

# CHAPTER - 1

## CROP PRODUCTION AND MANAGEMENT

### AGRICULTURE

The science of farming is called agriculture. Farming includes cultivation of plants and rearing of animals for food and other beneficial items (like wool, cotton, beverages, etc.) is called agriculture. Agriculture is the main occupation of majority of people in India. Due to this, most of the people in India live in rural areas.

### CROP

When plants of the same kind are grown and cultivated at one place on a large scale commercially, they are called a crop. For example, crop of wheat means that all the plants grown in a field are that of wheat.

### TYPES OF CROPS IN INDIA

India is a vast country where diverse practices of farming are seen in different parts. But crops in India can be divided into two main types, which are as follows: **Kharif and Rabi**

**Kharif Crops :** 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, cotton, etc., are kharif crops.

**Rabi Crops :** The crops grown in the winter season are called rabi crops. Their time period is generally from October to March. Examples of rabi crops are wheat, gram, pea, mustard and linseed.

### AGRICULTURAL PRACTICES

Various tasks; which a farmer needs to do during cultivation of crops are collectively called agricultural practices. Activities which are part of agricultural practices are as follows:

- Preparation of soil
- Sowing
- Adding manure and fertilizer
- IrrigationProtecting from weeds
- Harvesting
- Storage

### PREPARATION OF SOIL

The first step of cultivation is preparation of soil. This is done by loosening and turning the soil. A plough is used for this purpose. If the soil becomes too hard then farmer may resort to watering the soil before ploughing.

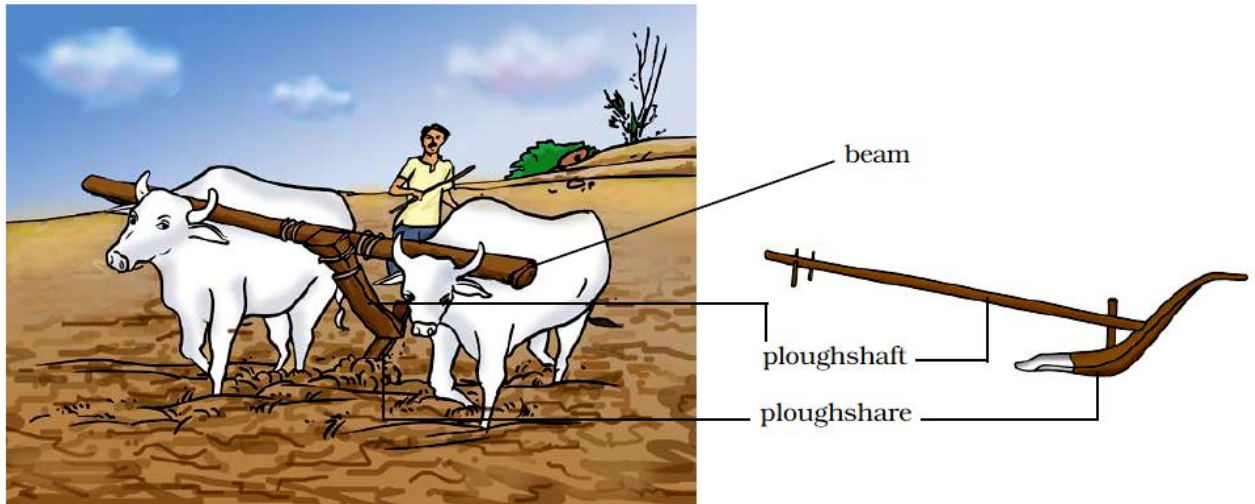
Traditionally, animal-drawn ploughs have been used by farmers. Now-a-days, tractor-drawn ploughs are used for this purpose. A tractor helps in saving time and labour. The soil may contain many big lumps even after ploughing. The lumps are broken with the help of a hoe. Sometimes the farmer may add manure before ploughing; in order to properly mix the manure with soil.

#### Significance of Ploughing:

- Loosening the soil allows the roots to penetrate deep into the soil.
- It allows the root tips to breathe easily when they go deep into the soil.
- Nutrients from humus get properly mixed into the soil.
- It brings nutrients and minerals to the top and thus plants are able to utilize these minerals in a better way.

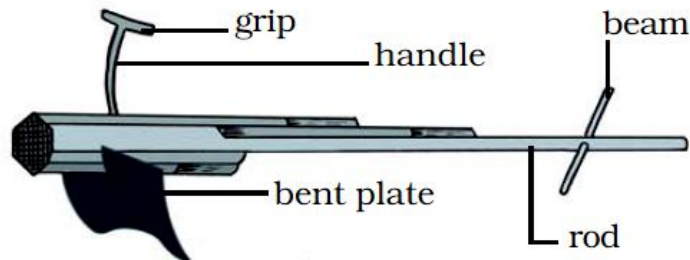
## TOOLS FOR LOOSENING AND TURNING OF SOIL

**Plough:** A plough is composed of ploughshare and ploughshaft. The ploughshare is made of iron and is triangular in shape. The ploughshaft is made of wood and is very long. It is harnessed to a pair of bullocks or other cattle with the help of a beam which remains perpendicular to the ploughshaft.



