



1

CROP PRODUCTION AND MANAGEMENT

Introduction

In India, 70% of our population is engaged directly or indirectly in agriculture. Human requires food for their survival as the energy obtained from the food is used for metabolic activities. These food is obtained from various agricultural practices. So in order to provide food for a large population, crop production and its proper management is necessary.

Agriculture : (Ager means field and Culture means cultivation or growing): Agriculture is the applied biological science of growing plants and raising animals that are useful to humans, involving soil cultivation, breeding and management of crops and

live stock.

Horticulture: It is the process of growing fruits, vegetables & ornamental plants for commercial purpose

Crop plants and crop seasons

The plants which are grown by man in large numbers to get useful products are known as crops.

Do you know?

- The land where plants are cultivated on a large scale is called field.

Table: Classification of crop plants

S. No	Type of crop plant	Examples	Importance
1	Cereal crops	Wheat, rice, maize, sorghum, oat, barley.	Rich in carbohydrates for energy requirements.
2	Pulse crops	Gram , pea, black gram, pigeon pea, lentil etc.	Rich in proteins.
3	Oil seed crops	Soyabean, groundnut, sunflower, sesame, castor, mustard, linseed .	Rich in fat and oils.
4	Root crops	Turnip, carrot, sweet potato.	It is utilized as the vegetables and Medicines.
5	Sugar crops	Sugarcane and beetroot.	Important for wine industry.
6	Fibre crops	Jute, cotton and coconut.	Important for cordage and textile industry.
8	Plantation crops	Tea, coffee, coconut and Rubber.	cash crops, major source of earning.
9	Fodder crops	Berseem, maize, sorghum, elephant grass and Sudan grass.	Provide fodder for cattle.
10	Horticulture crops (fruits and vegetables)	Apple, banana, guava, pomegranate, pear, chillies, dhania, jira, carrot, raddish, cabbage, cauliflower, spinach, cucurbit.	Provide vitamins, minerals along with small quantities of carbohydrate, proteins and oils.





In India there are two main crop seasons for cultivating crops. These are known as winter seasons and monsoon season.

- 1. Rabi crops:** These crops are sown in the beginning of winter i.e., between October and November, and harvested by March and April. These crops do not depend on monsoon rains.
- 2. Kharif crops:** These crops are sown at the beginning of the monsoon seasons between June and July and harvested by September and October. These crops depend on monsoon rains for growth.
- 3. Zaid crops:** Beside these, there are some crops which are grown between March to June (Summer season) at many places. These are known as **Zaid crops**.

S. No	Kharif crop / Rainy season crop	Rabi crop/Winter season crop	Zaid/Summer season
1	Are grown during monsoon/ rainy Season.	Are grown during winter season.	Are grown during mainly in the summer season.
2	They are sown in June/July & harvested in September / October.	They are sown in October / November & harvested in March/April.	They are sown in March & harvested in June.
3	They require warm & wet weather.	They require cold & dry Weather.	They require warm day weather.
4	Example: Rice, jowar, bajra, cotton, groundnut, urad, moong etc.	Example: Wheat, barley, gram, mustard, potato etc.	Example: Seasonal fruits and vegetables.

FUNDAMENTAL UNLOCKED- (FU#1)

Q.1 Write two examples of Rabi crops.

Q.2 What is fodder crops? Write two examples of fodder crops.

Q.3 What is Zaid crops? Write any two examples of Zaid crops.

Q.4 Write the name of three oil crops.

Basic practices of crop productions

All the activities which are involved in cultivation of crops, from sowing to harvesting, are known as agricultural **practices**. Cultivation of crops involves several activities undertaken by a farmers over period of time.

Practices these activities are listed below

1. Preparation of soil
2. Sowing
3. Adding manure and fertilizers
4. Irrigation
5. Protecting from weeds
6. Harvesting
7. Storage

Preparation of Soil

1. Preparation of soil: This is the first essential stage for cultivating any crop plant. Preparation of soil involves the following step - ploughing or digging, levelling and manuring.

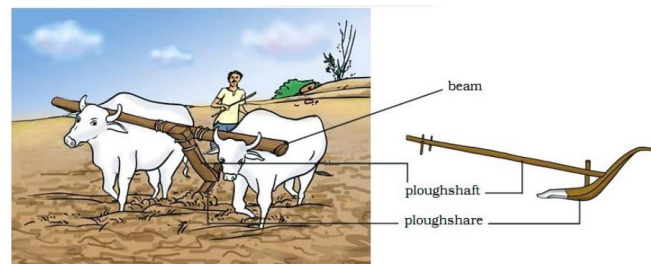
(i) Ploughing and digging: The process of loosening and turning up of the soil is called tilling or ploughing.

This is done by using a wooden or iron plough and cultivator.

