CHAPTER – 1

CROP PRODUCTION AND MANAGEMENT

EXERCISES

1 Mark Questions

Q1: What is a crop?

Answer: Crop is a term used to describe a plant that is grown on a huge scale on a field. For instance, cereal crops and wheat crops.

Q2: What do you mean by the term agricultural practice?

Answer: Agricultural practices are the procedures that must be followed throughout the production of crops.

Q3: Explain the Kharif crop?

Answer: The crops which are sown in the rainy season are called Kharif crops. The rainy season in India is *generally* from June to September. Paddy, maize, soyabean, groundnut and cotton are Kharif crops.

Q4: What are weedicides? Give some examples

Answer: Weedicides are the chemicals that are used to remove weeds. Some commonly used weedicides are 2, 4-D and metachlor.

Q5: Explain the concept of transplantation.

Answer: Some crops are grown in nurseries before being transplanted to the main field. This is referred to as transplanting.

Q6: Name any two fertilizers?

Answer: NPK, Diammonium phosphate

Q7: What are the advantages of manure?

Answer:

- It enhances water-holding capacity of soil.
- It improves soil quality.
- It promotes the growth of soil friendly microbes.
- It is renewable, biodegradable and eco-friendly.

Q8: Name the methods applied for weeding

Answer:

- Manual method
- Chemical method
- Biological method

Q9: What is irrigation?

Answer: Irrigation is the artificial process of watering plants in order to aid in their growth.

Q10: What are the sources of irrigation?

Answer: Wells, tube wells, ponds, lakes, etc...

Q11: Give two examples of each.

(a) Kharif crop

(b) Rabi crop

Answer:

Kharif crops – Paddy and maize, Rabi crops – Wheat and pea

2 Mark Questions

Q1: Why is the depth at which seeds are placed necessary?

Answer: If the seed is planted too deeply, it will not receive sufficient sunshine to germinate. If the seed is put too deeply, it will not receive enough soil to germinate. The depth at which you plant seed is also determined by the size of the seed.

Q2: How can nitrogen be naturally supplied in soil?

Answer: Nitrogen can be organically supplied in soil through crop rotation with a leguminous crop. Nitrogen-fixing bacteria are found in the root nodules of leguminous plants such as peas, beans, soybeans, peanuts, and others. Rhizobium, a nitrogen-fixing bacteria, converts atmospheric nitrogen (N2) into ammonium (NH4+), which plants utilize.

Q3: Why sowing seeds with seed drill is better than broadcasting?

Answer: Seed drills sow seeds uniformly at appropriate distances and depths, whereas broadcasting scatters seeds non-uniformly across the ground surface, where birds can pick them up.

Q4: What exactly is biological pest control? What are the advantages?

Answer: Biological pest control is a method of controlling pests such as insects, mites, and weeds with the help of other living creatures. The controlling agents are extremely picky about their host pest. Lady bugs, for example, manage aphids, mites, scale insects, and other pests that affect crops. On a cotton plant, a wasp consumes bollworms or other caterpillars.

The following are the advantages of biocontrol agents:

- less expensive
- Protect the crop throughout the growing season.
- Eco-friendly
- Humans are not harmed by it, and it benefits the environment and wildlife.

Q5: Why should you wash fruits and vegetables before eating them?

Answer: Many pesticides employed during agricultural production procedures, as well as various microorganisms and dust, may be found on fruits and vegetables.

Q6: Explain the differences between Fertiliser and Manure?

Answer:

S. No.	Fertiliser	Manure
1.	Fertiliser is a man-made inorganic salt.	Manure is a natural substance obtained by the decomposition of cattle dung and plant residues.
2.	Fertiliser is prepared in factories	Manure can be prepared in the fields
3.	Fertiliser does not provide any humus to the soil	Manure provides a lot of humus to the soil
4.	Fertilisers are very rich in plant nutrients like nitrogen, nutrients, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

Q7: If wheat is sown in the Kharif season, what would happen? Discuss.