*The plough*

**Hoe:** The hoe is used for leveling the soil and for removing weeds. It is made of iron or wood. It is a long beam with a handle. Sometimes a heavy and flat beam of wood is utilized as a hoe. In the iron hoe; a sharp blade is fixed on one end. A hoe is usually pulled by animals but sometimes it is pulled by tractor as well.



*A hoe*

**Cultivator:** A cultivator is composed of a series of iron discs or ploughshare which are fitted on an iron frame. Cultivator is pulled by tractor. Cultivator helps in tilling a large area in less time. It is ideal for big-size farm.



## SOWING

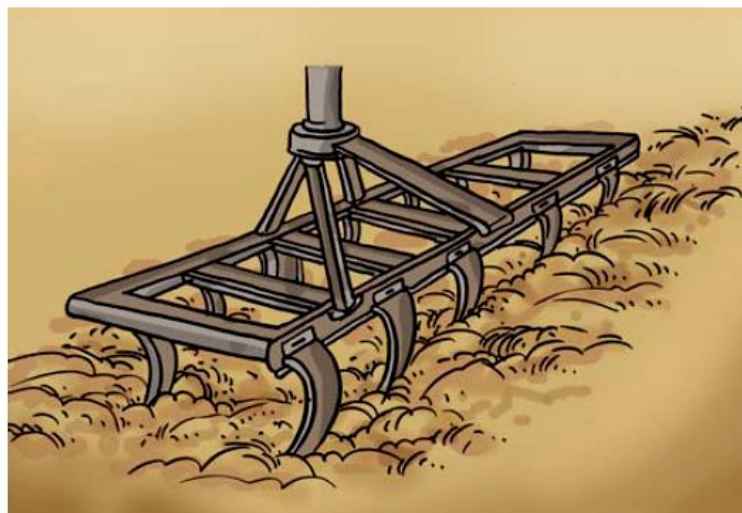
Seeds are sown in the field after ploughing. A farmer needs to separate damaged seeds from good seeds. The seeds should be sown at proper gaps and at proper depth. Proper gap between seeds and proper depth in soil ensures adequate sunlight, moisture, air and nutrients to the growing plants. Seeds can be shown by any of the following methods:

**Broadcasting:** This is a traditional method of sowing seeds. In this method, seeds are sprayed on the field manually, i.e. by hand. Broadcasting is only effective on plots of small size.

**Traditional Seed Drill:** A seed drill is composed of a funnel which has a long and pointed neck. The seed drill is attached to the plough-shaft. When seeds are kept in the funnel they drop gradually through the neck; when the field is being ploughed. The pointed end of the neck of seed drill pierces the soil and thus seeds go deep into the soil. Seed drill helps in saving time when the farmer needs to sow a farm of large size.



**Modern Seed Drill:** The design of modern seed drill has evolved from the traditional seed drill. It contains many hollow and pointed tubes which are fitted on a huge frame of iron. All the tubes are connected to a huge container at top. Seeds are kept in the container so that seeds can drop through the hollow tubes. Tractor-driven seed drills helps in sowing seeds on large farms in less time.



*A seed drill*

## **ADDING MANURE AND FERTILISERS**

We know that plants take nutrients from soil and thus exhaust the soil of most of the nutrients with passage of time. Manures and fertilizers need to be added to soil to replenish plant nutrients.

### **MANURE**

Manure is prepared by decomposition of plant and animal waste. Farm waste is dumped in the field and is left to decompose. Sometimes, the farm waste may be covered with a layer of soil to hasten the process of decomposition. Sometimes, help of earthworm is also taken to hasten the process. Farmers also make compost pits to prepare manure.

#### **Advantages of Manure:**

- Manure increases nutrients in soil.
- It improves soil texture.
- It improves water retaining capacity of soil.
- It is free of any toxic material and thus is environment friendly.

### **FERTILISERS**

Fertilizers are chemicals which contain a specific plant nutrient. Fertilizers are made in factories and a pack of fertilizer may contain any one nutrient or a mixture of more than one nutrient. Urea, ammonium sulphate, super phosphate, potash and NPK (Nitrogen, Phosphorus and Potassium) are examples of fertilizers.

#### **Advantages of Fertilisers:**

- Fertilizers give faster results compared to manure.
- Use of fertilizers helps farmers in significantly improving farm yield.

#### **Disadvantages of Fertilisers:**

- Excessive use of fertilizers can make the soil unfertile.
- Harmful chemicals in fertilizers pollute the soil and groundwater.

