Using local languages makes information more comprehensible for farmers.
106. What is the importance of integrating nutrition education in agricultural extension?
A) It complicates farming practices
B) It promotes overall community health and well-being
C) It has no relevance to farming
D) It solely focuses on production
Answer: B) It promotes overall community health and well-being
Rationale: Nutrition education helps farmers make informed choices about food production and consumption.
107. Which extension approach emphasizes learning through local experimentation?
A) Traditional top-down methods
B) Farmer Field Schools (FFS)
C) Solely theoretical classes
D) Standardized training programs
Answer: B) Farmer Field Schools (FFS)
Rationale: FFS promotes hands-on learning and adaptation through practical field experiences.

108. What is the role of social media in agricultural extension?

A) It complicates communication
B) It serves as a platform for information sharing and networking
C) It limits farmer engagement
D) It is irrelevant to agriculture

Answer: B) It serves as a platform for information sharing and networking

Rationale: Social media can enhance communication and outreach in agricultural communities.

109. What is an important aspect of conflict resolution in extension education?

A) Ignoring differences
B) Open dialogue and negotiation
C) Enforcing top-down solutions
D) Creating divisions among farmers

Answer: B) Open dialogue and negotiation

Rationale: Effective conflict resolution involves collaboration and understanding different perspectives.

110. Which of the following is a method to evaluate farmers' knowledge before extension training?

A) Ignoring existing knowledge
B) Pre-training assessments
C) Post-training evaluations only
D) Relying on assumptions

Answer: B) Pre-training assessments

Rationale: Understanding farmers' initial knowledge helps tailor training to their needs.

111.What is the significance of networking among extension workers?

A) It creates competition
B) It facilitates resource sharing and collaboration
C) It complicates communication
D) It limits professional development

Answer: B) It facilitates resource sharing and collaboration

Rationale: Networking enhances cooperation and the sharing of best practices.

112.What is the benefit of using demonstration plots in extension education?

A) They confuse farmers
B) They provide visual evidence of practices
C) They complicate learning
D) They are expensive to implement

Answer: B) They provide visual evidence of practices

Rationale: Demonstration plots allow farmers to see and understand practices firsthand.

113.Which of the following is a characteristic of effective agricultural extension leadership?

A) Authoritarian decision-making
B) Inclusiveness and collaboration
C) Ignoring farmer input
D) Rigid adherence to procedures

Answer: B) Inclusiveness and collaboration

Rationale: Effective leadership encourages participation and values diverse perspectives.

114.What is the purpose of a needs assessment in extension education?

A) To limit training topics
B) To identify gaps and tailor programs to farmers' needs
C) To enforce strict guidelines
D) To ignore farmer input

Answer: B) To identify gaps and tailor programs to farmers' needs

Rationale: A needs assessment helps ensure that extension programs are relevant and effective.

115.Which factor is essential for sustaining extension programs over time?

A) Reduced funding
B) Community ownership and involvement
C) Limiting farmer participation
D) Ignoring feedback

Answer: B) Community ownership and involvement

Rationale: Sustainable programs thrive when communities take an active role in their development.

116.What is the role of research-extension linkages in agricultural development?

A) To limit farmer access to information
B) To ensure that research informs practical applications for farmers
C) To complicate the extension process
D) To enforce rigid standards

Answer: B) To ensure that research informs practical applications for farmers

Rationale: Effective linkages help translate research findings into actionable practices for farmers.

117.What is a significant advantage of using farmer cooperatives in extension programs?

A) They isolate farmers
B) They enhance resource sharing and collective bargaining
C) They complicate decision-making
D) They limit market access

Answer: B) They enhance resource sharing and collective bargaining

Rationale: Cooperatives empower farmers to work together for mutual benefit.

118.What is the role of financial literacy in agricultural extension?

A) It is not relevant
B) It helps farmers manage resources effectively and make informed decisions
C) It complicates farming practices
D) It reduces the need for agricultural training

Answer: B) It helps farmers manage resources effectively and make informed decisions

Rationale: Financial literacy is crucial for sustainable farming and business management.

119.What is the significance of mentorship in agricultural extension?

A) It limits learning opportunities
B) It fosters knowledge transfer and skill development
C) It complicates program implementation
D) It creates competition among farmers

Answer: B) It fosters knowledge transfer and skill development

Rationale: Mentorship provides support and guidance, enhancing the learning experience for farmers.