Significance of ploughing

- This practice loosens the soil.
- The soil is overturned and properly aerated.
- This allows the roots to penetrate deeper easily.
- It improves soil drainage.

Implements of ploughing :



The plough



- (a) **Plough:** This implement is made of wood and is drawn by a pair of bulls or other animals (horses, camels, etc.). It contains a strong triangular iron strip called ploughshare. The main part of the plough is a long log of wood which is called a plough shaft. There is a handle at one end of the shaft and the other end is attached to a beam which is placed on the bulls' necks.
- (b) **Cultivator:** Now a days ploughing is done by tractor driven cultivator. The use of cultivator saves labour and time.



Cultivator

- Plough and cultivator are used for tilling the soil, adding fertilisers to the crop, removing the weed etc.
- (ii) **Levelling:** Soil, if ploughed in dry season, breaks into big mud pieces called crumbs. It is necessary to break these crumbs with the help of a wooden plank or iron leveller. The field is levelled for sowing as well as for irrigation.

Agriculture implements

The tools which are used in cultivation of plant are known as agricultural implements. A list of commonly used agricultural implements along with their uses are given below in the table.

Name of implements	Uses
Khurpa	For weeding
Spade	For digging
Wooden plough	For tilling
Iron plough	For tilling
Soil plank	For breaking crump
Leveller	For levelling
Seed drill	For sowing
Harrow	For wedding
Sickle	For harvesting
Combines	For harvesting and threshing
Sprayers	For spraying

Sowing

2. **Sowing:** The process of putting seeds into the soil is called sowing. Before sowing, good quality seed are selected.
- (i) **Selection of seeds:** Good quality seeds are heavier than damaged seeds. Damaged seeds become hollow and are thus lighter. So they float on water.
Seeds should be high yielding varieties and disease free.

(ii) Methods of sowing:

1. **Broadcasting:** Seeds are sown manually by directly scattering them into the soil, this process is called broadcasting.
2. **Seed drills:** The other method is to use a seed drill with the help of tractors or bullock. A simple seed drill consists of an iron tube with a funnel at the top attached to the plough.



3. **Transplantation:** The process in which seeds are directly sown in the nurseries and seedlings are then transferred to the main field. This process is known as transplantation.

(iii) Precautions during sowing

- Spacing should be proper.
- Seeds should be treated with pesticides and fungicides.
- Depth should be proper.

Do you know?

Vegetative propagation: In this type of propagation vegetative parts of plants like leaf, stems and roots can give rise to new plant.

In crops like sugarcane, potato, ginger, onion, turmeric etc. Vegetative plant parts instead of seeds are used for growing the crop.



Adding Manure and Fertilizers

3. Adding manure and fertilizers: Crops absorb various nutrients from the soil through their roots. They are required for their growth and development. The replenishment is done by adding manures and fertilisers to the soil. This process is called manuring.

(i) Manures: Manures are natural, organic substances obtained by the decomposition of animal wastes and plant residues. They supply essential nutrients and humus to the soil and make it fertile. Manures are of the three kinds: farm yard manure, compost and green manure.

(a) Farm yard manure: It consists of cattle dung, urine, straw, leaves and other farmyard wastes.

(b) Compost: It is the manure obtained by the decomposition of dead plants and animal wastes, sewage waste, etc. It is made by burying all available organic material in a pit with alternative layers of soil and leaving it to rot.

(c) Green manure: Green manure is formed by the decomposition of fast growing leguminous plants like guar and sun hemp. These plants are grown and ploughed back into the soil.

Advantages of manure

- It enriches the soil with nutrients.
- It improves the texture of the soil.
- It adds organic matter to the soil which improves the quality of soil.
- It increases water-holding capacity of the soil.
- It increases the population of useful microorganism in the soil
- It improves and maintains the quality of the soil for a long time.

Disadvantages of manure

- Manure are bulky in nature. So these are difficultly to store, use and transport.
- It is not nutrient specific.
- It is insoluble in water.
- Take more time to release nutrients from manure.

(ii) Fertilisers

- A fertiliser is a man-made inorganic or organic compound which supplies specific nutrients to the soil. These are manufactured in factories.
- The most commonly used fertilisers are the NPK fertilisers which are rich in nitrogen, phosphorus and potassium.
- Fertilisers are applied either by broadcasting in the field or by spraying or through irrigation channels mixed into water (fertigation). Some examples of commonly used fertilisers are urea, ammonium sulphate, superphosphate and potassium nitrate.

Advantage of fertilisers:

- Fertilisers are nutrients specific.
- These are easily soluble in water.
- These are easy to store, use and transport.
- These are required in small quantities.
- Use of fertilisers increase the production within a short period of time.

Disadvantage of fertilisers:

- Excessive use leads to soil infertility.
- Does not provide humus to soil.
- They causes pollution.