## **SOME OTHER METHODS OF REPLENISHING SOIL NUTRIENTS**

**Fallow Field:** When the field is left uncultivated for a season, it is called fallow land. Leaving the field fallow allows the soil to recuperate nutrients through natural processes.

**Crop Rotation:** This is time tested method and has been used by farmers since a long time. This involves growing a legume crop between two successive cereal crops. Rhizobium bacteria live in the root nodules of legume plants. These bacteria help in nitrogen fixation in soil. Thus, legume plant facilitates replenishment of nutrients in soil.

### **IRRIGATION**

Plants need plenty of water to grow. Farmers need to supply water to crops at regular intervals. This practice is called irrigation. Different types of crop require different amount and frequency of irrigation. Kharif crops need more water than rabi crops.

**Sources of Irrigation:** Wells, tube-wells, ponds, lakes, rivers, canals, etc.

**Traditional Methods of Irrigation:** In traditional method, human or animal labour is used.

**Moat (Pulley System):** This is composed of a pulley and a rope. A bucket is tied to one end of rope. Another end of rope is pulled through over the pulley in order to draw water.

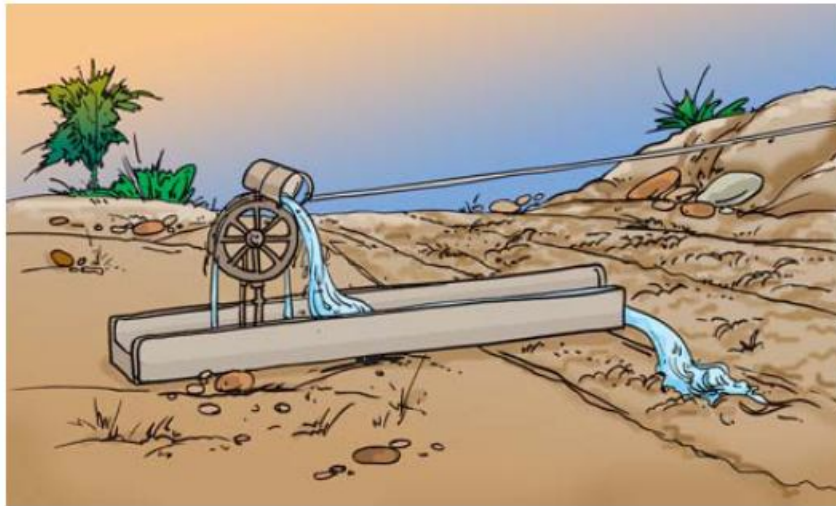
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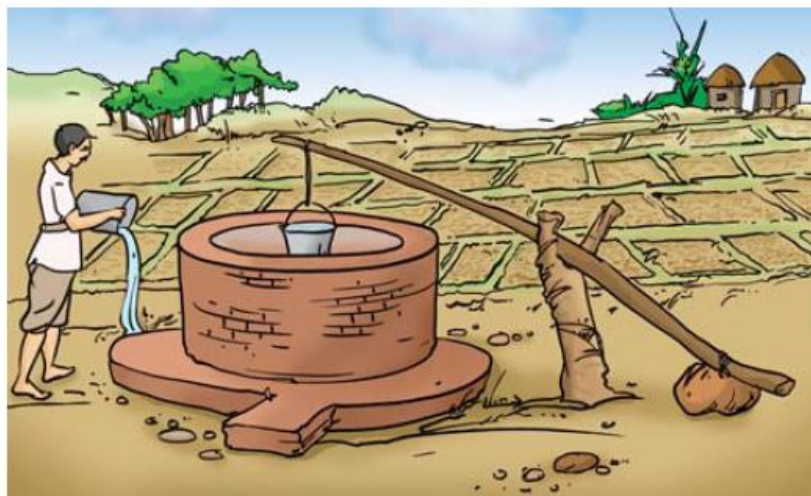
*Moat*

**Chain Pump:** Chain pump is composed of a wheel which is turned with the help of a chain. Many circular discs are fitted along with the chain. Movement of discs along with the chain helps in drawing water.



*Chain pump*

**Dhekli:** Dhekli is composed of a long wooden beam which turns around a lever. A bucket is fitted at the longer end of the beam. The shorter end is pressed and raised by foot to fill and lift water.



*Dhekli*

**Rahat:** Rahat is also called Persian Wheel because it came from Persia. Rahat is composed of a big wheel with buckets fitted on the rim. Rahat is turned with the help of cattle; which helps in drawing water from a reservoir.

