

UNIT : 5 REPRODUCTION AND MODIFICATION IN PLANTS

CLASS: VII

SUBJECT: SCIENCE

I. Choose the appropriate answer.

1. Vegetative propagation by leaves takes place in
a. **Bryophyllum** b. fungi c. virus d. bacteria
2. Asexual reproduction in yeast is
a. spore formation b. fragmentation c. pollination **d. budding**
3. Reproductive part of a plant is
a. root b. stem c. leaf **d. flower**
4. Pollinators are
a. wind b. water c. insect **d. All the above**
5. Climbing roots are seen in
a. betel b. black pepper **c. Both of them** d. None of them

II. Fill in the blanks.

1. The male reproductive part of a flower is **Androecium**
2. **Ovary** is the basal swollen part of the gynoecium.
3. After fertilization the ovule becomes **Seed.**
4. Breathing roots are seen in **Mangrove** plants.
5. Onion and garlic are example for **Bulb.**

III. State true or false. If false, correct the statement.

1. A complete flower has four whorls. **True**
2. The transfer of pollen to the stigma is known as pollination. **True**
3. Conical shaped root is carrot. **True**

4. Ginger is an underground root.

False

5. Leaves of aloe vera are fleshy and store water.

True

IV. Match the following

1. Petal	Opuntia	3
2. Fern	Chrysanthemum	5
3. Phylloclade	Attracts insect	1
4. Hooks	Spore	2
5. Sucker	Bignonia	4

V. Answer very briefly.

1. Write two types of reproduction in plants.

In plants there are two types of reproduction – asexual reproduction and sexual reproduction.

2. What are the two important parts of a flower?

The male reproductive organ of a flower is androecium and the female reproductive organ of a flower is gynoecium.

3. Define – Pollination.

Transfer of pollen grains from the anther to stigma is called pollination.

4. What are the agents of pollination?

Agents like wind, water, insects and animals are helpful for pollination

5. Give example for

- a. Corm - Colocasia b. Tuber - Potato

6. What is tendril?

Tendrils : In climbers, the leaf of plant are modified into elongated structure to help the plants climb efficiently.

- ***Gloriosa superba*** – Leaf tips are modified into tendrils.
- ***Pisum sativum (Pea)*** –Terminal leaflets are modified into tendrils.

7. What are thorns?

- ❖ Thorns are pointed and sharp structures formed in a plant.
- ❖ Leaves other parts may be modified into thorns.
- ❖ It helps the plant to safeguard itself from animals. Thorns may also help in climbing.

VI. Answer briefly.

1. Differentiate bisexual flower from unisexual flower?

Complete Flower (Bisexual)

If all the four whorls - calyx, corolla, stamens and pistil are present, then it is called as complete flower. Complete flowers are bisexual flowers.

Incomplete Flower (Unisexual)

If any of these four whorls is missing, then it is called as incomplete flower. Incomplete flowers are unisexual flowers.

There are two types of unisexual flowers, **male flower** and **female flower**. The flower with androecium and without gynoecium is called as **male flower** and the one with gynoecium and without androecium is known as **female flowers**.

2. What is cross pollination?

- Pollen grains are transferred from the anther of one flower to the stigma of another flower of the same kind or different plant.
- Plants need to produce pollen grains in larger quantities to increase the chance of pollination.
- Cross pollination does introduce variations in the characteristics of new plants.
- Pollen grains stick to their legs, wings or abdomen when they move from one flower to another. This is called as **cross pollination**

3. Write notes on phyllode.

Phyllode

In *Acacia auriculiformis*, petioles expand to form leaf like structure. They carry out the function of leaf (Photosynthesis).

VII. Answer in detail.

1. Write a brief account on pollination.

Transfer of pollen grains from the anther to stigma is called pollination. There are two types of pollination - self pollination and cross pollination.

A) Self Pollination

- ❖ Pollen grains are transferred from the anther to the stigma of the same flower or to another flower of the same plant.
- ❖ Plants do not need to produce pollen grains in a large quantity for self pollination
- ❖ It does not produce changes in the characteristics of new plants.

B) Cross pollination

- ❖ Pollen grains are transferred from the anther of one flower to the stigma of another flower of the same kind or different plant.
- ❖ Plants need to produce pollen grains in larger quantities to increase the chance of pollination.
- ❖ Cross pollination does introduce variations in the characteristics of new plants.

