

परमाणु ऊर्जा शिक्षण संस्था, मुंबई
Atomic Energy Education Society
Session: 2023 – 24

CLASS- VIII

SUBJECT : SCIENCE

WORKSHEET No. – 1

Name of the Chapter: **Crop Production and Management**

I. Choose the correct option:- (1 x 10 = 10M)

1. d. Irrigation
2. c. Unwanted plants growing along the crops
3. d. Both b and c
4. a. Winnowing
5. b. Weeds
6. b. October, November
7. a. Rabi crops
8. c. Paddy and maize
9. d. Weedicide
10. a. Sow the seeds

II Answer in one sentence. (1 x 10 = 10M)

1. (i) moat (pulley-system) (ii) chain pump (iii) dhokli, and (iv) rahat (Lever system).
2. The manual removal includes physical removal of weeds by uprooting or cutting them close to the ground using khurpi or seed drill. The chemical method includes using weedicides.
3. Dry neem leaves protect the stored food grains from pests such as insects and microorganisms.
4. The planting of leguminous crop in a field has the same effect as adding nitrogenous fertilizers in the field. They can fix atmospheric nitrogen themselves by using nitrogen-fixing bacteria in their root nodules.
5. It is recommended to wash fruits and raw vegetables before eating them to wash away harmful chemicals such as insecticides and pesticides which were sprayed while growing them.

6. It is used for sowing seeds with the help of tractors.
7. Paddy is cultivated in rainy season as it is Kharif crop.
8. (a) Exposing them in drying as freshly harvested crops have moisture.
(b) Dried neem leaves are added to store grains, so as to prevent damage from pests.
(c) Specific chemical treatments are also available for protecting crops.
9. The main tools used to prepare soil are plough, hoe and cultivator
10. Examples of fertilisers urea, ammonium sulphate, super phosphate, potash, N.P.K.

III Answer in two to three sentences. (2 x 10 = 20M)

1. a. The tool used with the tractor for sowing seeds in a field is seed drill.
b. It protects the seeds from the damage caused by birds.
2. a. Animal husbandry
b. Animals are provided with proper food, shelter and care.
3. a. Seeds should be sown at a proper depth and distance from each other.
b. Seed should be healthy, clean, and free from diseases
4. Hoe is a simple tool which is used for removing weeds and for loosening the soil. It has a long rod of wood or the iron. A strong broad and bent plate of iron is fixed to one of its ends and works like a blade. It is also pulled by animals.
5. The process of growing different crops alternately year by year is called crop rotation
It helps in the replenishment of the soil with nutrients and thus maintains the fertility of the soil.
6. Farmers can increase the fertility of the soil by : (i) adding manure and fertilizers. (ii) crop rotation. (iii) leaving the field uncultivated in between two crops
7. Advantages of manure : (i) It enhances the water holding capacity of the soil. (ii) It makes the soil porous due to which exchange of gases becomes easy. (iii) It increases the number of friendly microbes. (iv) It improves the texture of the soil.
8. Fig 1.1 (b)
9. For sowing paddy, seeds are first grown in a nursery and later seedlings are transplanted in the field. This allows us to select only healthy and better seedlings for cultivation.
10. Weeding is necessary since weeds compete with the crop plants for water, nutrients, space and light. They affect growth of the crop. Some weeds may be poisonous for animals and human beings.

III Answer in three to four sentences. (3 x 5 = 15M)