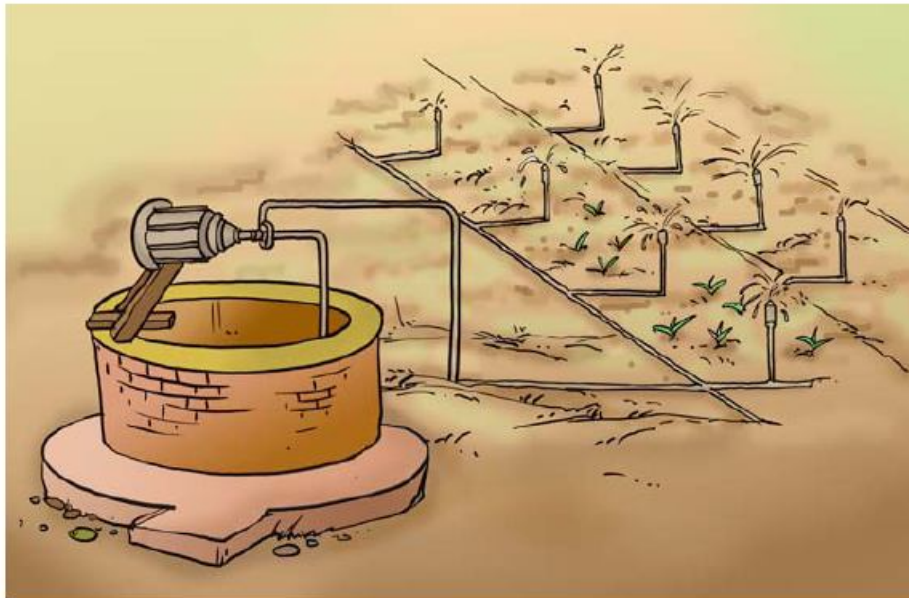


*Rahat*

**Manual pumps:** Manual pumps are now being replaced by motor-driven pumps. Such motors are powered either by electricity or by diesel engine.

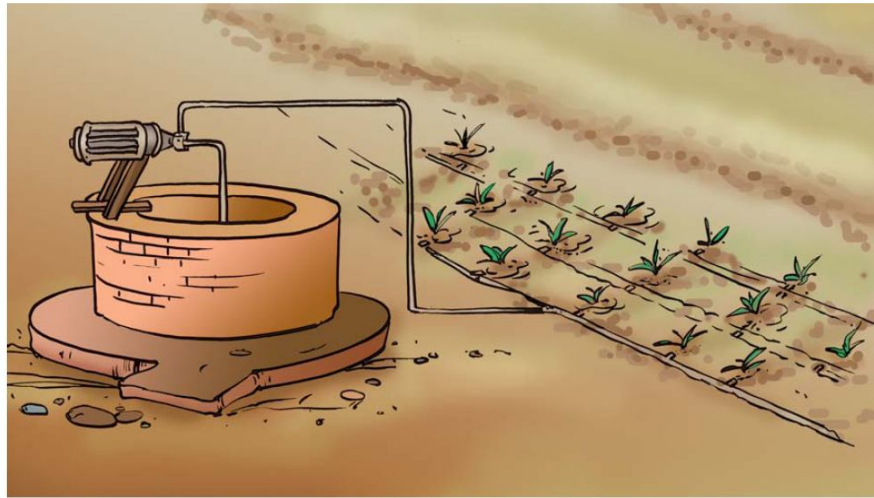
### **MODERN METHODS OF IRRIGATION**

**Sprinkler System:** The sprinkler system is composed of a series of pipelines. Vertical sprinklers are fitted at suitable gaps on the pipes. Water is pushed through the pipes with the help of a pump. The nozzle of the sprinkler keeps on rotating. It results in a jet of water being sprinkled on plants. Sprinkler system is ideal for irrigation on uneven land.



*Sprinkler system*

**Drip Irrigation:** In this system, pipes are laid near the base and along the queue of plants. The pipes have small holes at frequent gaps. The holes facilitate gradual dripping of water on the base of plants. This method is ideal for areas which are suffering from shortage of water.



*Drip System*

### **Importance of Irrigation:**

- Plants contain nearly 90% water.
- Water is essential for germination of seeds.
- Water is essential for proper growth of plants.
- Water is essential for proper development of flowers, fruits and seeds.
- Water protects plants from frost and also from hot air currents.

### **PROTECTION FROM WEEDS**

**Weeds:** Any unwanted plant which grows along with crops is called weed. While some weeds are poisonous, many are not harmful. However, weeds compete with plants for various resources; like sunlight, air, water and nutrients. Weeds hamper the normal growth of plants. Hence, removal of weeds is necessary for a good harvest.

**Weeding:** Removal of weeds is called weeding. Weeding is usually done manually or by using a trowel. Weeds are also removed during ploughing. Weedicides are the chemicals which destroy weeds. 2, 4 – D is an example of weedicide. Weedicides are sprayed before flowering and seeding in weeds. A farmer needs to take precautions to prevent any harm from weedicide. The farmer needs to wear protective cloths and masks while spraying a weedicide.



