

II. Very short answer type questions

A. Give one word for the following.

1. Plants of the same kind grown on a large scale for food, clothing etc.
2. The process of loosening and turning the soil
3. Tools needed to carry out agricultural practices
4. Natural or chemical substances that contain one or more nutrients for plant growth
5. Artificial application of water to soil
6. A chemical used to destroy weeds
7. The process of removing weeds
8. The process of cutting and gathering of crops
9. A place where bulk storage of grains is done
10. Rearing animals on a large scale for food and other needs

Crops

Tilling or Ploughing

Implements

Fertilizers

Irrigation

Weedicides

Weeding

Harvesting

Granary or Silo

Animal husbandry

B. Give two examples for the following.

1. Kharif crops
2. Cereal crops
3. Rabi crops
4. Traditional methods of irrigation
5. Implements used for manual weeding
6. Common weeds
7. Commonly used weedicides
8. Leguminous plants
9. Animals from which we get milk
10. Birds from which we get eggs to eat

Kharif crops: Paddy, Maize

Cereal crops: Wheat, Rice

Rabi crops: Wheat, Gram

Traditional methods of irrigation: Moat, Rahat

Implements used for manual weeding: Trowel, Hoe

Common weeds: Amaranthus, Chenopodium

Commonly used weedicides: 2, 4-D, Glyphosate

Leguminous plants: Pea, Gram

Animals from which we get milk: Cow, Buffalo

Birds from which we get eggs to eat: Hen, Duck

III. Short answer type questions

1. Define agriculture:

Ans: Agriculture is the practice of growing crops and rearing animals for food, clothing, and other human needs.

2. What are crops? Name two types of crops on the basis of their growing season:

Ans: Crops are plants grown on a large scale for food or other uses.

Types: Kharif crops (e.g., paddy, maize), Rabi crops (e.g., wheat, gram).

3. Why do we need to prepare the soil before growing a crop?

Ans: It helps in loosening the soil for better air circulation, root penetration, and nutrient absorption.

4. Why does the soil need levelling?

Ans: Levelling prevents waterlogging, ensures uniform distribution of water, and makes sowing easier.

5. What does NSC stand for? What role does it play in agriculture?

Ans: NSC stands for National Seeds Corporation. It provides high-quality certified seeds to farmers.

6. What should we keep in mind while sowing seeds?

Ans: Proper distance between seeds and correct depth to ensure good germination and growth.

7. What are two most common disadvantages of manual weeding?

Ans: It is labor-intensive and time-consuming.

8. Why should we not use chemical weedicides and pesticides?

Ans: They may harm the environment, beneficial insects, and contaminate soil and water.

9. What kind of a place is ideal for storage of harvested grains?

Ans: A dry, clean, and rodent-free place such as granaries or silos.

10. What is animal husbandry?

Ans: Animal husbandry is the practice of rearing animals on a large scale for milk, meat, wool, and other uses.

IV. Long answer type questions

1. Describe the various steps involved in preparing the soil.

Ans: The preparation of soil is crucial for ensuring a healthy crop yield. The various steps involved in soil preparation are as follows:

1. **Ploughing (or Tilling):**

- * Ploughing is the first step in preparing the soil. It involves loosening and turning the soil using a plough or tiller.
- * This process aerates the soil, allowing air to reach the roots of the plants and improving root growth.
- * It also helps in breaking up compacted soil, making it easier for plants to grow and absorb nutrients.

2. **Levelling:**

- * After ploughing, the soil is uneven, with large clumps and furrows.
- * Levelling is done using a leveler to break these clumps and create an even surface.
- * Proper levelling ensures that water is evenly distributed across the field and prevents water logging, which can damage crops.

3. **Manuring:**

- * Manuring involves adding organic matter (like compost or manure) or chemical fertilizers to the soil.
- * This replenishes the soil's nutrients, ensuring that it is rich in elements like nitrogen, phosphorus, and potassium, which are essential for plant growth.
- * Manuring also improves the soil's structure, making it more fertile and productive.

These steps, when done properly, ensure that the soil is fertile, well-drained, and ready for the sowing of seeds, leading to healthier crops and better yields.

2. What are fertilizers? Why is it important to add them to soil? Differentiate between natural and chemical fertilizers.

Ans: Fertilizers are substances that are added to soil or plants to supply essential nutrients required for plant growth. They can be in the form of organic (natural) or synthetic (chemical) compounds and contain key nutrients like **nitrogen (N)**, **phosphorus (P)**, and **potassium (K)**, often referred to as **NPK**. Fertilizers help improve soil fertility and increase crop yield.

Why is it Important to Add Fertilizers to Soil?

- * **Nutrient Deficiency Prevention:** Soil may lack essential nutrients due to previous crops depleting them. Fertilizers restore these nutrients and maintain soil health.
- * **Promote Growth:** Fertilizers supply nutrients that promote healthy plant growth, root development, and flowering.
- * **Increase Yield:** Fertilizers improve the productivity of the soil and lead to higher crop yields, ensuring food security.
- * **Soil Fertility:** Regular addition of fertilizers helps in maintaining soil fertility, ensuring that crops grow efficiently and produce quality products.

