# Class:9 Chapter:2 CROP PRODUCTION AND FARMING SYSTEM New Book Punjab Board

#### **Multiple Choice Questions (MCQs)**

- 1. What is the primary goal of crop rotation?
- a) Increase soil erosion
- b) Maintain soil fertility and reduce pests
- c) Grow the same crop every year d) Reduce biodiversity
- 2. Which crop is known for adding nitrogen to the soil?
- a) Wheat
- b) Rice
- c) Legumes (e.g., beans, peas)
- d) Corn
- 3. What is a common cropping pattern in the Indus Plains of Pakistan?
- a) Wheat-Rice rotation
- b) Maize-Potato rotation
- c) Barley-Fruit rotation
- d) Cotton-Sugarcane rotation
- 4. Which factor does NOT affect crop production?
- a) Climate
- b) Market demand
- c) Soil type

#### d) Farmer's favorite color

#### 5. What is the main benefit of intercropping?

- a) Increases soil erosion
- b) Reduces biodiversity
- c) Optimizes resource use and reduces pests
- d) Requires less labor
- 6. Which region in Pakistan is known for fruit orchards like apples and apricots?
- a) Indus Plains
- b) Coastal Areas
- c) Mountainous Regions (Khyber Pakhtunkhwa, Gilgit-Baltistan)

d) Arid Deserts

## Solved Short Questions

- 1. What is crop rotation, and why is it important? Crop rotation is the practice of growing different crops in a specific sequence on the same land. It improves soil fertility, reduces pests and diseases, and enhances crop yield.
- 2. Name two crops that are commonly grown in a wheat-rice rotation. The two crops commonly grown in a wheat-rice rotation are wheat (Rabi season) and rice (Kharif season).
- 3. How do legumes benefit the soil in a crop rotation system? Legumes (like peas and beans) fix atmospheric nitrogen in the soil through root nodules, enhancing soil fertility for subsequent crops.
- 4. What is the main challenge of farming in arid regions of Pakistan? The main challenge is water scarcity due to low rainfall and lack of reliable irrigation sources.
- 5. What is intercropping, and how does it help farmers? Intercropping is the practice of growing two or more crops together in the same field. It optimizes land use, reduces pest attacks, and increases total yield.
- 6. Why is terracing used in mountainous regions for farming? Terracing prevents soil erosion, conserves water, and creates level surfaces for cultivation on steep slopes.
- 7. What is the limitation of Mono-Cropping? Mono-cropping leads to nutrient depletion in the soil and increases vulnerability to pests and diseases.

#### Long Question 1:

Explain the economic significance of major crops grown in Pakistan.

#### Answer:

Agriculture plays a key role in Pakistan's economy. The country depends heavily on its **major crops** for food, employment, and industrial development. These crops include **wheat, rice, cotton, sugarcane, and maize**, each of which contributes significantly to national prosperity.

#### *≢* 1. Wheat:

- Wheat is the **staple food crop** of Pakistan.
- It is mainly grown in Punjab and Sindh provinces.
- It ensures **food security** for the population and is part of every household's diet.
- Its production helps reduce dependence on imported food.

#### *∉* 2. *Rice:*

- Rice is one of the **top export crops**.
- Basmati rice, known for its quality, is highly demanded globally.
- It earns valuable foreign exchange, strengthening the economy.
- Major rice-growing areas include Punjab and Sindh.

#### *∉* 3. Cotton:

- Cotton is the **backbone of Pakistan's textile industry**, which is the largest industrial sector.
- It supports thousands of textile mills and ginning factories.
- Cotton-related exports (fabric, garments, yarn) form a major portion of Pakistan's exports.

#### *∉* 4. Sugarcane:

- Sugarcane is used in the **sugar industry** to produce sugar and ethanol.
- It also provides raw material for industries like paper, alcohol, and chipboard.
- Sugarcane farming supports rural employment and economic activity.

## *♦* 5. Maize (Corn):

- Maize is a fast-growing crop used in **food**, **poultry feed**, **and industrial products**.
- It supports the **poultry industry**, which is a major contributor to GDP.
- It's gaining importance due to increasing demand for animal feed.

## *♦* Overall Economic Role:

- Agriculture provides employment to nearly 38% of the labor force.
- Contributes around **19–20% to the GDP**.
- Supplies raw material to industries, especially textile and food processing.

• Helps in **poverty reduction** by supporting the rural population.

