CROP PRODUCTION AND MANAGEMENT

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

Float, water, crop, nutrients, preparation

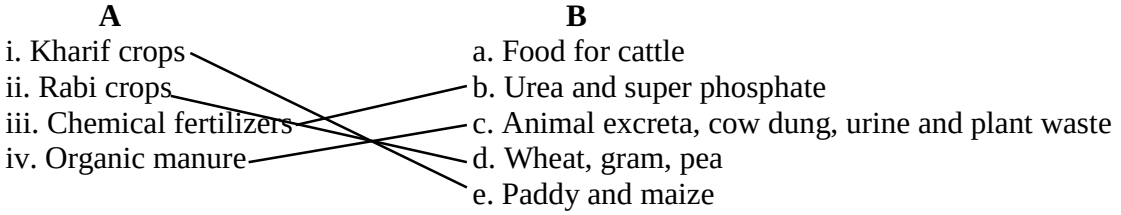
a. The same kind of plants grown and cultivated on a large scale at a place is called crop.

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

c. Damaged seeds would float on top of water.

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

2. Match items in column A with those in column B:



3. Give two examples of each.

a. Kharif crop- Paddy, maize, ground nut and cotton.

b. Rabi crop- Wheat, mustard, gram and pea.

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

a. Preparation of soil: Preparation of the soil is the first step before growing a crop. It helps to turn the soil and loosen it. This allows the roots to penetrate deep in the soil and breathe easily. Turning and loosening the soil also brings the nutrient rich soil to the top so that plants can use the soil nutrients. The process of turning and loosening the soil is called ploughing. This is done using a plough, hoe and cultivators.

b. Sowing: Sowing is the process of putting seeds into the soil. Healthy seeds are used for sowing in the fields. Sowing is done with the help of traditional tool which is shaped like a funnel. The seeds are filled into the funnel and passed down into the soil through long pipes. Seed drills are nowadays used for sowing with the help of tractors. The seed drill sows the seeds uniformly at proper distances and depths. The seeds get covered by the soil after sowing. This prevents damage by the birds.

c. Weeding: The process of removal of weeds or unwanted plants from the fields is called weeding. Weeding is important because the weeds compete with the crop plants for water, nutrients, space and light. Weeding is done with a khurpi or uprooted manually. Weedicides like 2, 4-D are also used to kill the weeds.

d. Threshing: Separation of grains from the chaff is called threshing. This is done with machines called combines. The separated grains are stored in sacs.

5. Explain how fertilizers are different from manure.

S. No.	Fertilizer	Manure
1.	A fertilizer is an inorganic chemical salt.	Manure is natural substance obtained by the decomposition of cattle dung, human waste and plant residues.
2.	A fertilizer is prepared in factories.	Manure can be prepared in the fields or farm yard by putting wastes in a pit and allowing them to decompose.
3.	A fertilizer does not provide any humus to the soil.	Manure provides lot of humus to the soil.
4.	Fertilizers are very rich in plant nutrients like nitrogen, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.
5.	Examples: Urea, DAP	Example: Farm yard manure.

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

The supply of water to crops at different intervals is called irrigation. There are different methods of irrigation depending on the type of crop.

Modern methods of irrigation which conserve water are:

a. Sprinkler System: In this system specially designed sprinklers are used to sprinkle water in the fields. A sprinkler has a rotating nozzle which turns and sprinkles water in a circular path as if it is raining. Sprinkle system is very useful in sandy soil to distribute water properly to every plant.

b. Drip irrigation: This method is useful specially for watering fruit plants, big trees and in the gardens. In this system waterfalls drop by drop near the root of the plant keeping the soil moist. Thus water is not wasted at all and is very useful in places where water is less available.

7. If wheat is sown in Kharif season, what would happen? Discuss.

Wheat is a Rabi crop. It does not require high input of water.