*Spraying weedicide*

### **Harvesting**

Harvesting involves cutting the mature crop. Traditionally, harvesting is done manually by using sickles. Combine harvesters are used on large farms. A combine harvester does harvesting and threshing at one go.





combine

**Threshing:** Separation of grains from harvested crop is called threshing. Threshing is done by threshing machine or by cattle.

**Winnowing:** Separation of grains and chaff is called winnowing. Winnowing is done manually or by machines.



*Winnowing machine*

## STORAGE

Proper storage of harvested crop is necessary to prevent damage from moisture and pests. Grains are generally dried in the sun before being stored. Silos of different sizes are used for storing grains. Fruits and vegetables and other perishable items are stored in cold storage. Pesticides are also used while storing grains.



Food grains stored in gunny bags in granary



Grain-silos for storing foodgrains.



## Food from Animals

Animals are important source of food for us. Many animals are reared for milk. Some animals are reared for meat, e.g. goats and poultry. Fish is an important source of meat. Honey is obtained from honeybees.

**Animal Husbandry:** Animal husbandry involves rearing of animals for food and other products.

## NCERT EXERCISE QUESTIONS AND ANSWERS

### 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 \_\_\_\_\_.
- (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.

**Ans:** (a) crop, (b) preparation, (c) float, (d) water, nutrients

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

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

**Ans:** (i) - (e), (ii) - (d), (iii) - (b), (iv) - (c)

### 3. Give two examples of each. (a) Kharif crop (b) Rabi crop

**Ans:** (a) Kharif crop → Paddy, maize

(b) Rabi crop → Wheat, gram

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

**(a) Preparation of soil (b) Sowing (c) Weeding (d) Threshing**

**Ans:**

**(a) Preparation of soil:** The first step of cultivation is preparation of soil. This is done by loosening and turning. A plough is used for this purpose. If the soil becomes too hard then farmer may resort to watering the soil before ploughing. Traditionally, animal-drawn ploughs have been used by farmers. Now-a-days, tractor-drawn ploughs are used for this purpose. A tractor helps in saving time and labour.

**(b) Sowing:** Seeds are sown in the field after ploughing. A farmer needs to separate damaged seeds from good seeds. The seeds should be sown at proper gaps and at proper depth. Proper gap between seeds and proper depth in soil ensures adequate sunlight, moisture, air and nutrients to the growing plants.

**(c) Weeding:** Removal of weeds is called weeding. Weeding is usually done manually or by using a trowel. Weeds are also removed during ploughing. Weedicides are the chemicals which destroy weeds. 2, 4 - D is an example of weedicide. Weedicides are sprayed before flowering and seeding in weeds. A farmer needs to take precautions to prevent any harm from weedicide.

**(d) Threshing:** Separation of grains from harvested crop is called threshing. Threshing is done by threshing machine or by cattle. Cattle are tied in a series around a pole. Harvested crop is spread around the pole. Animals are made to trample the harvested crop. It helps in separating the grains from the harvested crop.

**5. Explain how fertilisers are different from manure.**

**Ans:**

<b>Fertiliser</b>	<b>Manure</b>
1. A fertiliser is an inorganic	Manure is a natural substance obtained salt. by the decomposition of cattle dung, human waste and plant residues.
2. A fertiliser is prepared in factories.	Manure can be prepared in the fields.
3. A 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, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

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

**Ans:**

Answer: Plants need plenty of water to grow. Farmers need to supply water to crops at regular intervals. This practice is called irrigation.

Two methods of irrigation which conserve water are as follows:

**Sprinkler System:** The sprinkler system is composed of a series of pipelines. Vertical sprinklers are fitted at suitable gaps on the pipes. Water is pushed through the pipes with the help of a pump. The nozzle of the sprinkler keeps on rotating. It results in a jet of water being sprinkled on plants. Sprinkler system is ideal for irrigation on uneven land.

**Drip Irrigation:** In this system, pipes are laid near the base and along the queue of plants. The pipes have small holes at frequent gaps. The holes facilitate gradual dripping of water on the base of plants. This method is ideal for areas which are suffering from shortage of water.

**7. If wheat is sown in the kharif season, what would happen? Discuss.**

**Ans:** Crop of wheat requires moderate temperature, moderate amount of water and a long period of frost-free days. If wheat is grown in kharif season it may not grow properly because of very high temperature. Some of the plants may also get damaged due to flooding. This will result in poor yield.

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

**Ans:** We know that plants take nutrients from soil and thus exhaust the soil of most of the nutrients with passage of time. Thus, continuous plantation of crops in the field results in loss of fertility for the soil. The soil may become infertile in the long run.

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

**Ans:** Any unwanted plant which grows along with crops is called weed. Removal of weeds is called weeding. Weeding is usually done manually or by using a trowel. Weeds are also removed during ploughing. Weedicides are the chemicals which destroy weeds. 2, 4 – D is an example of weedicide. Weedicides are sprayed before flowering and seeding in weeds.

