Chapter 12. Reproduction in Plants

Very Short Q&A:

Q1: What is unisexual flower?

Ans: A flower may have either male or female reproductive parts. Such a flower is called unisexual flowers.

Q2: The fusion of male and female gametes is termed as _____.

Ans: Fertilisation

Q3: Seed dispersal take place by

a. Wind
b. Water
c. Animals
d. All of the above.

Ans: All of the above.

Q4: Name the different modes of asexual reproduction.

Ans: There are different methods by which plants reproduce asexually. They are vegetative propagation, budding, fragmentation and spore formation.

Q5: Modes of reproduction evolve only one parent is called unisexual reproduction.True/ False

Ans: True

Q6: Name vegetative parts of plants.

Ans: Root, stem and leaves.

Q7: Name the reproductive organ of a flowering plant.

Ans: Flower

Q8: State the two types of reproduction inplants.

Ans: Asexual and sexual.

Q9: What happens in sexual reproduction?

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

Q10: The seeds are formed inside the_____.

Ans: Fruits

Q11: In asexual reproduction, a new plant is grown from any part of a plant involving the seeds.True/ False

Ans: False

Q12: What is a node?

Ans: A node is a part of the stem from where a leaf grows.

Q13: _____ Plant has buds on the edges of its leaves.

Ans: Bryophyllum

Q14: What kind of roots is called tubers?

Ans: Roots that store food are known as tubers.

Q15: What kind of roots are the food storage tanks for the plants?

Ans: Tubers

Q16: Yeast reproduces by a process called_____.

Ans: Budding

Q17: Algae, the simplest green plants, reproduce by an asexual method known as _____.

Ans: Fragmentation

Q18: What is a mould?

Ans: Mould is a type of fungus that grows on moist organic surfaces like leather shoes and moist walls.

Q19: How does a mould reproduce?

Ans: By the means of spores.

Q20: The anther of flower contains pollen sacs that produce_____.

Ans: Pollen grains

Q21: Name the male reproductive unit of the flower.

Ans: Pollen

Q22: Bisexual flowers contain both the stamens and the pistil. True/ False

Ans: True

Q23: Give examples of bisexual flower.

Ans: Mustard and rose.

Q24: Give examples of unisexual flower.

Ans: Cucumber, maize and watermelon.

Q25: How Pollen grains transfer from one flower to another?

Ans: By pollinating agents like wind, water and animals.

Q26: What is fertilization?

Ans: Fusion of the male and female gametes is called fertilisation.

Q27: The reproductive part of a plant is the

a. Flower
b. Stem
c. Leaves
d. Root

Ans: Flower

Q28: Name the cell formed as product of fertilization.

Ans: Zygote

Q29: After fertilisation, the ovary changes into a

a. Flower
b. Seed
c. Fruit
d. None of these.

Ans: Fruit

Q30: A spore producing plant is

a. Rose
b. Bread mould
c. Potato
d. Ginger

Ans: Bread mould

Q31: Bryophyllum can reproduce by its

a. Stem
b. Leaves
c. Root
d. Flower

Ans: Leaves

Q32: What is the other name for ovary?

Ans: Carpel

Q33: The stamen is male reproductive part or female reproductive part?

Ans: Male reproductive part.

Q34: Female gamete is formed in a _____.

Ans: Ovule

Q35: Give examples of some seeds that are dispersed by animals.

Ans: Xanthium and Urena

Q36: Give examples of a seeds that is dispersed by water.

Ans: Coconut

Q37: _____ is the female reproductive part of flower.

Ans: Pistil

Q38: Give examples of plants that reproduce by means of spores.

Ans: Moss and ferns.

Short Q&A:

Q1: Why reproduction is essential lifeprocess?

Ans: Reproduction is essential for continuation of the species from generation to generation.

Q2: Explain different modes of unisexual reproduction?

Ans: Modes of reproduction that evolve only one parent is called unisexual reproduction.