Answer:

Wheat crops may get destroyed if sown in the Kharif season because of unfavourable temperatures, pests and adaptable conditions for the plants to grow. Kharif comes during the rainy season; hence it is not a wise idea to grow wheat in the Kharif season.

Q8: Explain how soil gets affected by the continuous plantation of crops in a field.

Answer: Plants require nutrients for their growth. Without optimum nutrients, plants will die. Continuous plantation of crops results in the depletion of certain nutrients like Nitrogen, Phosphorus, Potassium, etc. This results in a decrease in yield due to loss of nutrients; hence there should be a gap between crops in order to get a good yield.

Q9: What are weeds? How can we control them?

Answer: In a field, many other undesirable plants may grow naturally along with the crop. These undesirable plants are called weeds. Weeds can be controlled by methods called weeding. Tilling before sowing the crops helps in uprooting and killing weeds, which may then dry up and get mixed with the soil. Weeds are also controlled by using certain chemicals called weedicides.

5 Mark Questions

Q1: What do you mean by the term crop? Explain briefly the types of crops.

Answer:

- Crop is a term used to describe a plant that is grown on a huge scale on a field. Cereal crops, pulse crops, and fruit crops are examples.

- India's crops are divided into two seasons: kharif and Rabi.
- Kharif crops are planted in the rainy season around June/July and harvested around September/October. As a result, they are sometimes known as summer crops. For example, rice, maize, and so on.

- Rabi crops are planted in the winter months of October or November and harvested in March/April. As a result, they are sometimes known as winter crops. For instance, mustard, wheat, potato, and so on.

Q2: Define the word "agricultural practices" and list the key steps involved in crop production.

Answer:

Agricultural practices are those that entail the actions that must be performed in order to produce crops. To guarantee that crops are produced on schedule, a variety of agricultural production processes must be carried out with extreme caution.

The following are a few of the most crucial actions made during crop production:

- preparing the soil
- Seeding
- Feeders and manure are added
- Watering
- Grasping
- Gathering
- Winnowing and threshing
- Grain storage

Q3: What is irrigation? Describe two methods of irrigation which conserve water.

Answer:

Irrigation is the artificial process of providing water to plants to promote their growth. There are two primary techniques for irrigation:

a) Drip Irrigation: Here, the water goes drop by drop directly into the roots; this method is very useful as it conserves the water and also helps in avoiding weeds.

b) Sprinkler system: This method is in use mainly in uneven land where sufficient water is not available. The perpendicular pipes, having rotating nozzles on top, are joined to the main pipeline at regular intervals. When water is allowed to flow through the main pipe under pressure with the help of a pump, it escapes from the rotating nozzles. It gets sprinkled on the crop as if it is raining.

Q4: What does tilling or plowing entail? List its benefits.

Answer:

Tilling and plowing are terms used to describe the loosening and turning of the soil. To do this, a plough is used. Iron or wood are used to make ploughs.

The benefits of tilling or plowing are as follows:

- The process of plowing aerates and loosens the soil.
- It aids in evenly blending organic particles into the soil.
- It keeps the soil fertile by promoting the growth of natural agents and microbes.
- It makes the soil more capable of retaining water.
- It facilitates the roots' simple insertion into the soil.

Q5: Write short note on the terms:

- **Storage**
- **Harvesting**

Answer:

- Storage: Storage of produce is an important task. The crop grains must be protected from moisture, insects, rodents, and microbes if they are to be stored for an extended period of time. The grains are thoroughly dried in the sun to remove moisture before storing. This stops germs, fungus, and insect pests from attacking. Farmers store grains in metal bins or jute bags. To keep pests like rats and insects at bay, grains are kept in silos and granaries for large-scale storage.
- Harvesting: One of the most crucial tasks following crop maturity is harvesting. Crops are pulled out or trimmed close to the ground during harvesting. A cereal crop matures in about 3 to 4 months on average. In our nation, harvesting is either done manually with a sickle or with a machine known as a harvester.

Q6: Write a paragraph in your own words on each of the following.