120.Which extension strategy is effective in addressing climate resilience?

A) Solely chemical-based solutions
B) Integrated approaches combining sustainable practices
C) Ignoring environmental factors
D) Monoculture farming

Answer: B) Integrated approaches combining sustainable practices

Rationale: Addressing climate resilience requires holistic strategies that consider environmental sustainability.

121.What is a key benefit of training extension workers on soft skills?

A) It complicates their roles
B) It enhances communication and relationship-building with farmers
C) It reduces their technical knowledge
D) It limits their effectiveness

Answer: B) It enhances communication and relationship-building with farmers

Rationale: Soft skills are essential for fostering trust and effective interactions with farmers.

123. What is the role of community-based organizations in extension education?

A) They hinder farmer participation
B) They enhance local engagement and support for extension services
C) They limit outreach
D) They create divisions among farmers
Answer: B) They enhance local engagement and support for extension services
Rationale: Community organizations can mobilize resources and encourage participation in extension programs.

124. **What is the benefit of conducting regular training updates for extension workers?**

A) It is unnecessary
B) It ensures they are informed about the latest practices and Technologies
C) It complicates their roles
D) It limits their engagement with farmers
Answer: B) It ensures they are informed about the latest practices and technologies
Rationale: Ongoing training keeps extension workers knowledgeable and effective in their roles

Statistics in Agriculture

1. **What is the primary purpose of agricultural statistics?**
   A) To increase crop prices
   B) To provide data for decision-making and policy formulation
   C) To confuse farmers
   D) To reduce crop yields
   Answer: B) To provide data for decision-making and policy formulation
   Rationale: Agricultural statistics are essential for informed decision-making in policy and planning.
2. **Which of the following is a commonly used statistical method in agricultural research?**
   A) Regression analysis
   B) Literary analysis
   C) Historical review
   D) Intuitive judgment
   Answer: A) Regression analysis
   Rationale: Regression analysis helps in understanding relationships between variables in agriculture.
3. **What does the term "sample size" refer to in agricultural surveys?**
   A) The total population of farmers
   B) The number of respondents chosen for the study
   C) The geographical area of the study
   D) The duration of the study
   Answer: B) The number of respondents chosen for the study
   Rationale: Sample size is crucial for ensuring that survey results are representative of the population.
4. **Which statistical measure indicates the central tendency of a data set?**
   A) Variance
   B) Mean
   C) Range
   D) Standard deviation
   Answer: B) Mean
   Rationale: The mean provides the average value, reflecting the central point of the data.
5. **What is the significance of confidence intervals in agricultural research?**
   A) They predict future yields
   B) They provide a range within which the true population parameter lies
   C) They eliminate the need for sampling
   D) They are not useful
   Answer: B) They provide a range within which the true population parameter lies
   Rationale: Confidence intervals help quantify uncertainty in estimates derived from samples.

6. Which of the following is a qualitative statistical method?

A) Descriptive statistics
B) Hypothesis testing
C) Focus group discussions
D) Regression analysis
Answer: C) Focus group discussions
Rationale: Focus groups are used to gather qualitative insights rather than quantitative data.

7. What does "standard deviation" measure in agricultural data?

A) The average yield
B) The variability or dispersion of data points
C) The total yield
D) The maximum yield
Answer: B) The variability or dispersion of data points
Rationale: Standard deviation indicates how spread out the values are from the mean.

8. In sampling, what does "random sampling" ensure?

A) Equal representation of all groups
B) Convenience for the researcher
C) Selection of the most knowledgeable individuals
D) Quick data collection
Answer: A) Equal representation of all groups
Rationale: Random sampling minimizes bias and ensures diverse representation.

9. What is the primary use of descriptive statistics in agriculture?

A) To make predictions
B) To summarize and describe the features of a data set
C) To test hypotheses
D) To enforce regulations
Answer: B) To summarize and describe the features of a data set
Rationale: Descriptive statistics provide a clear overview of the collected data.

10. Which statistical software is commonly used in agricultural research?

A) Microsoft Word
B) SPSS
C) Adobe Photoshop
D) PowerPoint
Answer: B) SPSS
Rationale: SPSS is widely used for statistical analysis in various research fields, including agriculture.

