

Board –CBSE

Class –7<sup>th</sup>

Topic – Reproduction in Plants

1. Describe the different methods of asexual reproduction. Give examples.

**Sol.** There are different methods by which plants reproduce asexually. They are vegetative propagation, budding, fragmentation, and spore formation. The vegetative parts of a plant are the roots, stems, and leaves. When new plants are produced from these parts, the process is called vegetative propagation.

1. Budding- A bulb-like projection grows on the parent organism. It grows and may eventually break away from the parent. E.g. yeast, hydra, corals, sponges.

2. Fragmentation- The organism breaks up into two or more fragments after maturation. These fragments grow into new individuals. E.g. spirogyra, hydra

3. Spore formation- A spore is a tiny, spherical and unicellular body protected by a thick wall. Under favorable conditions, a spore germinates and develops into a new individual. E.g. mosses, ferns, moulds

2. Describe the various ways by which seeds are dispersed.

**Sol.** Seeds and fruits are dispersed by agents like wind, water, animals, and humans.

The pods present in these seeds dry up in the sun. This causes the pod to split with great force, thereby dispersing the seeds away from the parent plant.

Some seeds are dispersed by a special method called an explosion. Examples are mustard, lady finger, peas, bean, pod, and castor.

3. What is Fertilization?

**Sol.** The zygote is formed by the fusion of the male and female gametes. This process is called fertilization. After fertilization, the ovary changes into a fruit. It may be either fleshy or dry.

4. Write 4 advantages of vegetative propagation.

**Sol.** The advantages are-

1. New plants can be produced quickly.
2. The plants so produced are exact copies of parent plants
3. Seedless plants can be easily propagated
4. They are pure line plants.

**5.** What does bisexual flowers contain and give some example.

**Sol.** Bisexual flowers contain both - the stamens and the pistil. For example, mustard and rose.

**6.** Why are flowers known as reproductive parts of a plant?

**Sol.** Flowers are known as reproductive parts of a plant as flowers contain both male and female reproductive structures i.e. stamen and pistil respectively.

**7.** What is the significance of the dispersal of seeds and fruits?

**Sol.** A plant produces a large number of seeds. They are required to be dispersed properly to get enough space, water, and minerals, and sunlight to grow healthy.

**8.** Why do spores can survive for a long time?

**Sol.** Spores are protected within a thick wall that makes them withstand unfavorable and extreme climate.

**9.** Which take less time to grow and bear flowers and fruits, plants produced by vegetative propagation or from seeds?

**Sol.** A plant produced by vegetative propagation takes less time to develop and bears fruits and flowers. Plants grown from seeds require more attention and take good time to germinate and grow.

**10.** Write a short note on pollination.

**Sol.** It is the transfer of pollen grains from an anther to the stigma. Insects, birds, and other animals help in the cross-pollination of flowers. Insects are attracted by the color and scent of petals. Winds can also blow pollen grains. Such flowers such plants have flowers with small petals or with no petals at all.

11. Describe the process of seed formation.

**Sol.** After fertilization, petals, sepals, and stamen wither away and fall off. Style and stigma also, fall off. The ovule walls develop hard layers and seeds develop. Each seed contains an embryo enclosed in a protective seed coat.

12. Explain the process of fruit formation.

**Sol.** The ovary begins to swell. In the time it becomes a fruit. So, a fruit is actually a developed ovary.

Some fruits, like mangoes and apples, are sweet and juicy. Sometimes, they become hard and woody forming the shells of nuts.

13. What are the characteristics of seeds dispersed by water?

**Sol.** Seeds develop floating ability in the form of the spongy or fibrous outer coat. E.g. coconut seeds have a thick coat of fiber that enables them to float in water. Lotus fruit has a spongy part that enables it to float.

14. Define reproduction.

**Sol.** Reproduction is the life process of producing new individuals from their parents of their own kinds.

15. What do you understand by the term 'leaf venation'? What are the two types of leaf venation?

**Sol.** The arrangement of veins in a leaf is called the leaf venation.

The two types of leaf venation are, Reticulate Venation: In this, the veins form a network-like structure Parallel venation: In this, the veins run parallel to each other

**16.** Explain different parts of the flower?

**Sol.** Following are the parts of flowers:

- (a) Sepal: Green leafy part of the flower that protects flower in bud condition.
- (b) Petal: Colored leafy part of the flower that attracts insects for pollination
- (c) Stamen: The male parts of the flower that contain pollen grain
- (d) pistil: The female parts of the flower that contain ovary at bottom

**17.** Explain three artificial methods of Vegetative Propagation

**Sol.** Cutting: Here the cuttings of the "parent" plant are removed and placed in a suitable environment so that they can grow into a whole new plant.

For example, rose to cut.

Layering: The stem is bent down and the target region buried in the soil. The buried part of the stem develops roots and is detached from the plant and develops into a new plant. Grafting: In grafting a shoot or bud of a selected, desired plant (scion) is grafted onto the stock of another type of plant. Plant tissue culture: Tissue culture is the artificial method of reproduction where a small cutting of plants such as root or stem is taken and is grown in laboratory condition by providing it with suitable nutrients in a media and growing them in a Petri plate or test tubes. The plant is provided with the most hygienic condition.

**18.** How does spirogyra reproduce?

**Sol.** Spirogyra reproduce through Fragmentation process.

**19.** How are Bryophyllum plants propagated?

**Sol.** The bryophyllum plants propagate by leaves.

**20.** What is 'scion'?

**Sol.** The portion of the plant which is grafted on other plants is called the scion.