(a) Preparation of soil

(b) Sowing

(c) Weeding

(d) Threshing

Answer:

a) Preparation of the soil is the first step in agriculture. Preparation of the soil is done to loosen the soil, which is essential for root penetration into the soil. This allows the roots to breathe easily. Loosening of the soil allows the growth of earthworms and microorganisms, which will help to keep the soil fertile by adding humus to the soil. Loosening of soil also brings nutrient-rich soil to the top layer, which is essential for the growth of plants.

b) Sowing is an important process in crop production. First, healthy seeds are selected before sowing. After selecting healthy seeds, sowing is done by either traditional methods or by using the equipment's seed drill.

c) Removal of unnecessary plants from the field is called weeding. Weeds compete with crop plants for nutrients and water. This will reduce the yield of the desired crops. Weeds also interfere while harvesting and get mixed with crops. Some weeds are poisonous to animals and humans. Tilling is a common method that helps remove weeds before sowing crops, and manual methods like the physical removal of plants are also used to remove weeds. Weedicides are sprayed to get rid of weeds, but this method may affect the health of farmers because of the chemicals used as weedicides.

d) Process of separating the chaff from the crop is known as threshing. Threshing is carried by a machine called 'combine', which is a harvester as well as a thresher. Threshing is also done by winnowing, where the blow of air is used to separate the chaff from crops

Fill in the blanks

1:_____crop is harvested in October.

Answer: kharif

2: The kind of crop grown only for sale profit is _____.

Answer: Cash crop

3: _____ is used to till the soil in agriculture.

Answer: Pillar

4: _____ improves the texture of the soil.

Answer: Manure

5: Kharif crops are sown in _____ season.

Answer: Rainy

6: Products obtained from the crops are called _____.

Answer: Produce

7: The method of irrigation in which emitters let out a trickle of water near the roots is called_____.

Answer: Drip irrigation

8: Farmer's friend_____.

Answer: Earthworm

9: Leguminous plants fix _____ in the soil.

Answer: nitrogen

10: Cod liver oil is rich in _____.

Answer: Vitamin

11: Select the correct word from the following list and fill in the blanks.

Float, water, crop, nutrients, preparation

(a) The same kind of plants grown and cultivated on a large scale at a place is called _____.

(b) The first step before growing crops is _____ of the soil.

(c) Damaged seeds would _____ on top of water.

(d) For growing a crop, sufficient sunlight and _____ and _____ from the soil are essential.

Answers:

(a) The same kind of plants grown and cultivated on a large scale at a place is called the **crop**.

(b) The first step before growing crops is the **preparation** of the soil.

(c) Damaged seeds would **float** on top of the water.

(d) For growing a crop, sufficient sunlight and **water** and **nutrients** from the soil are essential.

Multiple Choice Questions

1: Products obtained from the crops are called

(a) yield
(b) produce
(c) crop
(d) fertilisers

Answer: (b) produce

2:The practice of growing two or more dissimilar crops in the same field one after another is

(a) Crop rotation
(b) tilling
(c) plantation
(d) weeding

Answer: (a) Crop rotation

3: The unwanted plants that grow along with the crops are called

(a) Fertilisers
(b) manure
(c) weeds
(d) kharif crops

Answer: (c) weeds

4:The chemical substances rich in nutrients are called

(a) fertilisers
(b) weedicides
(c) pesticides
(d) herbicides

Answer: (a) fertilisers

5: Which of the following is not provided to the soil by a chemical fertiliser?

(a) Nitrogen
(b) Humus
(c) Potassium
(d) Phosphorus

Answer: (b) Humus

6: Which of the following is not a kharif crop?