(a) Fission: The mode of reproduction in which unicellular organism split into two equal halves and produce new ones is called binary fission. For example amoeba and bacteria

(b) Fragmentation: The mode of reproduction in which body of plant breaks up into smaller fragments and each fragment grows into a new individual is known as Fragmentation e.g. Spirogyra, algae.

(c) Budding: The mode of reproduction in which small buds develop and get separated and matured into new organisms is called Budding. E.g. Yeast, Hydra, Bryophyllum.

(d) Spore formation: The mode of reproduction takes place by means of spores is called spore formation.eg. algae and fungi
The spores are covered by thick walls that protect them until they come into contact with another moist surface and can begin to grow.

Q3: What do you mean by vegetative propagation? Explain with example.

Ans: Vegetative propagation is the ability of plants to reproduce by using vegetative parts like roots, stems and leaves. example: Yeast, Hydra, Bryophyllum reproduce by budding,

algae and fungi reproduce by spores.

Q4: What is sexual reproduction? Explain with example.

Ans: Sexual reproduction is the process in which two components male and female are involved to produce offspring of their own kind. The flower is a reproductive organ of a flowering plant.

Q5: How does sexual reproduction take place in flowering plants?

Ans: The sexual reproduction in flowering plants involves

1. Pollination: Transfer of pollen grains from the anther to the stigma is called pollination. Pollen grains are transferred mainly by wind, water and insects. They are called as pollinating agents.
2. Fertilization: The fusion of a male gamete with egg is known as fertilization. The fertilized egg is known as zygote which develops into embryo.

Q6: Why are there so many varieties of fruits?

Ans: Fruits develop by many ways so there are many varieties of fruits. For example, some fruits develop without the act of fertilization. Such fruits are called arthenocarpic fruits. E.g. seedless grapes, guava, mango etc.

Q7: Explain different parts of a flower?

Ans: Following are the parts of flowers:

1. Sepal: Green leafy part of flower that protect flower in bud condition.
2. Petal: Coloured leafy part of flower that attract insect for pollination
3. Stamen: The male parts of flower that contain pollen grain
4. Pistil: The female parts of flower that contain ovary at bottom

Q8: Explain three artificial methods of Vegetative Propagation.

Ans:

1. 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.
2. 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.
3. Grafting: In grafting a shoot or bud of a selected, desired plant (scion) is grafted onto the stock of another type of plant.

Q9: Explain vegetative propagation.

Ans: It is a type of asexual reproduction in which new plants are produced from roots, stems, leaves and buds. Since reproduction is through the vegetative parts of the plant, it is known as vegetative propagation. The plants like rose or champa can be propagated through Vegetative propagation.

- Vegetative Propagation by Roots- E.g. Dalbergia sissoo
- Vegetative Propagation by Stem- E.g. Banana
- Vegetative Propagation by Leaf- E.g. Bryophyllum.

Artificial methods:

- Cutting- E.g. Sugarcane
- Grafting- E.g. Desi Mango
- Budding- E.g. Rose
- Layering- E.g. Jasmine

Q10: State the advantages of vegetative reproduction?

Ans: Following are the advantages of vegetative reproduction

1. Vegetative production allows plants to produce new plants quickly without any reproductive organs.
2. The plants produced by this method are exact copies of the parent plant.
3. New varieties of plants having required characteristics can be developed by this method.

Q11: How is zygote formed in plants?

Ans: When male gamete present in pollen grain moves into ovules and fuse with female egg cell inside ovules and zygote is formed .This process is called fertilization.

Q12: Explain different types of pollination found in flowering plants.

Ans: Pollination is of two types. They are

- Self-pollination: The transfer of pollen grains from the anther of a flower to the stigma of the same flower or another flower of the same plant is known as self-pollination or autogamy.
- Cross pollination: The transfer of pollen grains of a flower to the stigma of another flower of a different plant of the same species is called cross pollination or allogamy

Q13: How does Differentiate between self-pollination and cross-pollination.