11. What is the purpose of using a control group in agricultural experiments?

A) To maximize yields
B) To compare results against a standard
C) To complicate analysis
D) To increase costs
Answer: B) To compare results against a standard
Rationale: Control groups help isolate the effects of the treatment being tested.

12. Which type of graph is best for displaying the distribution of agricultural yields?

A) Bar graph

B) Pie chart
C) Histogram
D) Line graph
Answer: C) Histogram
Rationale: A histogram effectively shows the frequency distribution of numerical data.

13. What is the importance of agricultural censuses?
A) To promote specific crops
B) To collect comprehensive data on the agricultural sector
C) To limit farming activities
D) To reduce costs
Answer: B) To collect comprehensive data on the agricultural sector
Rationale: Agricultural censuses provide essential data for planning and development.

14. In the context of agricultural statistics, what does "variance" indicate?
A) The average value
B) The extent of variation among data points
C) The minimum yield
D) The number of samples
Answer: B) The extent of variation among data points
Rationale: Variance quantifies how much the data points differ from the mean.

15. What is the benefit of using time series analysis in agriculture?
A) To analyze one-time data
B) To observe trends over time
C) To complicate forecasting
D) To ignore seasonal patterns
Answer: B) To observe trends over time
Rationale: Time series analysis helps identify patterns and trends across different periods.

16. Which of the following is a common statistical test used to compare two means?
A) Chi-square test
B) T-test
C) ANOVA
D) Regression analysis
Answer: B) T-test
Rationale: A T-test compares the means of two groups to determine if they are significantly different.

17. What does the term "outlier" refer to in statistical analysis?
A) A common data point
B) A value that is significantly different from others
C) The average value
D) The total number of observations
Answer: B) A value that is significantly different from others
Rationale: Outliers can skew results and affect data analysis.

18. What is the function of a frequency distribution table?
A) To summarize data points
B) To provide a visual representation of data
C) To list all observations in chronological order
D) To ignore repeated measures
Answer: A) To summarize data points
Rationale: A frequency distribution table organizes data into categories to show how often each occurs.

19. In agricultural economics, what does "elasticity" measure?

A) The amount of crops produced
B) The responsiveness of supply or demand to price changes
C) The physical size of the farm
D) The total revenue generated
Answer: B) The responsiveness of supply or demand to price changes
Rationale: Elasticity helps understand how quantity changes with price fluctuations.

20. What is a key feature of stratified sampling?
A) Random selection from the entire population
B) Division of the population into subgroups before sampling
C) Convenience sampling
D) Selection of only the highest yielding farms
Answer: B) Division of the population into subgroups before sampling
Rationale: Stratified sampling ensures representation from different subgroups within the population.

21. Which of the following is a primary source of agricultural data?
A) Newspapers
B) Farmer surveys
C) General knowledge
D) Fictional accounts
Answer: B) Farmer surveys
Rationale: Farmer surveys provide direct and specific data from those involved in agriculture.

22. What is the impact of sampling bias on agricultural research?
A) It enhances data quality
B) It skews results and reduces reliability
C) It simplifies analysis
D) It guarantees accurate findings
Answer: B) It skews results and reduces reliability
Rationale: Sampling bias can lead to incorrect conclusions that do not reflect the true situation.

23. In agricultural research, what does "hypothesis testing" involve?
A) Making assumptions without data
B) Evaluating evidence to support or refute a claim
C) Ignoring results
D) Complicating data analysis
Answer: B) Evaluating evidence to support or refute a claim
Rationale: Hypothesis testing is a systematic method for validating research questions.

24. What is the significance of the p-value in statistical analysis?
A) It indicates the size of the sample
B) It helps determine the significance of results
C) It represents the average
D) It is irrelevant
Answer: B) It helps determine the significance of results
Rationale: The p-value indicates whether the observed effects are likely due to chance.

25. Which agricultural statistic is used to measure farm productivity?
A) Total land area
B) Yield per hectare
C) Total number of farms
D) Number of farm workers
Answer: B) Yield per hectare
Rationale: Yield per hectare quantifies the efficiency and productivity of agricultural land.

Ecology in Agriculture

1. **What is the role of biodiversity in agricultural systems?**
   A) It complicates farming practices
   B) It enhances ecosystem resilience and productivity
   C) It reduces crop yields
   D) It is not relevant
   Answer: B) It enhances ecosystem resilience and productivity
   Rationale: Biodiversity contributes to healthier ecosystems, which support agricultural productivity.