(a) Paddy
(b) Maize
(c) Groundnut
(d) Peas

Answer: (d) Peas

7: Levelling of soil helps to prevent

(a) soil erosion
(b) cultivation
(c) sowing
(d) drought

Answer: (a) soil erosion

8: The ideal months for harvesting kharif crop are

(a) June/July
(b) August/September
(c) September/October
(d) November/December

Answer: (c) September/October

Matchings

Match items in column A with those in column B

A	B
(i) Kharif crops	(a) Food for cattle
(ii) Rabi crops	(b) Urea and super phosphate
(ii) Rabi crops	(c) Animal excreta, cow dung urine and plant waste
(iv) Organic manure	(d) Wheat, gram, pea
	(e) Paddy and maize

Answer:

(i) Kharif crops	(e) Paddy and maize
(ii) Rabi crops	(d) Wheat, gram, pea
(ii) Rabi crops	(b) Urea and super phosphate
(iv) Organic manure	(c) Animal excreta, cow dung urine and plant waste

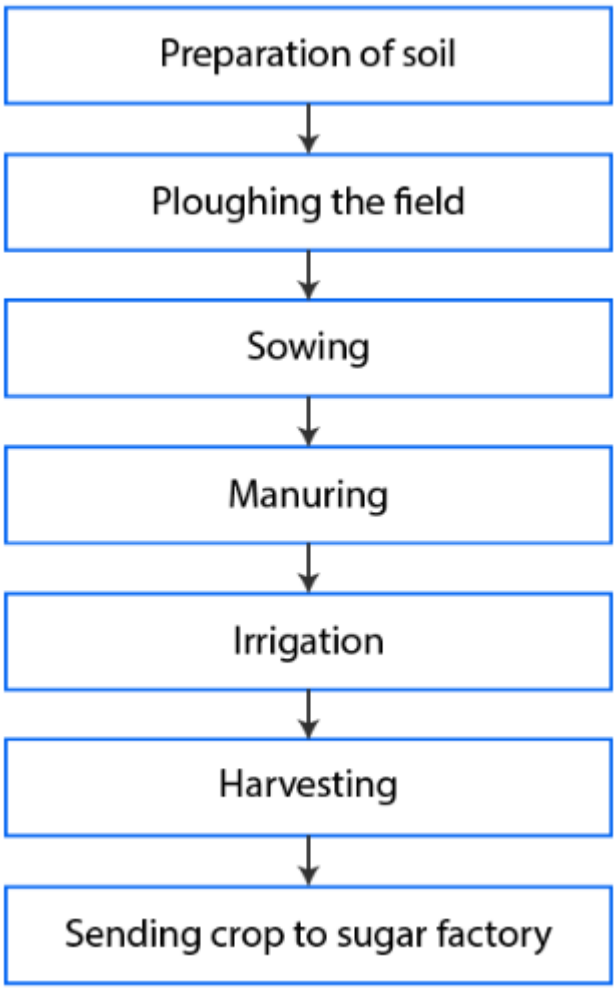
Flow Chart

Arrange the following boxes in proper order to make a flow chart of sugarcane crop production.

Sending crop to sugar factory	Irrigation	Harvesting	Sowing
1	2	3	4

Preparation of soil	Ploughing the field	Manuring
5	6	7

Answer: **FLOW CHART OF SUGARCANE CROP PRODUCTION**



PUZZLE

Complete the following word puzzle with the help of the clues given below.

Down

1. Providing water to the crops.

2. Keeping crop grains for a long time under proper conditions.

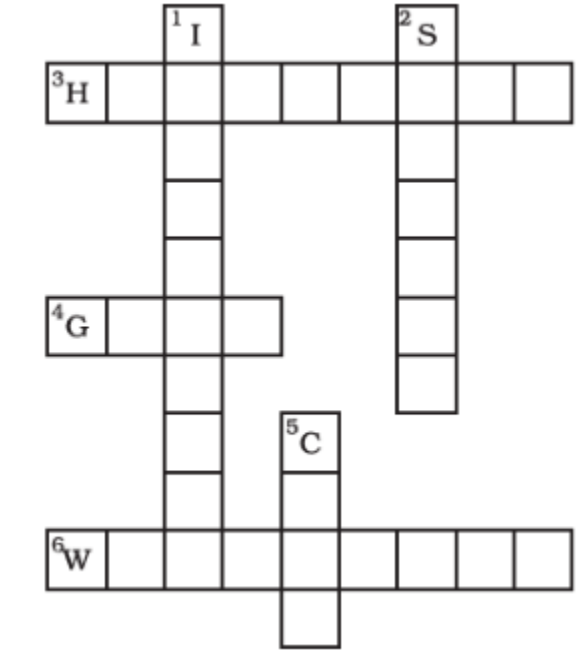
5. Certain plants of the same kind are grown on a large scale.

