Crop Production and Management

Check point 1

Q. 1. According to season, the crops are divided into how many cropping patterns?

Answer: Based on seasons there are two cropping patterns in India, Kharif and Rabi crops.

(a) Kharif crops are those that are sown in the months of June-July and harvested in September-October every year. The Kharif crops also sometimes are also called as 'summer crops'. Examples of some of the Kharif crops are paddy, maize, sorghum, sugarcane, and pearl millets.

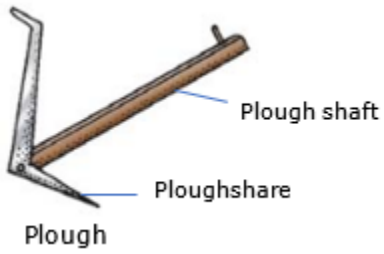
(b) Rabi crops are those that are sown in the months of October-November and harvested in the month March-April. The Rabi crops also sometimes are also called as 'winter crops'. Examples are wheat, oat, barley and pulses, oil seeds.

Q. 2. Levelling is done after ploughing. Why?

Answer: After ploughing the soil, large lump of soil is left which needs to be levelled. Levelling is done to ensure uniform distribution of water to every part of the crop field during irrigation. Levelling helps in seed sowing.

Q. 3. Different materials are used for making plough. Name them.

Answer: A plough is made of wood and iron. The main part of the plough is made of a long log of wood, called a ploughshaft. A strong triangular iron strip called ploughshare is attached to the ploughshaft.



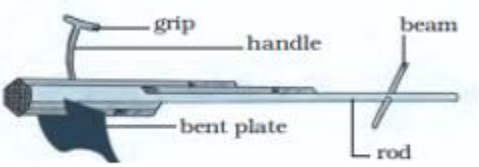
Plough

Q. 4. Besides plough, what are the other agricultural implements used for loosening and turning soil?

Answer: Other than plough, hoe and cultivators are the agricultural implements used for loosening and turning soil?

(a) A hoe is a simple tool used to remove weeds and ploughing the soil. It is made of a long rod of wood or iron.

(b) The cultivator is looked iron structure and is driven by a tractor.



Hoe

Check point 2

Q. 1. Name the machine used for sowing seeds.

Answer: 'Seed drill' is a machine used to sow seeds. Seed drill is a funnel with a long and hollow. The seeds are put into the funnel and the seeds go down in the soil one by one. In the large farms mechanised drills attached to the tractors for sowing seeds.

Sowing with seed drill

Q. 2. The damaged seeds float on the water surface. Give reason.

Answer: Damaged seeds become hollow and lighter. Therefore they float on water.

Q. 3. Give the meaning of the term 'broadcasting' with respect to agriculture.

Answer: Broadcasting is a method of seed sowing. In this method, seeds are spread or sprinkle in the crop field. Example of such crop is coriander.

Broadcasting seeds

Q. 4. Name one plant of crop that is transplanted from nursery.

Answer: Transplantation is a process in which seedlings are grown in a nursery and then these are transferred to the main field. Examples are Paddy, tomato and chilly.

Transplantation crop - paddy

Q. 5. Mention the advantages of transplantation of seedlings into main field.

Answer: The transplantation has the following advantages:

(a) It gives choice to select only healthy seedlings for transplantation.

(b) It promotes a better development of shoot (stem and leaves) system of plants.

(c) The seedlings are planted in the right space to avoid overcrowding.

(d) It ensures that each plant gets the uniform resources such as water, nutrients and sunlight.

Check point 3

Q. 1. Give the role of manure and fertiliser in the soil.

Answer: Manures are substances added to the soil to add organic matter such as carbon. Hence, manure enhances soil fertility which is dependent on the interaction of various organisms and reactions. Fertilizers are chemical compounds. It provides specific nutrient such as nitrogen (N), phosphorus (P) and potassium (K) to the soil. Fertilizers increase crop production but it harmful for the soil and environment if it is used continuously.

Q. 2. The plants grow fastest if we add fertilisers in the soil, but if we add manure, plants grow but at a slower rate. Give reason.