## **Conclusion:**

Major crops in Pakistan are not only essential for food and exports, but also serve as a lifeline for rural development, employment, and industrial progress.

# Long Question 2:

## How do climate and water availability play a role in cropping pattern?

## Answer:

**Climate** and **water availability** are the most critical factors that affect **cropping patterns** in Pakistan. These elements determine what crops can be grown, when they are sown, and how much yield they can produce.

## *♦* 1. Role of Climate:

- **Temperature**, **rainfall**, **humidity**, and **sunlight** are key climatic factors.
- Different crops need different climates. For example:
  - **Rice** needs high temperature and heavy rainfall.
  - Wheat prefers moderate temperatures and dry weather.
- Climate affects the growing season:
  - Kharif crops (e.g., rice, cotton, maize) are grown in summer (June–October).
  - Rabi crops (e.g., wheat, barley, mustard) are grown in winter (October-April).
- Climate change (like extreme heat, drought, and floods) is altering traditional cropping patterns.

## *\$* 2. Role of Water Availability:

- Pakistan has an arid to semi-arid climate, so irrigation is vital.
- Major sources of water:
  - Indus River System (canals, barrages)
  - Tube wells and groundwater
- Crops like sugarcane and rice need more water and are grown in well-irrigated areas.
- Crops like millet, pulses, and barley are grown in rain-fed or low-water regions.
- Water shortage limits the area under cultivation and forces farmers to shift to low-water crops.

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- **Punjab and Sindh:** Rich in canal irrigation support wheat, sugarcane, rice, and cotton.
- Balochistan and KPK: Face water scarcity grow pulses, fruits, and vegetables.

• Barani (rain-fed) areas: Depend on rainfall and prefer drought-resistant crops.

#### *<i>Conclusion:*

The cropping pattern of a region is shaped by the local climate and the availability of water. A sustainable cropping pattern must consider both elements to ensure good yield, food security, and environmental health.

# **Inquisitive Questions**

1. If you were a farmer in a water-scarce region, which cropping pattern would you choose and why?

## Answer:

If I were a farmer in a water-scarce region, I would choose a drought-resistant and low-water cropping pattern. This means selecting crops that require minimum irrigation, grow quickly, and can survive in dry soil conditions.

## Suitable Crops: ⊗

Millets (e.g., Bajra, Jowar) – grow well with very little water.

Pulses (e.g., Moong, Masoor) – not only need less water but also improve soil fertility.

Oilseeds (e.g., Mustard, Sunflower) – can grow in dry climates and have good market value.

Suitable Cropping Techniques:

Intercropping: Helps reduce water evaporation from soil and makes efficient use of land.

Mulching: Keeps the soil moist for a longer time.

Drip irrigation: Delivers water directly to plant roots, saving up to 60–70% water.

## ✓ Reason:

Water-scarce areas cannot support crops like rice or sugarcane. So choosing crops that can thrive in harsh conditions ensures survival, food production, and even profit for the farmer.

## Conclusion:

Choosing the right cropping pattern based on water availability helps reduce crop failure, supports sustainable farming, and protects farmers from losses.

2. How can modern technology improve the efficiency of crop rotation and intercropping systems?

Answer:

Modern technology plays a powerful role in improving crop rotation and intercropping systems by helping farmers make smarter decisions, increase productivity, and reduce waste.

## 1. Precision Agriculture Tools:

Use of drones, GPS, and satellite imagery to monitor crop health and soil conditions.

Helps farmers understand which crops to plant and when to rotate for maximum yield.

# ♦ 2. Soil Sensors and Testing:

Sensors detect soil moisture, pH, and nutrients, guiding crop selection and rotation timing.

Prevents overuse of fertilizers and maintains soil balance.

# 3. Farm Management Software:

Tracks crop cycles, weather forecasts, and irrigation needs.

Farmers can plan intercropping more efficiently to prevent resource competition between crops.

## ♦ 4. Drip Irrigation & Automated Systems:

Makes intercropping feasible by delivering water and nutrients precisely to multiple crops.

## ♦ 5. Biotechnology:

Develops crop varieties that are pest-resistant and drought-tolerant, improving success rates in rotation cycles.

# Conclusion:

Technology makes agriculture data-driven, helping farmers adopt crop rotation and intercropping with confidence. This improves yield, saves resources, and ensures long-term sustainability of land.