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## QUESTION BANK (SET 01)

1. Which one of the following condition is not essential to grow maize?  
(a) High temperature      (c) Low temperature  
(b) Humidity      (d) Rainfall
2. Propagation of ginger is generally done using  
(a) seed      (c) root  
(b) stem (rhizome)      (d) leaf
3. Which of the following statement is not true for organic manure?  
(a) It enhances water holding capacity of soil.  
(b) It has a balance of all plant nutrients.  
(c) It provides humus to soil.  
(d) It improves texture of soil.
4. The term used for the process of separation of grains from chaff is  
(a) sieving      (c) winnowing  
(b) threshing      (d) hand picking
5. Read the statements given below.  
(i) Seeds require moisture for germination.  
(ii) Plants can absorb nutrients mostly in dissolved form.  
(iii) Irrigation protects crops from both frost and hot air currents.  
(iv) Irrigation improves soil texture.  
Choose the combination of statements which indicate the need to irrigate crops.  
(a) i and ii      (b) i, ii, iii      (c) i, ii, iii, iv      (d) i and iii
6. Which of the following tools would a farmer use to remove weeds from the field?  
(a) Hoe      (b) Axe      (c) Plough      (d) Cultivator
7. Which of the following is not true for fertilisers?  
(a) They increase the yield.  
(b) Their excessive use disturbs the balance of nutrients in soil.  
(c) They are generally used in small quantity.  
(d) They are environment friendly.
8. Given below are statements about the harmful effects of weeds on crop plants.  
(i) They interfere in harvesting.  
(ii) They help crop plants to grow healthily.  
(iii) They compete with crop plants for water, nutrients, space and light.  
(iv) They affect plant growth.  
Choose the correct combination of statements.  
(a) i, iii, iv      (c) iii, iv      (b) iii only      (d) i, ii, iii, iv
9. The process of loosening and turning of soil is called  
(a) irrigation and manuring      (c) tilling and ploughing  
(b) digging and winnowing      (d) harvesting and storage
10. The monsoon season in our country is during the months  
(a) April to December      (c) November to March  
(b) June to September      (d) January to May