2. What does the term "sustainable agriculture" refer to?
   A) Farming that relies solely on chemical inputs
   B) Practices that maintain productivity while conserving resources
   C) Monoculture farming
   D) High-input farming
   Answer: B) Practices that maintain productivity while conserving resources
   Rationale: Sustainable agriculture seeks to balance productivity with environmental stewardship.

3. Which of the following practices helps reduce soil erosion?
   A) Overgrazing
   B) Cover cropping
   C) Monocropping
   D) Tillage
   Answer: B) Cover cropping
   Rationale: Cover crops protect the soil and prevent erosion by maintaining soil structure.

4. What is a key benefit of agroforestry systems?
   A) They increase chemical input use
   B) They enhance biodiversity and soil health
   C) They reduce farm income
   D) They limit crop rotation
   Answer: B) They enhance biodiversity and soil health
   Rationale: Agroforestry combines trees and crops, improving ecosystem functions.

5. Which of the following is a consequence of deforestation for agriculture?
   A) Increased biodiversity
   B) Soil degradation and loss of habitat
   C) Enhanced water quality
   D) Improved climate stability
   Answer: B) Soil degradation and loss of habitat
   Rationale: Deforestation disrupts ecosystems, leading to adverse environmental impacts.

6. What is integrated pest management (IPM)?

A) Sole reliance on chemical pesticides
B) A holistic approach to managing pests using multiple strategies
C) Ignoring pest issues
D) Using only biological control methods
Answer: B) A holistic approach to managing pests using multiple strategies
Rationale: IPM combines biological, cultural, and chemical practices for effective pest control.

7. How does crop rotation benefit soil health?

A) It promotes monoculture
B) It reduces nutrient depletion and pest buildup
C) It requires more chemical inputs
D) It complicates farming
Answer: B) It reduces nutrient depletion and pest buildup
Rationale: Crop rotation enhances soil fertility and disrupts pest life cycles.

8. What is the primary concern of soil salinization?

A) Increased biodiversity
B) Reduced soil fertility and crop yields
C) Improved soil structure
D) Enhanced water retention
Answer: B) Reduced soil fertility and crop yields
Rationale: Salinization can lead to toxic levels of salts in the soil, negatively affecting crops.

9. Which of the following is a renewable resource in agriculture?

A) Fossil fuels
B) Soil
C) Chemical fertilizers
D) Pesticides
Answer: B) Soil
Rationale: Soil can be renewed through sustainable practices, while fossil fuels are non-renewable.

10. What is the function of wetlands in agricultural landscapes?

A) They are unproductive areas
B) They improve water quality and provide habitat
C) They increase flooding risk
D) They only support aquatic life
Answer: B) They improve water quality and provide habitat
Rationale: Wetlands filter pollutants and support diverse species, benefiting agriculture.

11. What is the concept of "agroecology"?

A) The study of chemical inputs in agriculture
B) The application of ecological principles to agricultural systems
C) A focus on monoculture practices
D) The exclusion of native species
Answer: B) The application of ecological principles to agricultural systems
Rationale: Agroecology promotes sustainable practices through ecological understanding.

12. Which practice is most effective for conserving water in agriculture?

A) Flood irrigation

B) Drip irrigation
C) Surface runoff
D) Overwatering
Answer: B) Drip irrigation
Rationale: Drip irrigation delivers water directly to the roots, minimizing waste.

13. What is the impact of climate change on agriculture?
A) It always increases yields
B) It can disrupt growing seasons and reduce crop productivity
C) It has no effect
D) It simplifies farming practices
Answer: B) It can disrupt growing seasons and reduce crop productivity
Rationale: Climate change poses risks to food security and agricultural sustainability.

14. Which of the following is a benefit of using organic fertilizers?
A) They are more harmful than synthetic fertilizers
B) They improve soil structure and fertility
C) They reduce microbial activity
D) They are less effective than chemical fertilizers
Answer: B) They improve soil structure and fertility
Rationale: Organic fertilizers enhance soil health and promote sustainable practices.

15. What role do pollinators play in agriculture?
A) They are pests
B) They contribute to crop pollination and increased yields
C) They compete with crops
D) They are not significant
Answer: B) They contribute to crop pollination and increased yields
Rationale: Pollinators are vital for the reproduction of many crops, enhancing productivity.