Ans: After pollination pollen grain germinate on the stigma and moves through style to reach into ovules and fuse with female gamete. Thus fertilization occurs. In side ovary, the ovule develops into seed. As seed form, the ovary increases in size and became fruit.

Q14: Show self-pollination and cross pollination via a labelled diagram.

Ans: In ponds, or in other stagnant water bodies, the algae which looks like slimy green patches over the water surface use asexual reproduction for its growth. When water and nutrients are available algae grow and multiply rapidly by fragmentation. An alga breaks up into two or more fragments. These fragments or pieces grow into new individuals. This process continues and they cover a large area in a short period of time.

Q15: Describe the various ways by which seeds are dispersed.

Ans: Tiny organisms like yeast which can be seen only under a microscope, grow and multiply every few hours if sufficient nutrients are made available to them. The yeast is a single-celled organism.The small bulb-like projection coming out from the yeast cell is called a bud. The bud gradually grows and gets detached from the parent cell and forms a new yeast cell. The new yeast cell grows, matures and produces more yeast cells. If this process continues, a large number of yeast cells are produced in a short time.

Q16: How does the process of fertilisation take place in flowers?

Ans: The spores are asexual reproductive bodies. Each spore is covered by a hard protective coat to withstand unfavourable conditions such as high temperature and low humidity. So they can survive for a long time. Under favourable conditions, a spore germinates and develops into a new individual. Examples: Plants such as fungi, moss and ferns also reproduce by means of spores.

Q17: Explain flower of a plant.

Ans: It is a type of asexual reproduction in which new plants are produced from roots, stems, leaves and buds. Since reproduction is through the vegetative parts of the plant, it is known as vegetative propagation. The plants like rose or champa can be propagated through Vegetative propagation.

Q18: How does a fern reproduce?

Ans: In sexual reproduction, new plants are obtained from seeds. The flowers are the reproductive parts of a plant. The stamens are the male reproductive part and the pistil is the female reproductive part. A pistil consists of stigma, style and ovary. The ovary

contains one or more ovules. The transfer of pollen from the anther to the stigma of a flower is called pollination. The female gamete or the egg is formed in an ovule. In sexual reproduction a male and a female gamete fuse to form a zygote. The process of fusion of male and female gametes is called fertilisation. The zygote develops into an embryo. After fertilisation, the ovary grows into a fruit and other parts of the flower fall off. The fruit is the ripened ovary. The seeds develop from the ovules. The seed contains an embryo enclosed in a protective seed coat .Seeds and fruits of plants are carried away by wind, water and animals and reproduced again on the grounds.

Q19: How does fertilization occur in flower?Where and how are seeds formed in plants?

Ans: In asexual reproduction plants can give rise to new plants without seeds, whereas in sexualreproduction, new plants are obtained from seeds.

Q20: Explain reproduction in plants by fragmentation.

Ans: Pollination is of two types, self-pollination and cross-pollination. In self-pollination, pollen grains are transferred from the anther to the stigma of the same flower. In cross-pollination, pollen grains are transferred from the anther of one flower to the stigma of another flower of the same kind.

Q22: Explain reproduction in plants by spore formation.

Ans: Seed are dispersed by wind, water and animals. Winged seeds such as those of drumstick and maple, light seeds of grasses and hairy fruit of sunflower, get blown off with the wind to faraway places. Some seeds are dispersed by water. These fruits or seeds usually develop floating ability in the form of spongy or fibrous outer coat as in coconut. Some seeds are dispersed by animals, especially spiny seeds with hooks which get attached to the bodies of animals and are carried to distant places. Examples are Xanthium and Urena. Some seeds are dispersed when the fruits burst with sudden jerks. The seeds are scattered far from the parent plant. This happens in the case of castor and balsam.

Q23: Write short notes on reproduction in plants by vegetative propogation.