11. The system of irrigation where in water is supplied drop by drop near the roots of plants, is called  
(a) pulley system (c) sprinkler system  
(b) drip system (d) lever system
12. Which of the following is an important factor for growth of crops?  
(a) Temperature (b) Humidity  
(c) Rainfall (d) All of the above
13. Which of the following is a kharif crop?  
(a) Wheat (b) Mustard (c) Groundnut (d) Gram
14. Which of the following is generally used for making compost?  
(a) Microbes (b) Earthworm  
(c) Soil (d) Animal and plant waste
15. Which of the following is used for tilling the land by cultivator?  
(a) Tractor (b) Bullock (c) Buffalo (d) Horse
16. Rhizobium is found in root nodules of which of the following plants?  
(a) Cereals (b) Pulses (c) Oil seeds (d) Horticultural plants
17. What is NPK?  
(a) Fertilizer (b) Manure (c) Weedicide (d) A type of weed
18. Which of the following crops would enrich the soil with nitrogen ?  
(a) apple (b) pea (c) paddy (d) potato
19. Which of the following is not a kharif crop ?  
(a) paddy (b) mustard (c) maize (d) groundnut
20. In agriculture, broadcasting is used for :  
(a) ploughing the fields (b) rotating the crops  
(c) removing the weeds (d) sowing the seeds
21. Which of the following is not grown by transplantation ?  
(a) chillies (b) tomatoes (c) peas (d) paddy
22. Which of the following is not a rabi crop ?  
(a) soyabean (b) peas (c) wheat (b) linseed
23. One of the following crop is not cultivated by sowing its seeds directly into soil. This one is  
(a) wheat (b) gram (chana) (c) paddy (d) maize (makka)
24. Tomatoes are cultivated by the practice called :  
(a) transpiration (b) translocation (c) transportation (d) transplantation
25. Which of the following cannot be provided to the soil by a chemical fertiliser?  
(a) nitrogen (b) humus (c) potassium (d) Phosphorus
26. Which of the following is not grown by transplantation ?  
(a) chillies (b) tomatoes (c) paddy (d) papaya
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- 27.** The Rhizobium bacteria present in the root nodules of pea plants can fix one of the following from the atmosphere. This one is :  
(a) hydrogen      (b) oxygen      (c) nitrogen      (d) halogen
- 28.** The process of beating out grains from the harvested wheat crop is called :  
(a) healing      (b) crushing      (c) threshing      (d) weeding
- 29.** The food obtained from animals is very rich in :  
(a) fats      (b) carbohydrates      (c) minerals      (d) proteins
- 30.** The Government Agency responsible for purchasing grains from the farmers, safe storage and distribution is :  
(a) CB1      (b) FBI      (c) FCI      (d) FDI
- 31.** The process of removing unwanted plants from a crop field is called :  
(a) breeding      (b) weeding      (c) transplanting      (d) harvesting
- 32.** Which of the following is not a correct statement for sowing seeds ?  
(a) seeds should be sown at right intervals  
(b) seeds should be sown at right depth  
(c) seeds should be sown in dry soil  
(d) seeds should not be sown in highly wet soil
- 33.** Which of the following system of irrigation is preferred for the uneven land ?  
(a) chain pump irrigation system (b) drip irrigation system  
(c) sprinkler irrigation system (d) river irrigation system
- 34.** The two crops which are not grown by sowing their seeds directly into the soil in large fields are :  
A. Peas B. Tomatoes C. Chillies D. Maize  
(a) A and B (b) B and C (c) A and C (d) only C
- 35.** The best technique of watering the fruit plants and trees is:  
(a) chain pump system (b) sprinkler system (c) moat (pulley system) (d) drip system
- 36.** Define the terms : (i) harvesting, (ii) threshing, and (iii) winnowing.
- 37.** (a) What are the two ways in which food grains are stored on a large scale ?  
(b) What is the advantage of storing food grains in gunny bags?
- 38.** Name two traditional methods of irrigation and two modern methods of irrigation.
- 39.** What is a 'combine' which is used in agriculture? State its functions.
- 40.** What is 'animal husbandry'?
- 41.** What are the various practices necessary for raising animals for food and other purposes ?
- 42.** (a) What is meant by kharif crops? Give two examples of kharif crops.  
(b) What is meant by rabi crops? Give two examples of rabi crops.
- 43.** (a) What is meant by 'sowing'? What are the various methods of sowing the seeds?  
(b) What precautions should be taken in sowing the seeds?
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- 44.** What are good quality seeds? You are given a sample of wheat seeds. How will you select good, healthy seeds for sowing?
- 45.** (a) What is the process of 'transplantation' in agriculture? Give examples of two crops which are usually grown by this process.  
(b) State two advantages of the process of transplantation in growing crops.
- 46.** (a) What is irrigation? Why is irrigation necessary?  
(b) Name the various sources of irrigation in our country.
- 47.** Arrange the following practices in the correct order as they appear in the sugarcane crop production :  
Sending crop to sugar factory ; Irrigation ; Harvesting ; Sowing ; Preparation of soil ; Ploughing the field ; Manuring.
- 48.** Describe briefly, how soil is prepared for sowing the seeds.
- 49.** Name two crops which are cultivated :  
(a) by sowing seeds directly into fields.  
(b) by transplanting.
- 50.** Fill in the following blanks with suitable words :  
(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 soil.  
(c) For growing a crop, sufficient sunlight, \_\_\_\_\_ and \_\_\_\_\_ from the soil are essential.  
(d) Damaged seeds would \_\_\_\_\_ on top of water.  
(e) Crop rotation helps in the replenishment of soil with \_\_\_\_\_  
(f) The supply of water to crops at different intervals is called \_\_\_\_\_  
(g) The unwanted plants present in a crop field are called \_\_\_\_\_  
(h) Dried \_\_\_\_\_ leaves are used for storing food grains at home.  
(i) Many people living in the \_\_\_\_\_ areas consume fish as a major part of their diet.
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## QUESTION BANK (SET 02)

1. Which agricultural practice is carried out with the help of a sickle?  
Answer: Sickle: A sickle is a hand-held agricultural tool used for harvesting, or reaping crops.
2. What name is given to the cutting and gathering of a food crop like wheat or paddy?  
Answer: The cutting and gathering of mature food crop like wheat or paddy is known as harvesting.
3. Name the process of beating out the grains from harvested crop.  
Answer: The process of beating out the grains from the harvested crop plants is called threshing.
4. Name the machine used in recovering the grain from already cut crop.  
Answer: A machine called combine is used for harvesting and threshing (Cutting of standing crop and recovering grains).
5. Name the process in which grains are separated from chaff and hay with the help of wind.  
Answer: The process in which grains are separated from chaff with the help of wind is called winnowing.
6. Name three food materials obtained from animals.  
Answer: The food materials that we obtain from animals are milk, meat and eggs.
7. What name is given to that branch of agriculture which deals with feeding, shelter, health and breeding of domestic animals?  
Answer: The branch of agriculture which deals with feeding, shelter, health and breeding of domestic animals is called animal husbandry.
8. Which crop is generally grown between two cereals crops in crop rotation to restore the fertility of soil?  
Answer: Leguminous crops like pulses, beans, peas are generally grown between two cereals crops in crop rotation to restore the fertility of soil.
9. State one advantages of growing a leguminous crop between two cereals crops.  
Answer: Rotation of crops (leguminous and non-leguminous crops) in the same field replenishes the soil with nitrogen naturally and increases the soil fertility.
10. Name the nitrogen-fixing bacteria present in root nodules of leguminous plants.  
Answer: The nitrogen-fixing bacteria present in root nodules of leguminous plants is rhizobium bacteria.
11. Which is the first step in the cultivation of a crop?  
Answer: The preparation of soil is the first step in the cultivation of a crop.
12. For what purpose is a hoe used?  
Answer: It is a simple tool which is used for removing weeds and for loosening the soil.
13. Name the implement used in sowing.  
Answer: The implement used for sowing is seed drill.