Across

3. A machine used for cutting the matured crop.

4. A rabi crop, which is also one of the pulses.

6. A process of separating the grain from the chaff.



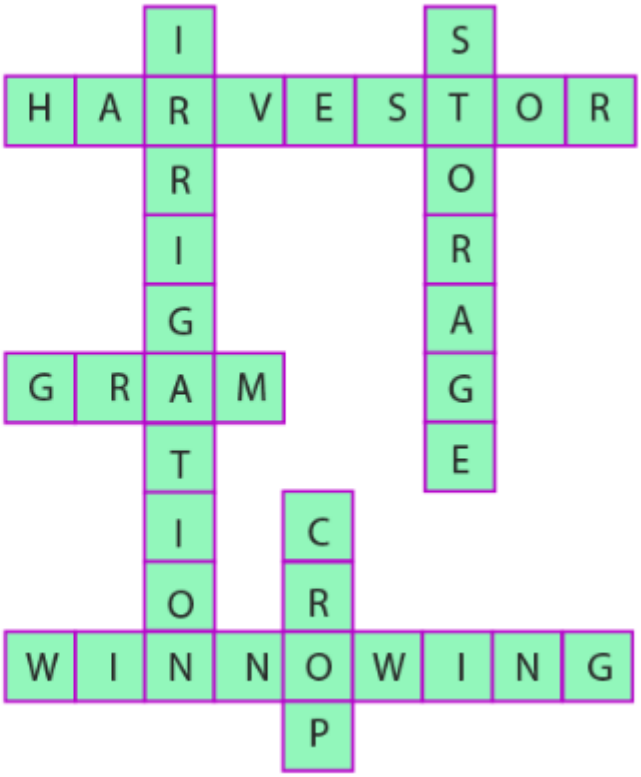
Answer:

DOWN ↓

1. IRRIGATION
2. STORAGE
5. CROP

ACROSS →

3. HARVESTOR
4 . GRAM
6. WINNOWING



SUMMARY

- Agriculture is the practice of growing plants and rearing animals on a large scale for food and other useful products.
- Cultivation of crops involves several techniques and activities that farmer has to undertake. These are collectively termed as agricultural practices.
- Agricultural practices include preparation of soil, sowing seeds, replenishing soil with nutrients, irrigating the field, protection from pests and weeds, harvesting, threshing, and winnowing and storage of the produce.
- Preparation of soil involves turning and loosening of soil and then levelling it. Turning and loosening of soil is called ploughing/tilling. It has several advantages
  (a) Loose soil allows roots to breathe easily.
  (b) It helps the root to penetrate deeper.
  (c) It promotes the growth of earthworms and other microbes that further aid in this process.
  (d) It brings nutrient rich soil on the top so that minerals can be used efficiently by the plants.
  Ploughs and levelers are used for this purpose.
- Sowing of seeds at appropriate depth and distance gives a good yield. Good variety and healthy seeds should be selected for sowing. Sowing can be done manually or by using a seed drill.
- In case the seeds of a particular crop are not viable, the technique of transplantation is used wherein healthy seedlings from the nursery are transferred to the main field, eg, paddy, chillies, some flowering plants etc.
- To get a good yield, soil needs replenishment and enrichment through the use of organic manures and fertilisers.
- Natural methods of soil replenishment include field fallow, crop rotation and mixed cropping techniques.
- Supply of water to crops at appropriate intervals is called irrigation.
- Weeding involves removal of unwanted and uncultivated plants called weeds manually, mechanically or by using chemicals called weedicides.
- Harvesting is the process of cutting of the mature crops manually or by machines.
- Separation of grains from the harvested crop is called threshing.
- Removing chaff from grains using wind is called winnowing.
- Proper storage of grains is necessary to protect them from pests and microorganisms.
- Crop production can be increased by increasing the land under cultivation, by improvement in methods of agriculture or by developing better varieties of crops
-