Do you know?

- The practice of leaving the field uncultivated for one or more seasons is known as fallowing.
- Leguminous crops such as pea, bean, soyabean or groundnut are able to fix atmospheric nitrogen and convert it into usable nitrogen. The process is called nitrogen fixation.
- Nodules are formed in the roots of leguminous plants. Rhizobium are soil bacteria present in the root nodules. These bacteria fix the atmospheric nitrogen.
- Earthworms help to turn and loosen the soil. Earthworms and microbes help in adding humus (dead organic matter) to the soil. The organisms are, therefore, friends of the farmer.




Table: Differences between manures & fertilisers

S. No	Manures	Fertilisers
1	Manures are organic natural substances derived from the decomposition of biological materials (Plants and animal residues).	Fertilisers are inorganic or organic substances.
2	Manures contain organic matter in large quantities.	Fertilisers do contain organic matter in very less quantities.
3	Manures contain small amount of essential plant nutrients.	Fertilisers are rich in plant nutrients like NPK.
4	They are not nutrient - specific.	These are nutrient - specific.
5	They are prepared in fields & villages.	These are manufactured in factories.
6	Manures are bulky substances. So, these are inconvenient to store, use & transport.	These are available in concentrated form. So these are easy to store, use & transport.
7	Manures do not cause pollution.	They cause pollution.

(iii) Natural methods of replenishing the soil with nutrients

(a) Leaving the field fallow: It is the process of leaving the field uncultivated (fallow) for one or more seasons. Fallow land will regenerate the lost nutrients. However, due to high demand of foodgrains this method is no longer followed.

(b) Crop rotation: It is the method of growing different crops alternately on the same land. Earlier, farmers in northern India used to grow legumes (**Example:** pea, berseem) as fodder in one season and wheat or other cereal crops in the next season. This practice was helpful in the replenishment of the soil with nitrogen. Farmers should be encouraged to adopt this practice.

(c) Mixed cropping: Sometimes two or more crops are grown together in the same field. This practice is called mixed cropping or multiple cropping. The crops are chosen in such a way that the products and waste materials from one crop help in the growth of the other.

Soybean and maize crops are often grown together for this reason.

However, these methods alone are not enough to maintain soil fertility and farmers have to add manures and fertilisers from time to time.

FUNDAMENTAL UNLOCKED- (FU#2)

Q.1 Define crops rotation.

Q.2 Write two disadvantages of manure and fertiliser.

Q.3 Write name of two implements which are used in ploughing.

Q.4 Write name of two practices which are used in crop production.

Q.5 Define vegetative propagation.

Irrigation

4. Irrigation: The supply of water to crops at different intervals of time is called irrigation.

- Plants need water for proper growth and development. Seeds need water for germination. Plants need water to draw nutrients from the soil and for making food by photosynthesis. Water helps the plant to translocate food from one part to other parts of the body. It also protects the crop from frost and extremely hot air currents. Thus, water plays an important role in the life of plants right from the germination stage to the maturity stage.

(i) Purpose of irrigation: In agriculture irrigation full fills the following requirements and goals of crop plants.

- Irrigation supplies two essential macronutrients-hydrogen and oxygen to the crop plants.
- It provides moisture to the soil, which helps in the germination of seeds.
- It helps in growth and elongation of the roots of crop plants.
- It helps in the absorption of nutrients by the roots of crop plants from the soil.
- It helps in increasing the number of aerial branches.





(ii) Water requirements or irrigation of crop plants depends on two factors

(a) Crop-based irrigation: Water requirement of different crop plants varies at different stages of their growth & maturation

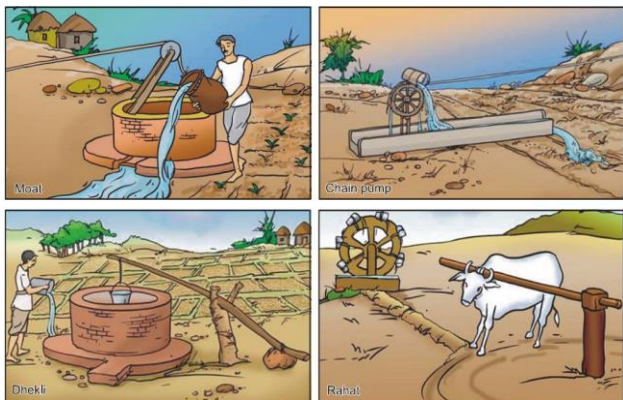
Example: paddy crop is transplanted in standing water and also requires continuous water supply whereas this is not so for the crops of wheat, gram, cotton, maize etc.

(b) Soil-based irrigation: Irrigation also depends on the nature of soil in which the crop is grown

Example: if two wheat crops are grown together one in sandy and another in clay soil, then in sandy soil more frequent irrigation is needed than clay soil.

