

## **AI and Agriculture**

Artificial Intelligence (AI) is transforming modern agriculture by improving efficiency, productivity, and sustainability. AI-powered tools such as drones, sensors, and machine learning algorithms help farmers monitor crops, predict weather patterns, and optimize irrigation. Precision agriculture uses AI to analyze soil health and detect pests or diseases early, reducing the need for excessive pesticide use. Automated machinery, like self-driving tractors and robotic harvesters, enhances labor efficiency and reduces costs. AI-driven forecasting models help farmers make better decisions about planting and harvesting, leading to higher yields. Smart irrigation systems use AI to conserve water by analyzing soil moisture levels in real-time. Additionally, AI assists in supply chain management by predicting demand and preventing food wastage. Despite these advancements, challenges such as high costs and the need for technical knowledge remain. As AI continues to evolve, it promises to make agriculture more sustainable and resilient to climate change.

### **Multiple-Choice Questions**

1. How is AI transforming agriculture?
  - A) Increasing manual labor
  - B) Improving efficiency and productivity
  - C) Reducing technology use
  - D) Eliminating the need for farmers

2. What is an example of an AI-powered tool in agriculture?
  - A) Typewriters
  - B) Drones
  - C) Chalkboards
  - D) Bicycles
3. What do AI-powered drones help monitor?
  - A) Internet speeds
  - B) Crops and fields
  - C) Traffic patterns
  - D) Airplane routes
4. What does AI predict to help farmers?
  - A) Stock market trends
  - B) Weather patterns
  - C) Music preferences
  - D) Movie ratings
5. How does AI help optimize irrigation?
  - A) By randomly watering fields
  - B) By analyzing soil moisture levels
  - C) By using more water than needed
  - D) By stopping irrigation completely
6. What does precision agriculture use AI for?
  - A) Detecting pests and soil health
  - B) Replacing farm workers
  - C) Creating new pesticides
  - D) Eliminating all fertilizers

7. What benefit does automated machinery provide?
- A) Increases labor costs
  - B) Enhances efficiency and reduces costs
  - C) Eliminates crops
  - D) Slows down the farming process
8. What is an example of an AI-driven machine in farming?
- A) Self-driving tractors
  - B) Hand tools
  - C) Wooden plows
  - D) Steam engines
9. How does AI-driven forecasting benefit farmers?
- A) Predicts demand and prevents food wastage
  - B) Eliminates the need for storage
  - C) Reduces crop production
  - D) Stops farmers from planting crops
10. What is a key feature of smart irrigation systems?
- A) Uses AI to conserve water
  - B) Increases water wastage
  - C) Waters fields randomly
  - D) Stops watering crops
11. How does AI help reduce pesticide use?
- A) Detects pests early
  - B) Sprays chemicals randomly
  - C) Eliminates the need for monitoring
  - D) Increases pesticide production

12. How does AI assist in supply chain management?
- A) Predicts demand and prevents food waste
  - B) Slows down deliveries
  - C) Increases food spoilage
  - D) Reduces market availability
13. What is a major challenge of AI in agriculture?
- A) Too many farmers using it
  - B) High costs and technical knowledge requirements
  - C) Lack of interest in AI
  - D) Too much water availability
14. How does AI contribute to sustainability?
- A) Wastes natural resources
  - B) Makes farming more efficient and eco-friendly
  - C) Increases pollution
  - D) Eliminates organic farming
15. What is a limitation of AI in agriculture?
- A) AI completely replaces human decision-making
  - B) It requires significant investment
  - C) It eliminates all farming problems
  - D) It is available for free worldwide
16. How do AI-powered sensors help farmers?
- A) Detect soil conditions and crop health
  - B) Play music in the fields
  - C) Increase the use of harmful chemicals
  - D) Replace traditional seeds

17. What role does AI play in harvesting?
- A) It makes harvesting slower
  - B) It automates harvesting with robots
  - C) It removes the need for harvesting
  - D) It increases post-harvest losses
18. How does AI impact food production?
- A) Decreases food supply
  - B) Increases crop yields
  - C) Reduces soil fertility
  - D) Slows down planting
19. What does AI analyze to improve farming decisions?
- A) Soil data and weather conditions
  - B) Social media trends
  - C) Celebrity news
  - D) Car sales
20. How can AI make agriculture more resilient to climate change?
- A) By reducing crop variety
  - B) By helping farmers adapt to weather changes
  - C) By eliminating irrigation
  - D) By making farming unpredictable