2. Explain the underground stem

There are some stems that grow under the ground to store food. These underground stems swell and become thick. There are four types of underground stems.

They are:

- Rhizome
- Corm
- Tuber
- Bulb

1. Rhizom

It is an underground thick stem with nodes and internodes with scale leaves at the node. It grows horizontally and has an irregular shape. Rhizome have buds. It gives rise to new stem and leaves.

E.g. Ginger and Turmeric

2. Corm

This underground stem is round in shape and flat at the top and bottom. It is a condensed form of rhizome and bears one or more buds in the axils of scale leaves. Daughter plants arise from their buds.

E.g. Colocasia

3. Tuber

It is an enlarged, spherical underground stem that stores food. It has many dormant buds on its surface known as 'eyes'. If we plant a part of tuber with the bud, it grows into a new plant.

E.g. Potato

4. Bulb

It is a condensed stem which is disc like and stores food in the fleshy leaves. The bulb has two types of leaves.

- Fleshy Leaves
- Scaly Leaves

The upper part of the stem has a terminal bud and it is covered by many scaly leaves. The inner fleshy leaves store food as seen in garlic and onion.

VIII. Higher Order Questions.

1. Ginger is considered to be a stem, not a root. Why?

Rhizom

It is an underground thick stem with nodes and internodes with scale leaves at the node. It grows horizontally and has an irregular shape. Rhizome have buds. It gives rise to new stem and leaves.

E.g. Ginger and Turmeric

2. What will happen if pollen grain of rose gets deposited on stigma of lily flower? Will pollen germination takes place? Why?

No pollen of rose will get wasted and will not germinate on the stigma of lily flower. This is because pollen of a flower is compatible (match) only with stigma of a flower of the same species.

IX. Consider the following statements and choose the correct one.

1. **Assertion:** Pollination and fertilization in flowers produce fruits and seeds.

Reason: After fertilization the ovary becomes fruit and ovule becomes seed.

Assertion is correct reasoning is correct.

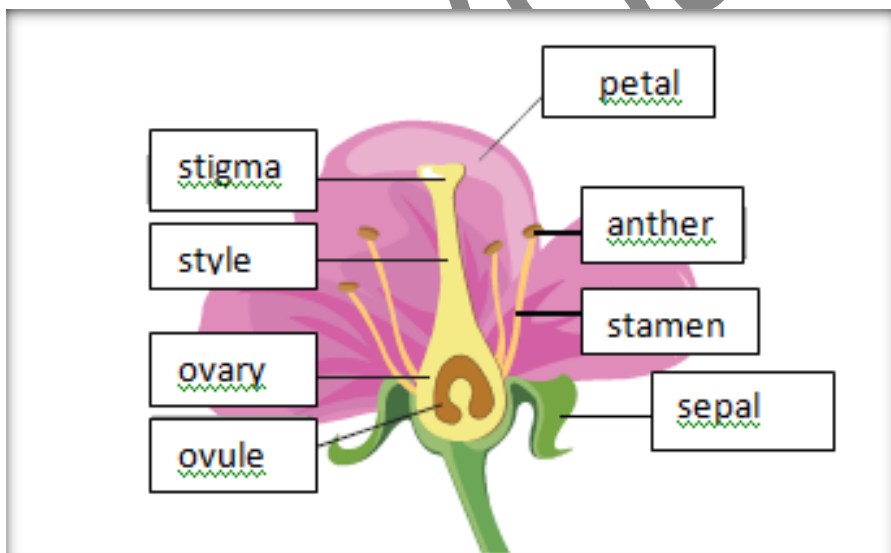
2. **Assertion:** An example for conical root is carrot.

Reason: It is an adventitious root modification

Assertion is correct reasoning is correct.

X. Picture based question.

i. Label the picture given below.



ii. Identify the four plants shown in the following table. Name the different modifications in each of them.

Name	Modification
Garlic	Underground stem modification
Turnip	Top root modified for storage (top shaped)
Rose plant	stem used for vegetative propagation / Asexual reproduction by cutting.
Maize	Stilt roots (Adventitious roots produced from the node for mechanical support).