Answer: Fertilizers are chemical compounds which provide immediate a particular nutrient to plants and help them grow faster. Whereas manure is low in nutrient content and it takes a longer time to release nutrients in the soil. As the result plants grow slowly. But the use of manure improves soil textures, as well as its water, retaining capacity. It replenishes the soil with all the nutrients.

Q. 3. If excess fertilizer is added to the soil, what can happen?

Answer: By the use of fertilizers, farmers get a better yield of crops. But excessive use of fertilizers adversely affects the soil fertility. Continuous use of fertilizers makes the

soil less fertile. Fertilisers also cause water pollution. Therefore, in order to maintain the fertility of the soil, we should use more organic manure or leave the field uncultivated (fallow) in between two crops.

Q. 4. Does nitrogen fixation help in nutrient enrichment?

Answer: Nitrogen fixation is a process by which nitrogen present in the atmosphere is converted into nitrate. Nitrate is the compound of nitrogen that is used to increase the growth rate of the plant.

The leguminous crops like beans and peanuts have Rhizobium bacteria which are present in the nodules of the root of the plant is responsible for nitrogen fixation.This help in the replenishment of the nitrogen in the soil which provides better growth for Rabi crops like wheat.

Check point 4

Q. 1. In which season, the frequency of irrigation is required at a higher rate?

Answer: Watering of crops at regular intervals is called irrigation. The time and frequency of irrigation depend on types of crop, soil and season. In summer, the frequency of watering is higher because in summer temperature is high due to which the rate of evaporation of water from the soil and the leaves increases.

Q. 2. Name some sources of irrigation.

Answer: The sources of water for irrigation are wells, tube-wells, ponds, lakes, rivers, dams, and canals.

Q. 3. In which method of irrigation, there is no wastage of water?

Answer: One of the modern methods of irrigation is the Drip system. In this system, the water falls drop by drop directly near the roots of the plants, hence water is not wasted at all.

Drip irrigation

Q. 4. Why are unwanted plants harmful? What are they called?

Answer: Undesirable plants which grow naturally along with the crop are called weeds.

The weeds are harmful because weeds compete with the crop plants for water, nutrients, space, and light. Thus, they affect the growth of the crop. Therefore, weeds need to be removed from the crop field.

Q. 5. Name the tool used for manual weeding.

Answer: Weeds can be removed manually with the help of khurpi.

Khurpi

Check point 5

Q. 1. What do you understand by the term 'winnowing'?

Answer: Winnowing is a manual method of separating grains from the chaff (covering of the seed) with the help of wind.

Winnowing

Q. 2. The gain seeds are carried out from the chaff with the help of which machine?

Answer: Separation of grain from the chaff is threshing. Threshing is done with the help of a machine called 'combine'. This machine is actually a combination of a harvester and a thresher.

Combine

Q. 3. Name the government agency which buys food grains from farmers.

Answer: Food Corporation of India (FCI) purchase food grain from farmers.

Q. 4. Give the other name of milk yielding animals.

Answer: The animals such as cow, buffalo, and goat give milk. Milk yielding animals are called ‘milch animals’.

Q. 5. Nutritive honey is obtained from which animal?

Answer: Honey is obtained from the honeybee. A honeybee collects a sweet substance called nectar from flowers to make honey.

Honeybee

Chapter Test

Q. 1. Is it necessary to remove weeds from the field time to time? Give reason.

Answer: Yes, it necessary to weed out unwanted plants time to time from crop field because it competes for space, nutrients and sunlight. It decreases the crop yield.

Q. 2. The government usually maintain a buffer stock of grains. Why

Answer: The government maintains buffer food stock in silos to provide food grain in case of food shortage due to disaster or natural calamity.

Q. 3. Write the advantage of using a cultivator.

Answer: Nowadays plowing on large scale is done by cultivator. A cultivator is a tractor-driven machine. It cost effective and also saves time. The use of cultivator saves labour and time.

Q. 4. Organic foods are harmless. Do you agree?

Answer: The food which is grown organically is harmless and healthier because organic foods are grown without the use of chemical fertilizers and pesticides.

Q. 5. Write the name of the equipment which is used to level the tilled land.

Answer: Levelling of soil is done with the help of an equipment called leveller. Levelling beneficial for sowing as well as for irrigation.