16. How can farmers mitigate soil erosion?
A) By clearing vegetation
B) Through conservation tillage and cover crops
C) By using more pesticides
D) By planting only one crop
Answer: B) Through conservation tillage and cover crops
Rationale: These practices help maintain soil structure and prevent erosion.

17. What is the significance of native plant species in agriculture?
A) They are less resilient than exotic species
B) They support local ecosystems and biodiversity
C) They require more resources
D) They are irrelevant to farming
Answer: B) They support local ecosystems and biodiversity
Rationale: Native plants enhance resilience and promote a balanced ecosystem.

18. What is the impact of monoculture farming on soil health?
A) It enhances biodiversity
B) It depletes soil nutrients and increases vulnerability to pests
C) It improves soil structure
D) It has no effect
Answer: B) It depletes soil nutrients and increases vulnerability to pests
Rationale: Monoculture can lead to nutrient depletion and increased pest pressure.

19. Which of the following practices is essential for organic farming?
A) Use of synthetic fertilizers

B) Crop rotation and biodiversity
C) Monoculture
D) High pesticide usage
Answer: B) Crop rotation and biodiversity
Rationale: Organic farming emphasizes practices that enhance soil health and biodiversity.

20. What is the purpose of agroecological zoning?
A) To limit crop diversity
B) To identify areas suitable for specific crops based on ecological conditions
C) To promote monoculture
D) To ignore local conditions
Answer: B) To identify areas suitable for specific crops based on ecological conditions
Rationale: Agroecological zoning helps optimize agricultural production based on environmental factors.

21. How does composting benefit agricultural ecosystems?
A) It creates waste
B) It improves soil fertility and reduces waste
C) It complicates farming practices
D) It increases dependency on chemical inputs
Answer: B) It improves soil fertility and reduces waste
Rationale: Composting recycles organic material, enriching soil health.

22. What is the main advantage of intercropping?
A) It simplifies pest management
B) It increases biodiversity and reduces pest outbreaks
C) It requires more inputs
D) It complicates crop management
Answer: B) It increases biodiversity and reduces pest outbreaks
Rationale: Intercropping can create a more resilient ecosystem and minimize pest issues.

23. What is the effect of using genetically modified organisms (GMOs) in agriculture?
A) They always harm the environment
B) They can enhance yields and resistance to pests and diseases
C) They have no impact on productivity
D) They are only beneficial for certain crops
Answer: B) They can enhance yields and resistance to pests and diseases
Rationale: GMOs can offer solutions to challenges in crop production.

24. What is the ecological impact of using chemical pesticides?
A) They have no impact
B) They can harm beneficial insects and disrupt ecosystems
C) They improve biodiversity
D) They enhance soil health
Answer: B) They can harm beneficial insects and disrupt ecosystems
Rationale: Chemical pesticides can have unintended negative effects on non-target species.

25. What is the benefit of maintaining hedgerows in agricultural areas?

A) They take up valuable land
B) They provide habitats for wildlife and reduce erosion
C) They limit biodiversity
D) They complicate farming practices
Answer: B) They provide habitats for wildlife and reduce erosion
Rationale: Hedgerows can enhance biodiversity and help protect soil from erosion.

Agricultural Policies in the Philippines

1. **What is the main goal of the Agricultural Modernization Act in the Philippines?**
   A) To reduce crop production
   B) To enhance the competitiveness of the agricultural sector
   C) To promote urban agriculture only
   D) To eliminate small farmers
   Answer: B) To enhance the competitiveness of the agricultural sector
   Rationale: The act aims to improve productivity and efficiency in agriculture.
2. **Which government agency is primarily responsible for agricultural policy in the Philippines?**
   A) Department of Health
   B) Department of Agriculture
   C) Department of Education
   D) Department of Trade and Industry
   Answer: B) Department of Agriculture
   Rationale: The Department of Agriculture formulates and implements agricultural policies.
3. **What is the purpose of the Comprehensive Agrarian Reform Program (CARP)?**
   A) To increase agricultural exports
   B) To redistribute land to landless farmers
   C) To promote urban development
   D) To eliminate cooperatives
   Answer: B) To redistribute land to landless farmers
   Rationale: CARP aims to address land inequality and improve farmers' livelihoods.
4. **What is the significance of the Food Security Act in the Philippines?**
   A) It focuses only on urban food distribution
   B) It aims to ensure the availability and accessibility of food for all
   C) It limits agricultural production
   D) It ignores local farmers' needs
   Answer: B) It aims to ensure the availability and accessibility of food for all
   Rationale: The act addresses food security challenges and promotes sustainable practices.
5. **Which policy promotes the establishment of agricultural cooperatives?**
   A) The Cooperative Code of the Philippines
   B) The Land Use Act
   C) The Tariff and Customs Code
   D) The Agribusiness Law
   Answer: A) The Cooperative Code of the Philippines
   Rationale: This code provides the framework for cooperative development in the agricultural sector.