(iii) Sources of irrigation: The main sources of irrigation in our country are rivers, lakes, ponds, wells, tubewells, dams and canals. Water from these sources is delivered by irrigation canals or pumped by using electric or diesel pumps.

(iv) Traditional methods of irrigation: In our country traditional systems of irrigation like the **pulley system (moat)**, **chain pump**, **lever system (rahat)** and **dhekli** have been in use for centuries to lift water from water reservoirs and supply it to the field for irrigation. These methods are cheaper but less efficient.

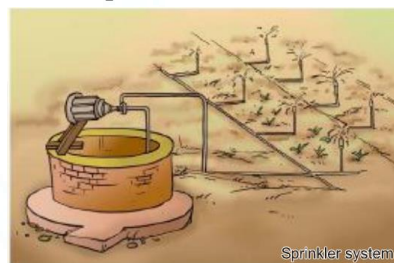


Pumps are commonly used for lifting water. Diesel, biogas, electricity and solar energy is used to run these pumps.

(v) Modern methods of irrigation: There are two modern methods of irrigation commonly used in India.

(a) Sprinkler System: This system is more useful on

the 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. Sprinkler is very useful for lawns, coffee plantation and several other crops.



(b) Drip irrigation: Drip irrigation is also called trickle irrigation or micro-irrigation. In this system water falls drop by drop just at the root zone. The system minimises the use of water and fertilizers. Drip irrigation is used by farms, commercial greenhouses and residential gardens and it is the best technique for watering fruits plants, gardens and tree.



Fertigation is an innovative method for applying fertilizers through drip irrigation to maximize farm productivity with available water.

Protection of crops

Protection from weeds: Weeds are the unwanted plants which grow along with the main crops. They are undesirable because they compete with the main crop for nutrients, space, air, light, water and reduce the crop yield. They also spread pests onto the crops and sometime produce poisonous substances which are harmful to animals and humans. The process of removing weeds from the field is called weeding.

(i) Time for weeding: The best time for the removal of weeds is before they produce flowers and seeds.



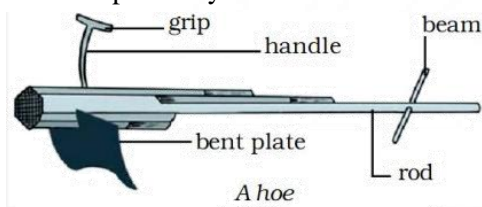
(ii) **Some common weeds:** Some of the most common weeds found in crop fields are

- Wild oats (Javi).
- Grass
- Amaranthus (Chaulai)
- Chenopodium (Bathua)
- Parthenium (carrot gras)

(iii) Methods of weeding

(a) **Manual weeding:** Weeds may be removed manually either by uprooting them or by cutting them with the help of tools like hand fork, khurpa, harrow and hoe.

Hoe is a simple tool which is used for removing weeds and for loosening the soil. It has a long rod of wood or iron. A strong, broad and bent plate of iron is fixed to one of its ends and works like a blade. It is pulled by animals.



(b) **By using weedicides:** The chemical substances which destroy (kill) weeds but do not harm the crop are called weedicides or herbicides. These weedicides are diluted in water and sprayed in the field with a sprayer.

Example: 2, 4-D nitrogen, atrazine.

- Weedicides must be used with care as they are poisonous and have side effects if consumed. Farmers should cover their nose and mouth with a piece of cloth during spraying.

(c) **Biological method:** Weeds can also be controlled by biological methods. For example, cochineal insects are used to control the growth of the weed called opuntia.

Employing living organisms to destroy weeds. Cassia plant prevents the growth of parthenium weed. Herbivorous fish feed on aquatic weeds.

Advantages of biological methods: It does not cause pollution. Organisms are harmless to the main crop.

(d) **Protection from other factors:** Pests are organisms that attack and damage crops. They may be rodents (rats), insects (locusts, weevils, termites), stray animals and birds. It is estimated that 10% of our crop is destroyed every year by these pests.

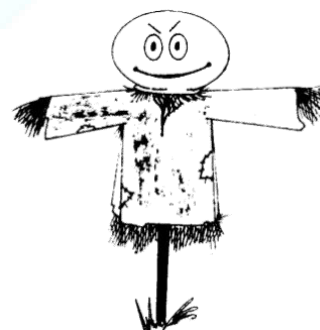
Crops are also attacked by bacteria, fungi and viruses by causing several diseases. These diseases reduce the quality and quantity of the product. These diseases get transmitted through seeds, air, soil or through insects.

(i) **Pesticides:** The chemical substances which kill pests without harming the crops are called pesticides.

These chemicals are sprayed by using a sprayer. Following chemicals are used to kill these pests.