Q. 6. Write the name of a man-made chemical substance that is rich in inorganic nutrients.

Answer: A man-made chemical substance is called fertilisers.

The fertilisers are the chemical substance which are rich in inorganic substance like urea, ammonium sulphate, NPK(Nitrogen, Phosphorus, Potassium) etc.The use of fertilisers has helped farmers to get a better yield of crops like wheat, paddy and maize.

Q. 7. Which implement is used for harvesting?

Answer: Harvesting is carried out either by sickle or by a machine called Harvester.

Q. 8. Write two advantages of nitrogen fixation.

Answer: (a) Nitrogen-fixing bacteria fix atmospheric nitrogen in the root nodules of the leguminous plants without using fertilizers.

(b) It enhances soil fertility by adding nitrogenous compound such as nitrate to the soil. With this other crop also benefitted.

Q. 9. Explain the causes for the frequency of irrigation of crops being higher in the summer season.

Answer: During summer the frequency of watering of crops is higher because of the rate of evaporation of water from the soil and the leaves increases? To overcome intense heat the crop plants, require more water. Thus, the frequency of watering plants in summer is high.

Q. 10. A farmer was growing only paddy in a particular field for five successive generations. He found that the yield decreases every time. Give reasons and how can this problem be solved?

Answer: Growing of same type of crop in the same field for five successive generations, depletion of particular nutrients happen. This causes decrease in yield. This problem can be solved by planting two different crops alternately in the same field, one crop should be pulse crop. This is called crop rotation.

Q. 11. The harvested grains are stored without drying by a farmer. List the consequences.

Answer: The various consequence if the farmer stores freshly harvested grains are:

1. Freshly harvested grains contain more moisture. If freshly harvested grains (seeds) are stored without drying, grains get damaged leading to a loss in their germination capacity.

2. Grains containing moisture can get attack by insects pest, bacteria and fungi.

Q. 12. Write four differences between threshing and winnowing.

Answer:

Threshing	Winnowing
It is a process of loosening of chaff from grains.	It is a process of complete separation of chaff and dust particles from grains.
Traditionally is done by striking harvested crop against hard surface.	With the help of wind separation of grain is done.
Threshing is also carried out with the help of a machine called 'combine'.	Winnowing is also carried by a winnowing machine.
It is done before winnowing.	It is done after threshing.

Q. 13. The use of fertilisers should be limited. Why?

Answer: • Fertilisers are chemicals, rich in a particular nutrient.

● Limited use of fertilizer increases crop yield.

● But excessive use of fertilisers is harmful to humans as well as other life and environment.

● Continuous use of fertilizer makes soil acidic and less fertile by removing nutrients from the soil.

● Fertilisers also cause water pollution, causes death of aquatic animals.

● Therefore, farmer should limit the use of chemical fertilizers in order to maintain the fertility of the soil.

Q. 14. Different crops are grown in different crop seasons. Explain this statement with examples.

Answer: ● Different crops require different temperaurte, moisture content and soil condition to grow.

● Our country has different seasons hence, different crops are grown.

● For examples crops like paddy, maize, sorghum, sugarcane, and pearl millets are sown in the months of June-July and harvested in September-October every year.

● Some crops such as wheat, oat, barley and pulses, oil seeds are sown in the months of October-November and harvested in the month March-April.

Q. 15. We use dried neem leaves for storing food grains. Explain.

Answer: Neem tree is native of India. Its leaves contain chemicals such as Nimbin which have antifungal, antibacterial property. Hence, dried neem leaves are used for storing food grains at home. Neem leaves kept in stored grain, protect from pests and microorganisms.

Q. 16. Differentiate between

(a) Rabi season crop and Kharif season crop.

(b) Harvesting and threshing.

Answer: (a)

Rabi season crop	Kharif season crop
Crops which are sown in the months of October-November and harvested in the month March-April.	Crops which are sown in the months of June-July and harvested in September-October every year.
The Rabi crops also sometimes are also called as 'winter crops'.	The Kharif crops also sometimes are also called as 'summer crops'.
Examples are wheat, oat, barley and pulses, oil seeds.	Examples are paddy, maize, sorghum, sugarcane, and pearl millets.