6. **What is the main purpose of the Philippine Rice Tariffication Law?**
   A) To eliminate rice imports
   B) To ensure stable rice prices through import tariffs
   C) To promote only local rice production
   D) To disregard farmer welfare
   Answer: B) To ensure stable rice prices through import tariffs
   Rationale: The law aims to manage rice supply and price stability through tariffs.

7. **What role does the National Food Authority (NFA) play in the Philippines?**
   A) It regulates education
   B) It oversees food safety
   C) It manages the supply and price stabilization of rice
   D) It focuses on industrial agriculture
   Answer: C) It manages the supply and price stabilization of rice
   Rationale: The NFA plays a crucial role in ensuring rice availability and affordability.
8. **What is the focus of the Agricultural Competitiveness Enhancement Fund (ACEF)?**
   A) To eliminate competition in agriculture
   B) To support farmers and enhance agricultural competitiveness
   C) To reduce government spending
   D) To promote urban agriculture only
   Answer: B) To support farmers and enhance agricultural competitiveness
   Rationale: ACEF provides financial assistance to improve productivity and competitiveness.
9. **Which policy encourages the use of organic farming practices?**
   A) The Organic Agriculture Act
   B) The National Land Use Act
   C) The Agricultural Modernization Act
   D) The Comprehensive Agrarian Reform Program
   Answer: A) The Organic Agriculture Act
   Rationale: This act promotes and supports organic farming in the country.
10. **What is the aim of the National Agricultural and Fisheries Modernization and Industrialization Plan?**
    A) To restrict agricultural technology
    B) To enhance the productivity and competitiveness of the agriculture and fisheries sectors
    C) To promote only traditional farming
    D) To limit investment in agriculture
    Answer: B) To enhance the productivity and competitiveness of the agriculture and fisheries sectors
    Rationale: The plan seeks to modernize and industrialize these sectors for better economic outcomes.
11. **What is the main objective of the Agrarian Reform Fund?**
    A) To provide loans to large agribusinesses
    B) To finance the implementation of agrarian reform programs
    C) To eliminate smallholder farmers
    D) To reduce agricultural production
    Answer: B) To finance the implementation of agrarian reform programs
    Rationale: The fund supports initiatives aimed at redistributing land and improving farmer livelihoods.
12. **Which of the following policies addresses climate change impacts on agriculture?**

A) The National Land Use Act
B) The National Climate Change Action Plan
C) The Tariff and Customs Code
D) The Food Security Act
Answer: B) The National Climate Change Action Plan
Rationale: This plan outlines strategies to enhance resilience in agricultural practices against climate impacts.

13. **What is the function of the Bureau of Agricultural Statistics (BAS) in the Philippines?**
    A) To implement agricultural projects
    B) To collect and analyze agricultural data
    C) To promote agricultural exports
    D) To regulate food prices
    Answer: B) To collect and analyze agricultural data
    Rationale: BAS provides essential statistical data for informed policy-making in agriculture.
14. **Which program aims to improve the access of small farmers to financial resources?**
    A) The Agrarian Reform Fund
    B) The Philippine Crop Insurance Corporation
    C) The Agricultural Competitiveness Enhancement Fund
    D) The National Irrigation Administration
    Answer: C) The Agricultural Competitiveness Enhancement Fund
    Rationale: ACEF supports small farmers by providing financial assistance and resources.
15. **What does the Philippine Fisheries Code aim to achieve?**
    A) To restrict fishing activities
    B) To promote sustainable fisheries management
    C) To eliminate small-scale fishers
    D) To prioritize aquaculture over capture fisheries
    Answer: B) To promote sustainable fisheries management
    Rationale: The code sets guidelines for sustainable practices in the fisheries sector.
16. **Which policy addresses rural development in the Philippines?**
    A) The National Land Use Act
    B) The Philippine Rural Development Plan (PRDP)
    C) The Organic Agriculture Act
    D) The National Irrigation Act
    Answer: B) The Philippine Rural Development Plan (PRDP)
    Rationale: PRDP focuses on enhancing rural livelihoods and promoting inclusive growth.
17. **What is the purpose of the Agricultural Insurance Program?**
    A) To eliminate risks in agriculture
    B) To provide financial protection to farmers against losses
    C) To reduce productivity
    D) To discourage farming activities
    Answer: B) To provide financial protection to farmers against losses
    Rationale: This program helps farmers recover from losses due to natural disasters and other risks.
18. **What is the significance of the National Organic Agriculture Program?**
    A) To promote chemical farming