- **Insecticides:** These are used to destroy insects. Examples: DDT, BHC, Malathion.
- **Fungicides:** These are used to destroy fungi. Examples: sulphur, lime sulphur.
- **Rodenticides:** These are used to kill rodents. Examples: zinc phosphide, warfarin. Insecticides, fungicides and rodenticides are collectively called pesticides

(ii) Birds can be scared away by putting scarecrows in the fields as shown in figure.



Scarecrow to keep birds away from the crop

Harvesting

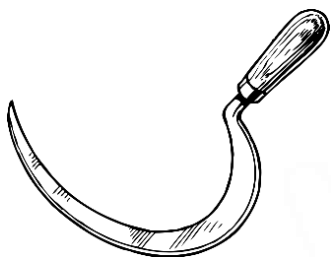
Harvesting: Once the crop has matured, it has to be gathered. The process of cutting and gathering a matured crop is known as harvesting.

Harvesting in our country is either done manually by sickle or by a machine called harvester.

(i) **Harvesting of grain crops:** Agricultural tools used for harvesting



1. Sickle:



Sickle

Hand sickle was the first tool used for harvesting. Most of the grain crops are reaped close to the ground with the help of a sickle

2. Harvester : It is a machine used for harvesting the crops. Many crops required special harvesting machines, for corn, these are corn pickers and huskers. For cotton, these are cotton strippers which remove cotton balls off the plant and separate the fluffy cotton from the hard carving

(a) Threshing: The process of separating the grain from the harvested stalks of hay is known as threshing. This is done by spreading the harvested crop on the ground and walking over them.



(b) Combine: A combines which cut, thresh as well as separate the grain from the chaff.

Now a days this is carried out with the help of a machine called 'combine' which is in fact a combined harvester and thresher.

(c) Winnowing: The process of separating the grain from the chaff is known as winnowing. Farmers hold the mixture of grains and chaff at a height and allow them to fall in a gentle stream. The wind blows away the chaff which is lighter. The heavier grains fall directly on the ground below and are thus separated

(ii) Harvesting of other crops: Besides grain crops, all other crops like vegetable crops, cash crops, etc. are harvested through different processes and techniques. Plucking, gathering, packing, storing of crops, etc. are the different steps in the process of harvesting some specific crops.

Storage

Storage: There are two types of food materials perishable and non-perishable.

- **Perishable food materials:** Perishable food materials are those which get spoiled easily when kept for sometime at room temperature, for example, vegetables, fruits, fish, meat, milk etc.
- **Non-perishable food materials:** Non-perishable food materials are those which do not get spoiled even when kept for a long time at room temperature, for example, food grains, spices sugar etc.

(i) Modes of storage: There are two different modes of storage: dry storage and cold storage.

(a) Dry storage: This method is used for storage of non-perishable food materials. Foodgrains are dried in the sun to bring down the moisture content should be below 14% of weight to prevent the attack by pests. The dried foodgrains are then weighed, packed in gunny bags and transferred to properly ventilated halls called godowns or granaries.

- The gunny bags in the godown should be kept about 60 to 70 cm away from the walls and on wooden platforms about 10 to 15 cm above the ground. The godown must be kept free from pests by spraying various pesticides from time to time.
- Grain silos are specially designed tall cylindrical structures for bulk storage of foodgrains. These silos can store different stocks of food grains at different levels. The required foodgrain can be taken out from the openings provided in the silos.
- Dried neem leaves are used for storing food grains at home for storing large quantities of grains in big godowns specific chemical treatments are required to protect them from pests and microorganisms.





(b) Cold storage: This method is used for storage of perishable food materials. These food material have very short life so that these are usually stored at low temperature.

Icebox or refrigerator is used at home to store fruits, vegetables, milk, milk products, fish, etc. On commercial scale, the perishable food materials are stored in either a deep freezer or a cold storage.

(ii) Advantages of food storage

- It prevents the food from being spoiled by the action of enzymes and microorganisms.
- It increases the storage period of food materials.
- It helps in the availability of season fruits and vegetables around the year.
- It makes the transportation of food materials easier.
- It helps to maintain prices in the market.

Food from animals

The keeping of animals for specific purpose is called domestication. All domesticated and useful animals constitute **livestock**. The breeding, feeding and carrying of livestock for food and other useful purpose is known as animal **husbandry**.

Animal products are :

- Fish and other sea products.
- Meat , egg and poultry.
- Milk and milk product.
- Honey.

Do you know?

- Large-scale rearing of honeybees is called **apiculture**.
- Large-scale rearing of fish is called **pisciculture**.

FUNDAMENTAL UNLOCKED- (FU#3)

Q.1 Define irrigation. Write two traditional methods of irrigation.

Q.2 Explain sprinkler irrigation.

