

Advanced Agricultural Science

Agriculture · Practice Test · 20 Questions

1. Which soil horizon, primarily consisting of partially weathered parent material, is located directly above the unweathered bedrock?

- A) O horizon
- B) A horizon
- C) B horizon
- D) C horizon

2. What is the primary function of the process known as 'nitrogen fixation' performed by Rhizobium bacteria?

- A) Converting atmospheric nitrogen into ammonia
- B) Decomposing organic plant matter
- C) Increasing soil salinity
- D) Accelerating soil erosion

3. Which irrigation method is specifically designed to minimize water loss through evaporation by delivering water directly to the root zone via a network of pipes?

- A) Surface irrigation
- B) Drip irrigation
- C) Flood irrigation
- D) Center pivot irrigation

4. In agricultural chemistry, which three primary macronutrients are typically represented by the NPK ratio on fertilizer labels?

- A) Nitrogen, Potassium, Phosphorus
- B) Nitrogen, Phosphorus, Potassium
- C) Nickel, Potassium, Phosphorus
- D) Nitrogen, Phosphorus, Krypton

5. What is the term for the agricultural practice of growing a single crop species over a wide area for consecutive seasons?

- A) Polyculture
- B) Monoculture
- C) Permaculture
- D) Intercropping

6. Which of the following is a physical characteristic of clay-heavy soil compared to sandy soil?

- A) Larger particle size
- B) High permeability
- C) Greater water-holding capacity
- D) Lower nutrient retention

7. What defines the term 'transpiration' in the context of plant physiology?

- A) Absorption of minerals by roots
- B) Loss of water vapor from plant leaves
- C) Conversion of light into glucose
- D) Structural support of the stem

8. Which method of pest control involves the introduction of a predator or parasite to manage a target pest population?

- A) Chemical control
- B) Biological control
- C) Mechanical control
- D) Cultural control

9. What occurs during the process of 'eutrophication' when agricultural runoff high in nitrates enters a water body?

- A) Increased biodiversity
- B) Excessive algal growth
- C) Water purification
- D) Improved oxygen levels

10. Which type of farming system integrates both livestock production and crop cultivation on the same landholding?

- A) Subsistence farming
- B) Mixed farming
- C) Nomadic herding
- D) Intensive aquaculture

11. What is the primary objective of 'no-till' farming in soil conservation?

- A) To increase soil temperature
- B) To reduce soil erosion and preserve soil structure
- C) To allow for easier fertilizer application
- D) To promote the growth of invasive weeds

12. Which plant hormone is primarily responsible for fruit ripening and is often used commercially in agriculture?

- A) Auxin
- B) Gibberellin
- C) Ethylene
- D) Absciscic acid

13. What is the term for the removal of nutrients from the soil by excessive rainfall, which then enter the groundwater?

- A) Leaching
- B) Salinization
- C) Calcification
- D) Capillarity

14. In livestock management, what is the 'gestation period' of a mammal?

- A) The time from birth to weaning
- B) The period of development from conception to birth
- C) The growth phase of the animal
- D) The interval between reproductive cycles

15. Which soil pH level is generally considered optimal for the majority of agricultural crops to maximize nutrient availability?

- A) 3.5 to 4.5
- B) 5.0 to 5.5
- C) 6.0 to 7.5
- D) 8.5 to 9.5

16. What is the primary component of the chemical compound 'lime' used by farmers to adjust soil acidity?

- A) Calcium carbonate
- B) Sodium chloride
- C) Potassium sulfate
- D) Magnesium oxide

17. Which agricultural term describes the intentional practice of rotating different types of crops on the same land to improve soil health?

- A) Fallowing
- B) Strip cropping
- C) Crop rotation
- D) Terracing

18. What is a 'legume' crop capable of doing that helps replenish soil nitrogen levels naturally?

- A) Fixing atmospheric nitrogen through symbiosis
- B) Absorbing excessive soil salt
- C) Producing complex carbohydrates
- D) Releasing carbon dioxide into the soil

19. Which layer of the atmosphere is most critical for providing the carbon dioxide required for photosynthesis?

- A) Stratosphere
- B) Troposphere
- C) Mesosphere
- D) Thermosphere

20. What is the main agricultural risk factor associated with improper irrigation management in arid regions?

- A) Soil salinization
- B) Increased oxygenation
- C) Reduced solar radiation
- D) Excessive nitrogen accumulation