B) To support the growth of organic farming in the Philippines
C) To limit agricultural practices
D) To encourage monoculture
Answer: B) To support the growth of organic farming in the Philippines
Rationale: The program promotes organic practices, ensuring food safety and environmental sustainability.

19. **What is the primary focus of the National Irrigation Administration (NIA)?**
    A) To restrict water access for farmers
    B) To develop and manage irrigation systems for agriculture
    C) To promote only rain-fed agriculture
    D) To ignore irrigation needs
    Answer: B) To develop and manage irrigation systems for agriculture
    Rationale: NIA ensures efficient water management to support agricultural productivity.
20. **What is the impact of the Agricultural Trade Liberalization Policy?**
    A) It protects local farmers from foreign competition
    B) It encourages importation and competition in the agricultural sector
    C) It limits agricultural exports
    D) It disregards market demands
    Answer: B) It encourages importation and competition in the agricultural sector
    Rationale: This policy aims to open the market, impacting local production dynamics.
21. **What is the role of the Department of Agrarian Reform (DAR)?**
    A) To support large landowners
    B) To implement agrarian reform and land distribution
    C) To eliminate cooperatives
    D) To focus only on industrial agriculture
    Answer: B) To implement agrarian reform and land distribution
    Rationale: DAR works towards equitable land distribution and improving farmers' livelihoods.
22. **Which program focuses on youth engagement in agriculture?**
    A) The Agrarian Reform Program
    B) The Young Farmers Program
    C) The National Organic Agriculture Program
    D) The Philippine Fisheries Program
    Answer: B) The Young Farmers Program
    Rationale: This program encourages young people to participate in and contribute to agricultural development.
23. **What does the Agricultural and Fisheries Modernization Act (AFMA) aim to achieve?**
    A) To restrict technological advancements in agriculture
    B) To promote modernization and competitiveness in agriculture and fisheries

C) To eliminate small farmers
D) To focus solely on traditional practices
Answer: B) To promote modernization and competitiveness in agriculture and fisheries
Rationale: AFMA seeks to enhance productivity through modernization efforts.

24. **What is the main goal of the National Agricultural and Fisheries Mechanization Program?**
A) To eliminate technology in farming
B) To promote the use of modern farming equipment and technologies
C) To restrict agricultural mechanization
D) To ignore mechanization needs
Answer: B) To promote the use of modern farming equipment and technologies
Rationale: This program encourages efficiency and productivity through mechanization.

25. **Which of the following is a primary concern of agricultural trade policies?**
A) Ensuring food security
B) Supporting only large agribusinesses
C) Limiting market access for imports
D) Ignoring local farmer needs
Answer: A) Ensuring food security
Rationale: Agricultural trade policies aim to balance trade with the goal of ensuring food availability and security for the population.

BIBLIOGRAPHY

Bonny, B.P.; Prasad, R.M.; Paulose, S. *Agro-Ecosystem Performance Index (API)—A Quantitative Approach to Evaluate the Sustainability of Rice Production Systems*; 1st ed.; J. Sustain. Agric.: 2010, 34, 758–777.

Chen, L.; Yang, L.; Ding, J. *Review on Full Counting Method and Fractional Counting Method in Scientometric Research*; 1st ed.; Libr. Inf. Serv.: 2018, 62, 132–141.

Chiou, H.K.; Tzeng, G.-H.; Cheng, D.C. *Evaluating Sustainable Fishing Development Strategies Using Fuzzy MCDM Approach*; 1st ed.; Omega Int. J. Manag. Sci.: 2005, 33, 223–234.