Q.3 Write name of four weeding plants.

Q.4 Write name of two weedicides.

Q.5 Define threshing and winnowing

Q.6 Define perishable and non-perishable storage.





EXERCISE - I

SINGLE CORRECT TYPE QUESTIONS

1. The process of separating grains from the chaff is known as
(A) threshing (B) winnowing
(C) harvesting (D) weeding
2. Transfer of seedlings from nurseries to the main field is termed as
(A) weeding (B) sowing
(C) transplantation (D) ploughing
3. The unwanted wild plants growing along with the crop plants are called
(A) weeds
(B) seedlings
(C) minor crops
(D) Major crops
4. Sickle is used for
(A) Harvesting (B) Irrigation
(C) sowing
(D) None of these
5. Which one of the following does not cause plant diseases?
(A) Viruses (B) Bacteria
(C) Algae (D) Fungi
6. Rahat and Dhekli are the
(A) names of two persons
(B) names of two villages
(C) traditional methods of irrigation
(D) none of these
7. Which one of the following is traditional method of irrigation?
(A) Moat (B) Chain pump
(C) Rahat (D) All of these
8. Chemicals which are used for removal of weeds are
(A) insecticides (B) pesticides
(C) weedicides (D) none of these
9. Fertigation is a new method in which
(A) Manure add in drip irrigation
(B) Fertilisers add in drip irrigation
(C) Manure add in sprinkler irrigation
(D) Fertilisers add in sprinkler irrigation
10. In which of the following storage structure food grains are stored?
(A) Silos (B) Jute bags
(C) Granaries (D) All of the these
11. Fertilizers are harmful for soil because
(A) they increase soil fertility
(B) they cause the soil pollution
(C) provides the nutrients
(D) they are inorganic salt.
12. The crops that are harvested by March and April are
(A) rabi crops (B) kharif crops
(C) medicinal crop (D) fibre crops
13. Which one of the following is kharif crop?
(A) Wheat (B) Maize
(C) Barley (D) Mustard
14. Ploughing, leveling and manuring are the steps of
(A) preparation of soil
(B) sowing
(C) irrigation
(D) weeding
15. Which one of the following is the advantage of soil preparation?
(A) It increase soil fertility
(B) It improves soil aeration
(C) Soil become loose for roots to penetrate
(D) All of these are correct
16. Which of the following is sugar crop
(A) Soyabean (B) Wheat
(C) Beetroot (D) Berseen
17. Large scale rearing of fish is called
(A) apiculture
(B) pisciculture
(C) animal husbandry
(D) agriculture
18. In _____ soil, frequent irrigation is required
(A) sandy (B) clayey
(C) loamy (D) all of these





19. Large quantity of perishable foods are stored in
(A) cold storage (B) silos
(C) godowns (D) in the open fields
20. Combine is used for
(A) tilling
(B) weeding
(C) harvesting and threshing
(D) sowing
21. Which is the by-product of honeycomb?
(A) Grease (B) Wax
(C) Vitamin (D) Sugar
22. Ecological importance of earthworms is that
(a) it damages roots of plants.
(b) it takes organic matter from the soil surface, deeper into the soil for absorption by plants.
(c) it's castings are rich in organic matter.
(d) it serves as food for protozoa.
Which of the above statements are correct?
(A) a and c (B) b and c
(C) a and b (D) a, b and c
23. 'SILOS' are structures used for
(A) storage of milk (B) storage of water
(C) storage of grains (D) release of smoke
24. Which one of the following is a weed?
(A) Wheat (B) Chenopodium
(C) Maize (D) Rice
25. The fertility of agricultural soil depends upon
(A) presence of nitrogen in the soil
(B) presence of carbon in the soil
(C) presence of both nitrogen and sodium in the soil
(D) none of the above

VERY SHORT ANSWER TYPE QUESTIONS

1. Which agriculture task has to be completed before sowing?
2. Name the various irrigation systems adapted in India.
3. What do you mean by the term agricultural practices?
4. Explain the various harmful effects of fertilizers.
5. What are the advantages of manures and fertilizers?
6. Name the implement used for sowing seeds.

7. Name two agricultural tasks performed by a combine.
8. Give two examples of rabi and kharif crops.
9. What do you understand by weed? Write two names of weeds.
10. Which agricultural practice comes first: harvesting or weeding. Why is it so?

SHORT ANSWER TYPE QUESTIONS

1. Why weeds should be removed?
2. Why seeds should be grown at proper distance.
3. What do you mean by transplantation? Which crops are grown by this method?
4. What are the differences between rabi and kharif crops?
5. How would you protect crops from pests and diseases?
6. What type of food materials are usually stored in cold storage
7. List in sequence the various agricultural practices which a farmer has to adapt for growing wheat crop.
8. State four differences between manures and fertilisers.
9. Write a short note on crop seasons.
10. Write methods of removal of weeds.