Ans: The flowers are the reproductive parts of a plant. The stamens are the male reproductive part and the pistil is the female reproductive part. A pistil consists of stigma, style and ovary. The ovary contains one or more ovules. The transfer of pollen from the anther to the stigma of a flower is called pollination. The female gamete or the egg is formed in an ovule. This process of fusion of male and female gametes in flowers is called fertilisation to form zygote.The zygote develops into an embryo. After fertilisation, the ovary grows into a fruit and other parts of the flower fall off. The fruit is the ripened ovary. The seeds develop from the ovules. The seed contains an embryo enclosed in a protective seed coat. Seeds and fruits of plants are carried away by wind, water and animals and reproduced again on the grounds.

Q24: Write short notes on sexual reproduction in plants.

Ans: Ferns reproduce by releasing spores that germinate into young ones.

Q25: Differentiate between asexual reproduction and sexual reproduction in plants.

Ans: In asexual reproduction plants can give rise to new plants without seeds, whereas in sexualreproduction, new plants are obtained from seeds.

Q26: How does an alga reproduce?

Ans: Algae reproduce by a method known as fragmentation. The breaking down of filaments into fragments that grow into young ones is called fragmentation.

Q27: How does yeast reproduce?

Ans: Yeast reproduces by a process called budding. A small bulb-like projection that comes out from the yeast is known as a bud. This bud grows and detaches itself from the parent cell, and then grows independently as a new plant.

Q28: Explain reproduction in Bryophyllum.

Ans: Bryophyllum propagates vegetatively by the formation of leaf buds on the margins of a leaf. When the buds come in contact with moist soil, each bud is capable of growing into a new plant.

Q29: Differentiate between unisexual flower and bisexual flower?

Ans: Bisexual flowers have both male and female reproductive structures, including stamens, carpels, and an ovary. Examples of plants having bisexual flowers include the lily, rose etc.

Flower that is either functionally male or functionally female that is the flower which contains either only the pistil or only the stamens are called unisexual flower.

Q30: How can we grow a new rose plant from the parent plant?

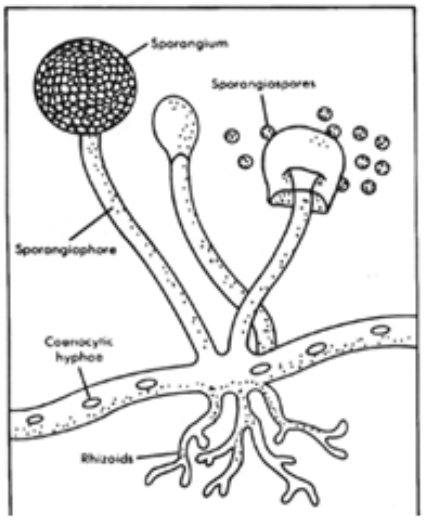
Ans: A new rose plant can be grown by cutting off a part of the stem of an existing plant, with two or more nodes, and planting it in the ground.A node is a part of the stem from where a leaf grows.This stem grows into a new rose plant.

Long Q&A:

Q1: Explain along with a diagram reproduction through spore formation in fungus.

Ans:

Fungus reproduces by means of spores. Spores are covered by a protective hard coat. Spores can survive in extreme conditions like high temperature and low humidity because of the protective hard coat.



Q2: Explain sexual reproduction in plants.

Ans: In sexual reproduction, new plants are obtained from seeds. The flowers are the reproductive parts of a plant. The stamens are the male reproductive part and the pistil is the female reproductive part. A pistil consists of stigma, style and ovary. The ovary contains one or more ovules. The transfer of pollen from the anther to the stigma of a flower is called pollination. The female gamete or the egg is formed in an ovule. In sexual reproduction a male and a female gamete fuse to form a zygote. The process of fusion of male and female gametes (to form a zygote) is called fertilisation. The zygote develops into an embryo. After fertilisation, the ovary grows into a fruit and other parts of the flower fall off. The fruit is the ripened ovary. The seeds develop from the ovules. The seed contains an embryo enclosed in a protective seed coat. Seeds and fruits of plants are carried away by wind, water and animals and reproduced again on the grounds.