Dillon, E.J.; Hennessy, T.; Hynes, S. *Assessing the Sustainability of Irish Agriculture*; 1st ed.; Int. J. Agric. Sustain.: 2010, 8, 131– 147.

Gomez-Limon, J.A.; Riesgo, L. *Sustainability Assessment of Olive Groves in Andalusia: A Methodological Proposal*; 1st ed.; New Medit.: 2012, 11, 39–49.

Laajimi, A.; Ben Nasr, J. *Assessment of Sustainability and Comparison Between Organic and Conventional Farms in Tunisia: Case of Olive-Growing Activities in Sfax Region*; 1st ed.; New Medit.: 2009, 8, 10–19.

Liu, W.; Lin, K.; Jhan, H.; Lin, T.; Ding, D.; Ho, C. *Application of a Sustainable Fisheries Development Indicator System (SFDIS) for Better Management Outcomes in Taiwan Offshore and Coastal Fishery*; 1st ed.; Coast. Manag.: 2011, 39, 515–535.

Migliorini, P.; Scaltriti, B. *Evaluation of Sustainability of the Farms in the Agricultural Park of South Milan and Their Production Chain*; 1st ed.; New Medit.: 2012, 11, 53–56.

Pacini, C.; Wossink, A.; Giesen, G.; Vazzana, C.; Huirne, R. *Evaluation of Sustainability of Organic, Integrated and Conventional F arming Systems: A Farm and Field-Scale Analysis*; 1st ed.; Agric. Ecosyst. Environ.: 2003, 95, 273–288.

See, K.F.; Ibrahim, R.A.; Goh, K.H. *Aquaculture Efficiency and Productivity: A Comprehensive Review and Bibliometric Analysis*; 1st ed.; Aquaculture: 2021, 544, 736881.

About the Authors

The authors of Mastering Agriculture: Your Ultimate Guide to Acing the Board Exam are well-acclaimed professionals in agriculture, teaching, and public administration. They have a collective experience that bridges agricultural sciences, food systems, research, and governance, so the book becomes a comprehensive guide for aspiring agriculturists.

Dr. Magna Anissa Edding Aming-Hayudini, RN, RM, LPT, MAN, MPA, DPA, PD-SML, is a highly-acclaimed educator, health educator, and public administrator with strengths in internationalization and academic affairs. (MSU-Sulu)

Alwajir Tuttuh, BSA, L. Agri., MSFS, is a seasoned agri-specialist with a legacy of work involving food systems and sustainability. (MSU-Sulu)

Albert R. Cabolbol, licensed agriculturist and Master of Science in Farming Systems, upholding sustainable agriculture, is an instructional faculty at MSU-Lanao del Norte Agricultural College promoting ecologically-friendly farming techniques and innovative agricultural techniques towards a green future.

Merhama M. Sammah, BSA, MSA, is an expert in agricultural sciences and research, bringing rich insights into contemporary farming practices. (MSU-Sulu)

Nedzfa Abdurahman Ahajani, L. Agri., MSFS, has fabulous credentials in agricultural development and food security. (MSU-Sulu)

Fatima Sheirene Muktadir-Marajuli, L. Agri., MPA, MSFS, has background expertise in public administration, research and agriculture, with areas of interest being policy and governance in food systems. (MSU-Sulu)

Neriza J. Kiram, L. Agri., MSFS CAR, is dedicated to agricultural research and education promotion. (MSU-Sulu)

Abey K. Sobrepeña, L. Agri., is an experienced registered agriculturist who is very much interested in transforming farming. (MSU-Sulu)

Rasmalyn Sarahan Samla, L. Agri., has the expertise in agriculture and rural development. (MSU-Sulu)

Muksidal L. Hasim, BSA, is an agriculturist who practices sustainable farming. (MSU-Sulu)

Milda M. Aming, BSABM, MSFS, has extensive expertise in agribusiness and food systems. (MSU-Sulu)

Aldimar S. Murphy, L. Agri., MSFS(U), is an expert in agricultural education and research. (MSU-Sulu)

Munib J. Baki, BSA, MSFS(C), is dedicated to agricultural science and technology. (MSU-Sulu)

Rugiya J. Janing, BSA, MSFS(C), is an expert in modern farming techniques and methods. (MSU-Sulu)

The authors collectively bring much experience and knowledge to bear in this book, and it is an essential reference for candidates taking the agriculture board exam.