LONG ANSWER TYPE QUESTIONS

1. What are the preventive measures taken for storage of food grains?
2. Explain how fertilizers are different from manures.
3. What are weeds? How can we control them?
4. What is drip irrigation method? Why is considered advantageous over traditional methods of irrigation?
5. Why does the soil need to be turned and loosened? Give any three Reasons.
6. What is irrigation? Describe two methods of irrigation which conserve water.
7. Name the agricultural implement shown in the given figure. What are its advantages?





8. How to store perishable and non perishable food materials? Write advantages of food storage.

CASE BASED QUESTION

1. Water consist two macro molecules Hydrogen and Oxygen. Water is necessary for the survival and growth of plants. Agricultural fields need to be watered from time to time according to the need of different crops. The supply of water to crops at different intervals of time is called irrigation. Different methods are used for irrigating the fields.

(I) Define irrigation.

(II) Write two traditional methods of irrigation.

(III) In agricultural practices, irrigation is done after_____.

(A) Preparation of soil

(B) Sowing

(C) Harvesting

(D) Addition of manures and fertilizers

- (IV) The traditional method of irrigation includes
(A) Tube wells and drip system
(B) Dhekli and moat
(C) Rahat and sprinkler system
(D) Drip system and Rahat.

2. All the activities which are involved in cultivation of crops, from sowing to harvesting are known as agricultural practices. Various activities undertaken by farmers over a period of time for the cultivation of crops. There are different types of tools, machines, chemicals, etc. used in modern agriculture.

(I) Write name of tools which are used in Ploughing (Any two).

(II) Which implement are used in Sowing.

(III) The process of separating grain seeds from chaff is called

(A) Ploughing

(B) Winnowing

(C) Threshing

(D) Harvesting

(IV) The naturally occurring substances that provide lot of humus to the soil are called

(A) Fertilizers

(B) Manures

(C) Weedicides

(D) Pesticides




EXERCISE - II
MULTIPLE CORRECT TYPE QUESTIONS

1. Match different terms in column I with their related description in column II and select the correct option from the given codes.

	Column I		Column II
(a)	Manuring	(i)	Loosening and turning of soil
(b)	Threshing	(ii)	Adding nutrients to the soil
(c)	Tilling	(iii)	Crushing big lumps of soil
(d)	Levelling	(iv)	Separation of grain from the rest of the plant

- (A) (a) - (i), (b) - (iii), (c) - (ii), (d) - (iv)
 (B) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)
 (C) (a) - (ii), (b) - (iv), (c) - (i), (d) - (iii)
 (D) (a) - (iv), (b) - (iii), (c) - (i), (d) - (ii)

2. Select the incorrect match(es).

- (i) Kharif crop: Paddy and pea
 (ii) Rabi crop : Gram and wheat
 (iii) Storage of grains: Silos and granaries
 (iv) Weeds : Amaranthus and Chenopodium

- (A) (i) only (B) (i) and (ii) only
 (C) (ii) only (D) (ii) and (iv) only

3. Which of the following is/are incorrect statement(s) regarding manure?

- (i) Manure enhances the water holding capacity of the soil.
 (ii) Manure is nutrient specific, i.e. supplies a particular desired nutrient.
 (iv) Manure decreases the number of friendly microbes.
 (v) Manure improves the texture of the soil.
 (v) Manure is prepared by the decomposition of dead plant and animal matter.

- (A) (i), (iii) and (v) only
 (B) (v) only
 (C) (ii), (iii), (iv) and (v) only
 (D) (ii) and (iii) only

4. Read the given statements and select the Correct option.

Statement 1: Sprinkler system is effective for irrigating areas having sandy soil.

Statement 2: Sprinkler irrigation method involves pumping water under pressure through nozzles and spraying it over soil like rain for proper distribution of water.

- (A) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1.
 (B) Both statements 1 and 2 are true but statement 2 is not the correct explanation of statement 1.
 (C) Statement 1 is true but statement 2 is false.
 (D) Both statements 1 and 2 are false.

5. Select the incorrect match.

- (A) Irrigation - Dhekli
 (B) Weeding Harrow
 (C) Harvesting Trowel
 (D) Fumigation – Fungicide

6. Which of the following is not a fibre crop?

- (A) Jute (B) Cotton
 (C) Berseem (D) Coconut

7. Select the incorrect statement.

- (A) NPK fertilisers are insoluble in water and rich in nitrogen, phosphorus and potassium salts.
 (B) Compost is made by burying all available organic materials in a pit and is rich in organic nutrients.
 (C) Pongal and Bihu are celebrated at the time of harvesting of crops.
 (D) Granaries are large buildings where grains are stored in gunny bags.