Difference Between Natural and Chemical Fertilizers:

Aspect	Natural Fertilizers	Chemical Fertilizers
Source	Derived from organic matter like compost, manure, or plant/animal residues.	Synthetic or manufactured, derived from chemicals or minerals.
Nutrient Content	Provides a wide range of nutrients but in small amounts.	Provides concentrated nutrients (usually NPK) in precise proportions.
Effect on Soil	Improves soil structure, water retention, and microbial activity.	Can improve immediate nutrient availability but may reduce soil fertility over time if used excessively.
Release of Nutrients	Nutrients are released slowly, over time.	Nutrients are released quickly, leading to fast plant growth.
Environmental Impact	Eco-friendly, less risk of polluting the environment.	Overuse can lead to soil degradation, water pollution, and harm to beneficial organisms.
Cost	Generally less expensive but requires larger quantities.	More expensive but more concentrated, leading to smaller quantities needed.

Conclusion:

While **natural fertilizers** are eco-friendly and improve long-term soil health, **chemical fertilizers** offer rapid results in terms of growth and yield. A balanced approach to using both types of fertilizers can lead to sustainable and productive farming.

3. Explain the various methods of irrigation involved in agriculture.

Ans: Irrigation is essential for supplying water to crops, particularly in regions with insufficient rainfall. There are several methods of irrigation, each with its own advantages and limitations:

1. Traditional Methods of Irrigation:

a. Surface Irrigation:

- * **Description:** Water is allowed to flow over the soil and reach the plant roots either through flooding or furrows.
- * **Advantages:** Simple and inexpensive.
- * **Disadvantages:** Wastes water due to evaporation and uneven distribution.

b. Well Irrigation:

- * **Description:** Water is drawn from wells using pumps or manually and directed to fields.
- * **Advantages:** Useful for areas with groundwater availability.
- * **Disadvantages:** Overuse can deplete groundwater levels.

2. Modern Methods of Irrigation:

a. Drip Irrigation:

- * **Description:** Water is directly supplied to the base of each plant through a network of pipes and drippers.
- * **Advantages:** Highly water-efficient, reduces wastage, and prevents soil erosion.
- * **Disadvantages:** High installation cost.

b. Sprinkler Irrigation:

- * **Description:** Water is sprayed over crops in the form of droplets, mimicking rainfall.
- * **Advantages:** Suitable for uneven terrain and a wide variety of crops.
- * **Disadvantages:** Requires energy for pumps and may not be suitable for very windy areas.

4. What are the various ways in which we protect crops from weeds and pests?

Ans: To ensure healthy crop growth and high yields, crops need protection from **weeds** and **pests**. The following are the main ways to protect crops:

Protection from Weeds:

a. Manual Weeding:

- * **Description:** Weeds are removed manually using tools like hoes or by hand.
- * **Advantages:** Safe, eco-friendly, and ensures selective removal of unwanted plants.
- * **Disadvantages:** Labor-intensive and time-consuming.

b. Chemical Control (Weedicides):

- * **Description:** Chemical substances called **weedicides** are used to kill or control weed growth.
- * **Advantages:** Effective, fast, and covers large areas.
- * **Disadvantages:** Can be harmful to the environment, beneficial organisms, and soil health if overused.

Protection from Pests:

a. Chemical Control (Pesticides):

- * **Description:** Pesticides are chemicals sprayed on crops to kill or control harmful insects and pests.
- * **Advantages:** Quickly controls pest infestations.
- * **Disadvantages:** Can lead to pesticide resistance, harm beneficial insects, and contaminate the environment.

b. Biological Control:

- * **Description:** Using natural predators, parasites, or pathogens (e.g., ladybugs to eat aphids) to control pest populations.
- * **Advantages:** Eco-friendly and sustainable method.
- * **Disadvantages:** May not be as fast-acting as chemical pesticides and is specific to certain pests.

Conclusion:

Combining methods like **manual weeding**, **weedicides**, **pesticides**, and **biological control** can effectively protect crops from weeds and pests. The choice of method depends on factors such as crop type, pest severity, and environmental considerations.

5. How can we ensure increase in crop yield?

Ans: To ensure an increase in crop yield, **mixed cultivation** and **crop rotation** are effective traditional agricultural practices.

Mixed cultivation involves growing two or more different crops together on the same field, such as legumes with cereals.

This allows for efficient use of soil nutrients, reduces the risk of total crop failure, and helps control pests and diseases naturally.

Crop rotation, on the other hand, is the practice of growing different types of crops in the same field in successive seasons. For example, rotating nitrogen-fixing legumes with nutrient-demanding cereals helps maintain soil fertility and structure. This practice also disrupts the life cycles of pests and diseases, reducing the need for chemical pesticides.

Together, these methods improve soil health, enhance biodiversity, and lead to sustainable increases in crop productivity.