1. Rabi crops are wheat, pea, mustard while Kharif crops are maize, paddy (rice) and soyabean. These are grown in different seasons and therefore can very well be rotated alternatively. Pea and soyabean are leguminous plants which harbour bacteria i.e., Rhizobium in their nodules, thus help in fixing nitrogen. These nitrogen fixing plants can replenish nitrogen in the field and hence Balu can easily practice crop rotation.
2. Despite favourable climate conditions, farmer's crop failed to give good yield, the possibilities may be :
 - (i) he did not use good quality and healthy seeds.
 - (ii) his field was not well irrigated.
 - (iii) Manure / fertilizers were not timely and properly applied.
 - (iv) Weeds were not removed.
 - (v) Seeds were not sown at appropriate distance.
3. The soil should be loosened before sowing. The loosened soil allows the roots to penetrate deep into soil. It helps the roots to breathe. The loosened soil helps in the growth of earthworms and microbes present in the soil. These organisms are called farmers friends since they further turn and loosen the soil. They also add humus in soil.
4. Farmers store the harvested grains in jute bags or metallic bins. However, on a large scale this is done in silos and granaries, to protect them from pests like rats and insects. Drive 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.
5. Differentiate between fertilizer and manure.

Sr.No.	Fertilizer	Manure
1	A fertilizer is an inorganic salt.	Manure is a natural substance obtained by the decomposition of cattle dung, human waste and plant residues.
2	A fertilizer is prepared in factories.	Manure can be prepared in the fields.
3	A fertilizer does not provide any humus to the soil.	Manure provides a lot of humus to the soil.
4	Fertilizers are very rich in plant nutrients such as nitrogen, phosphorus and potassium.	Manure is relatively less rich in plant nutrients.

III Answer the following. (5 x 5 = 25M)

1. There are following practices used in agriculture..

i. Preparation of soil : The first step of agriculture is preparation of soil. The soil is to turn and loosen it. It helps in growth and development of plants. The process of loosening and turning of the soil is called tilling or ploughing. Sometimes manure is added to soil before tilling.

ii. Sowing : After preparation of soil the second step, called sowing, takes place. Before sowing, good quality seeds are selected. The seeds should be clean and healthy.

iii. Adding Manure and Fertilisers: Soil supplies minerals and nutrients to the crops. These nutrients are essential for the growth of plants. Sometimes continuous cultivation of crops makes the soil nutrient deficient. Some substances are then, added to replenish the soil. These substances are called manure and fertilisers. Manure and fertilisers are essential to increase the crop production.

iv. Irrigation : The process of watering the crop plants is called irrigation. Plants take all the nutrients and minerals in dissolved form. So, water is most essential for germination of seeds, growth and development of plants.

v. Harvesting : After maturation of crop, it is cut off. This process is called harvesting. It is done by a sickle or by a machine called harvester.

vi. Storage: Storage of grains is one of the most important tasks. To keep the harvested grains for longer time it should be protected from moisture, pest, insects and other microorganisms.

2. Take some green gram (moong) or gram seeds and germinate them. Select three equal sized seedlings. Take three beakers and mark them A , B and C. In beaker A, add little amount of soil mixed with some manure. In beaker B, put some amount of soil mixed with some urea. Take some amount of soil in beaker C, without adding manure or urea. Pour the same amount of water in each beaker and plant the seedlings in each. Keep them in a safe place and water them daily. After a few days, we observe that all the plants in all beakers did not grow at the same rate. Beakers A and B shows the better growth but in beaker B, the growth was fastest. This activity shows that manure and fertilisers are essential for better growth of plants.

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

The main modern methods of irrigation are as follows;

i. 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 rotating nozzles. It gets sprinkled on the crop as if it is raining. It is very useful for lawns, coffee plantation and several other crops.

ii. Drip System : In this system the water falls drop by drop directly near the roots. So, it is called drip system. It is the best technique for watering fruit plants, gardens and trees.

Water is not wasted at all. It is a boon in regions where availability of water is poor.

4.The ability of soil to supply all the essential plant nutrients to a crop in adequate quantity is called soil fertility. Repeated growing of crops in the same soil removes various nutrient elements from the soil due to which the soil loses its fertility.

The soil fertility can be replenished by the following methods

(i) By keeping the field fallow for one or two seasons.

(ii) By putting manure and fertilizers in the soil.

(iii) By practising crop rotation.

(iv) By practising multiple cropping (Mixed cropping).

5.a. Fig. 1.1(a)

b. The plough is used for tilling the soil.

c. The plough is drawn by a pair of bulls or other animals like horses, camels etc.