8. Crop plants may be attacked by diseases which affect the crop production. Bacteria is the causal organism of diseases like

- (A) Smut of wheat
 (B) Wilt of potato
 (C) Blight of potato
 (D) Both (A) and (C)





9. Which of the following statements are correct?
- (i) Fumigants are chemicals that kill or repel pests without affecting stored grains.
 - (ii) Water logging decreases the amount of salts in the soil that increases soil ,
 - (iii) Fertilisers are not readily soluble in water, so they are absorbed by the plants slowly.
 - (iv) Rust of wheat is a fungal disease.
- (A) (i), (ii), (iii) and (iv) only
(B) (i) and (iv) only
(C) (ii) and (iv) only
(D) (iii) and (iv) only
10. The cutting and gathering of crop after it has matured is called X. After this, grains are separated from the crop by a process called Y. Z is the process of separating the hay and chaff from the grains. Which of the following statements is/are correct regarding X, Y and Z?
- (A) Z is done with the help of wind in which grains along with husk is allowed to fall from a height.
(B) X is done mechanically by combine and manually by plough and harrow.
(C) X is the process known as threshing whereas Y is the process known as winnowing.
(D) Both (A) and (B)
11. A few healthy gram seeds are placed in each of the three pots P, Q and R containing same type of soil. The soil in pot p is mixed with some green leaves. The soil in pot Q is mixed with old cow dung while soil of pot R is mixed with urea. Pots are watered regularly and given proper environment for plant-growth. Which of the following will be observed after 10 days?
- (A) Lot of growth in R with replenishment of all the nutrients.
(B) Lot of growth in P without replenishment of any nutrient.
(C) Lot of growth in Q with replenishment of the nutrients.
(D) Both (A) and (C)
12. The different steps of agricultural practices are given below randomly.
- (i) Irrigation (ii) Ploughing
 - (iii) Weeding (iv) Levelling
 - (v) Harvesting (vi) Fertilisers
 - (vii) Sowing (viii) Crop protection
 - (ix) Storing seeds
- Which of the following represents the correct sequence of these practices?
- (A) (ii)-(iv)-(vii)-(i)-(vi)-(iii)-(viii)-(v)-(ix)
(B) (iv)-(ii)-(vii)-(i)-(vi)-(iii)-(viii)-(v)-(ix)
(C) (ii)-(vii)-(iv)-(iii)-(i)-(v)-(vi)-(viii)-(ix)
(D) (iv)-(vii)-(i)-(ii)-(iii)-(viii)-(ix)-(v)-(vi)
13. Zaid crops also known as
- (A) Kharif crops
(B) Summer crops
(C) Winter crops
(D) Monsoon crops
14. The cross breeding of different varieties of crops to get a new crop with desired characteristics is known as
- (A) Crop transplantation
(B) Crop hybridization
(C) Winnowing
(D) Lodging
15. Who is known as the father of green revolution in India?
- (A) M. S. Swaminathan
(B) Verghese Kurien
(C) Norman E. Borlaug
(D) Hargobind Khorana

ASSERTION AND REASON

In the following questions, a statement of assertion (A) is followed by a statement of reason (R).

- (A) Both Assertion & Reason are true and the reason is the correct explanation of the assertion.
(B) Both Assertion & Reason are true but the reason is not the correct explanation of the assertion.
(C) Assertion is true statement but Reason is false.
(D) Both Assertion and Reason are false statements.





- | | |
|---|--|
| <p>1. Assertion: The process of loosening and turning of the soil is called tilling.
Reason: tilling is done by using a seed drill.</p> <p>2. Assertion: Nowadays, ploughing is done by tractor-driven cultivators.
Reason: Traditional ploughs are not available.</p> <p>3. Assertion: Soyabean is a rabi crop.
Reason: Soyabean is sown in the winter season.</p> | <p>4. Assertion: In Sprinkler system of irrigation, water is not wasted.
Reason: Sprinkler system provides water to plants drop by drop.</p> <p>5. Assertion: An appropriate distance between the seeds or plants is important.
Reason: Proper distance allows plants to get sufficient sunlight, nutrients and water from the soil.</p> |
|---|--|

ANSWER KEY

EXERCISE - I

SINGLE CORRECT TYPE QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	B	C	A	A	C	C	D	C	B	D	B	A	B	A	D
Que.	16	17	18	19	20	21	22	23	24	25					
Ans.	C	B	A	A	C	B	B	C	B	A					

Case Study–1

(III) - (D) (IV) - (B)

Case Study–2

(III) - (B) (IV)- (B)

EXERCISE - II

HOTS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	C	A	D	A	C	C	A	B	B	A	C	A	B	B	A

ASSERTION AND REASON

Que.	1	2	3	4	5
Ans.	C	C	D	C	A