**14.** Name the practice used for cultivating paddy.

Answer: The practice used for cultivating paddy is transplantation.

**15.** Name the two types of substances which are added to the fields by the farmers to maintain the fertility of soil.

Answer: Manure and fertilizers are added to the fields by the farmers to maintain the fertility of soil.

**16.** What is agriculture?

Answer: Cultivation of plants and rearing of animals for food and other beneficial items is called agriculture.

**17.** What is a crop?

Answer: When plants of the same kind are grown and cultivated at one place on a large scale, it is called a crop.

**18.** What are the main types of crops in India?

Answer: There are two main types of crops in India, viz. kharif and rabi.

**19.** What is ploughing?

Answer: Loosening of soil is done by plough and this practice is also called ploughing or tilling.

**20.** What is sowing?

Answer: Putting seeds in soil is called sowing.

**21.** What are fertilizers?

Answer: Fertilisers are chemicals which contain a particular plant nutrient.

**22.** What is a fallow field?

Answer: A field which is left uncultivated for a couple of seasons is called a fallow field.

**23.** What is irrigation?

Answer: The supply of water to crops at different intervals is called irrigation.

**24.** What are weeds?

Answer: Unwanted plants which grow along with crops are called weeds.

**25.** What is winnowing?

Answer: Separation of grains and chaff is called winnowing.

**26.** Explain the structure of a plough.

Answer: A plough is composed of ploughshare and ploughshaft. The ploughshare is triangular in shape and is made of iron. The ploughshaft is made of wood and is very long. It is harnessed to a pair of bullocks or other cattle with the help of a beam.

**27.** Explain the structure of traditional seed drill.

Answer: The traditional seed drill is composed of a funnel with a long and pointed neck. It is attached to the ploughshaft. Seeds are kept in the funnel and they drop slowly through the neck, while the field is being tilled. The pointed neck of the seed drill pierces the soil and seed goes deep into the soil.

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**28.** What is the difference between kharif and rabi?

Answer: Kharif Rabi These crops are grown during rainy season. These crops are grown during winter season. These crops require plenty of water. These crops require less water. Examples: paddy, maize, soyabean, etc. Examples: wheat, mustard, gram, etc.

**29.** What is the significance of ploughing?

Answer: Significance of Ploughing: This allows the roots to penetrate deep into the soil. Loose soil allows the root tips to breathe easily when they go deep into the soil. It allows proper mixing of nutrients from humus into the soil. Loosening of soil brings nutrients and minerals to the top and thus plants are able to utilize these minerals.

**30.** Write a brief note on fertilizers.

Answer: Fertilisers are chemicals which contain a particular plant nutrient. Fertilizers are made in factories. Urea, ammonium sulphate, super phosphate, potash and NPK (Nitrogen, Phosphorus and Potassium) are examples of fertilizers.

**31.** What are the advantages of fertilizers?

Answer: Advantages of Fertilisers: Fertilizers give quicker results compared to manure. Use of fertilizers has helped farmers in significantly improving farm yield.

**32.** Write a short note on storage of crops.

Answer: Proper storage of harvested crop is important to prevent damage from moisture and pests. Grains are sun dried before being stored. Grains are stored in silos. Silos can be of varying heights; ranging from one meter to several meters. Fruits and vegetables are stored in cold storage. Suitable pesticides are used while storing grains. Neem leaves are also used as pesticides.

**33.** Write a short note on crop rotation.

Answer: In this method, a legume crop is sown between two successive cereal crops. Legume plants harbor rhizobium bacteria in their root nodules. These bacteria help the plants in nitrogen fixation in soil. Thus, growing a legume crop helps in replenishment of nutrients in soil.

**34.** What are the advantages of manure?

Answer: Advantages of Manure:

Manure increases nutrients in soil.

It improved soil texture.

It improves water retaining capacity of soil.

It is free of any toxic material and thus is environment friendly.

**35.** Explain the structure and working of hoe.

Answer: This is used for leveling the soil and for removing weeds. This is made of iron or wood. It is a long beam with a handle. A sharp blade is fixed on one end. This is usually pulled by animals. A hoe is used for leveling the field.

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