

Advanced Agricultural Science

Agriculture · Answer Key · 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