

Class: 7

Subject: Biology

Topic: Reproduction in plants

No. of Questions: 20

Q1. 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

Q2. 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 explosion. Examples are mustard, lady finger, peas, bean, pod and castor.

Q3. 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.

Q4. 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.

Q5. Differentiate between:-

1. Unisexual flowers and bisexual flowers-

Sol. Bisexual flowers contain both – the stamens and the pistil. For example, mustard and rose. Unisexual flowers have either the stamens or the pistil. For example, cucumber, maize and watermelon.

2. Sexual and asexual reproduction

Sol. In sexual reproduction, the male and the female gametes fuse to form seeds that eventually develop into new plants.

The seeds are formed inside the fruit. On the other hand, in asexual reproduction, a new plant is grown from any part of a plant other than the seeds.

3. Cross pollination and self-pollination

Sol. The transfer of pollen grains from the anther of one flower, to the stigma of another flower on another plant of the same type, is known as cross-pollination.

The transfer of pollen grains from the anther to the stigma of the same flower or to the stigma of another flower on the same plant, it is termed self-pollination.

Q6. 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.

Q7. What is the significance of 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.

Q8. Why do spores can survive for a long time?

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

Q9. 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 bear fruits and flowers. Plants grown from seeds require more attention and take good time to germinate and grow.

Q10. 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 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.

Q11. 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 seed develop. Each seed contains embryo enclosed in a protective seed coat.

Q12. Explain the process of fruit formation.

Sol. The ovary begins to swell. In 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.

Q13. What are characteristics of seeds dispersed by water?

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

Q14. Define reproduction.

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

Q15. 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.
Reticulate Venation: In this the veins form a network like structure
Parallel venation: In this the veins run parallel to each other

Q16. Explain different parts of flower?

Sol. Following are the parts of flowers:
a) Sepal: Green leafy part of flower that protect flower in bud condition.
b) Petal: Colored leafy part of flower that attract insect for pollination
c) Stamen: The male parts of flower that contain pollen grain
d) pistil: The female parts of flower that contain ovary at bottom

Q17. 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 cutting.

Layering: The stem is bent down and the target region buried in the soil. The buried part of stem develops roots and is detached from the plant and develops into 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 plant 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.

Q18. How does spirogyra reproduce?

Sol. Fragmentation

Q19. How is Bryophyllum plants propagated?

Sol. By leaves

Q20. What is 'scion'?

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