In Kharif season there is heavy rainfall due to the monsoon and so the fields get flooded with water. If wheat is sown in the fields at this time, the roots of wheat plant will decompose very soon due to water logging in the fields and less supply of air to the roots. This will result in crop failure.

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

Soil supplies mineral nutrients to the crop. These nutrients are very necessary for the growth of the plants.

If continuous plantation of crops is done in the fields then the soil will become poor in necessary nutrients like nitrogen, potassium, phosphorus, zinc etc. This will result in poor growth of the plants.

To supply the nutrients back to the soil manuring is done. Fertilizers are also used to supply those nutrients to the soil which are needed in larger amounts.

9. What are weeds? How can we control them?

Weeds are the unwanted wild plants that grow in the fields. These plants compete with the crop plants for space, light, water and nutrients. So they have to be removed from the fields. Weeds are controlled by the following methods:

Ploughing the field before sowing helps in uprooting and killing the weeds.

The weeds are also uprooted manually or cut close to the ground. This is done with the help of khurpi.

Weeds are also controlled with the help of chemicals called weedicides like 2, 4-D.

10. Explain the types of crops that are grown in India.

There are basically two crops that are grown in India:

a. Kharif Crop: This crop is sown in the rainy season that is in the month of June. Paddy, Maize, Soya bean, Ground nut and cotton are the main Kharif crops.

b. Rabi Crop: This crop is sown in the winter season that is in the month of October or November. It is harvested in March or April in the next year. Wheat, Gram, Pea, Mustard and Linseed are the main Rabi crops.

11. What are the advantages of adding manure to the soil?

Addition of manure to the soil has the following advantages:

a. Manure increases the water holding capacity especially in the sandy soil.

Manure increases the number of useful bacteria, which decompose the organic matter and also help in nitrogen fixation.

Manure makes the soil porous. This helps in easy exchange of gases needed by the plant roots.

Manure supplies all the nutrients to the soil although in lesser amounts.

12. What is Nitrogen Fixation? Explain its importance for the plants.

The process of production of nitrogen compounds like nitrates from nitrogen gas in the air is called nitrogen fixation. This process is done by nitrogen fixing bacteria in the soil. Nitrogen fixation is also done by *Rhizobium* bacteria which live in the root nodules of the pulses.

Nitrogen is one of the most required minerals by the plants. The plants get the nitrogen that is fixed by the soil bacteria through the process of nitrogen fixation. This nitrogen is used by the plants for making proteins.

13. Name the implements which are used for the following operations:

a. Ploughing or tilling of the soil:	Plough, Hoe and Cultivator
b. Sowing of the seeds:	Seed drill
c. Irrigation of the fields:	Sprinklers
d. Weeding:	Khurpi
e. Spraying of Weedicides:	Sprayer
f. Harvesting:	Harvesters and Combines
g. Threshing:	Threshers and Combines

14. Explain the following:

a. Ploughing: The process of turning or loosening the soil is called ploughing or tilling. It is done with the help of a plough, hoe or cultivator. Ploughing helps the roots of plants to penetrate deep in the soil. It also helps the growth of earthworms and microbes which further increase the humus in the soil and make it fertile. Ploughing also aerates the soil and helps the roots to breathe easily.

b. Irrigation: The process of supplying water to the crops is called irrigation. Depending on the type of crop different systems of irrigation are used. Sprinkler system and drip irrigation systems are two modern systems which are used to save water while supplying sufficient water to the crop.

c. Harvesting: The cutting of crop after it is mature is called harvesting. It is done manually with a sickle or with the harvester and combines.

d. Threshing: The process of separating the grains from the chaff is called threshing. It is done manually of with the help of threshers and combines.

e. Combines: These are machines used for harvesting as well as threshing of the crop. These save time and fuel.

f. Animal Husbandry: The practice of rearing animals in homes or in the farms and giving them food, shelter and care is called animal husbandry.

g. Silos and Granaries: Large scale storage of food grins is done in the silos and granaries. The food grains in silos and granaries remains protected from pests like rats and insects.