(b)

Harvesting	Threshing
It is a process of cutting of matured crop.	It is a process of loosening of chaff from grains.
Traditionally is done with the help of sickle.	Traditionally is done by striking harvested crop against a hard surface.
Harvesting is also carried out with the help of a machine called 'combine' (combination of harvester and thresher).	Threshing is also carried out with the help of a machine called combine'(combination of harvester and thresher)
It is done before threshing.	It is done after harvesting.

Q. 17. A gardener uses manure for better production, what is a manure? Describe the common types of manures. Give the advantages of using them.

Answer: ● The organic substances which are mixed to the soil for better growth of plants are called manure.

● Manure is an organic substance obtained from the decomposition of plant or animal wastes.

● Waste includes leaves, stems, other plant parts and dung from animals.

● For making manure plant and animal waste is dumped in pits at open places and allow it to decompose by microorganisms.

● The decomposed matter is the organic manure.

● **Advantages of Manure:**

(a) It adds humus and nutrients to the soil.

(b) It enhances the water holding capacity of the soil.

(c) It makes the soil porous due to which exchange of gases becomes easy.

(d) It increases friendly microbes to the soil and improves its texture (content of the soil particles).

Q. 18. Threshing is an important agricultural practice. Explain what is it and how is it done.

Answer :

● It is a process which is carried out after harvesting.

● In this process of loosening of chaff from grains.

● It is done either traditionally or by modern machine.

● Traditionally it is done by striking harvested crop against hard surface or by beating the harvested crop with solid stick.

● Threshing is also carried out with the help of a machine called combine' (combination of harvester and thresher).

Manual threshing

Combine

Q. 19. What do you mean by weeds? Which methods do farmers use to remove weeds?

Answer:

● Weeds are undesirable plants which are gown along with crop plants.

● Examples of weeds are bathua, chenopodium, chaulai.

● They compete with crop for space, nutrients and sunlight.

● Some weeds interfere even in harvesting and may be poisonous for animals and human beings.

● Hence, weeds are to be removed from the crop field.

● Farmers undertake many methods to remove weeds and control their growth.

(**a)** Tilling before sowing of crops helps in uprooting weeds and they get mixed with the soil after decomposition.

(b) Manual removal of weeds with the help of khurpi by uprooting or cutting them close to the ground from time to time.

(c) A seed drill is also used to uproot weeds.

(d) Weeds are also controlled by using certain chemicals called weedicides such as 2,4-D are used to control weeds. Weedicides are sprayed in the fields to kill the weeds.

Spraying weedicide

Q. 20. Write the traditional and modern methods used for irrigation.

Answer: Water is important for proper growth and development of the plants. Thus, the watering of crops at regular intervals is called irrigation. There are two methods of irrigation in India:

(a) Traditional Methods of Irrigation: in traditional methods water is lifted from water sources such as wells, lakes and canals by using human labour or cattle. Traditional methods are cheaper but less efficient. Examples of traditional methods moat (pulley-system), chain pump, dhekli and rahat (Lever system). Pumps are commonly used for lifting water. Pumps run on fuels such as diesel, biogas, electricity and solar energy.

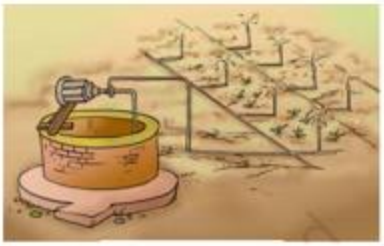
Moat

Chain pump

Rahat

(b) Modern Methods of Irrigation:

Modern methods of irrigation help us to use water economically.



Sprinkler system

(i) Sprinkler System: In this method perpendicular pipes with rotating nozzles at the end, are joined to the main pipeline at regular intervals. When water flows through the main pipe under pressure, water escapes from the rotating nozzles. It gets sprinkled on the crop as if it is raining.

(ii) Drip system: In this system, the water falls drop by drop directly near the roots of the plants, hence water is not wasted at all. It is the best technique for watering fruit plants, gardens and trees.

Drip irrigation