20. Reproduction in higher plants

Exercises

1 A. Question

Seed develops from

A. ovary

B. ovule

C. embryo

D. embryo sac.

Answer

After fertilization has taken place, the ovule inside the ovary develops into a seed. The embryo is found inside the seed and the ovary that is covering the ovule forms the fruit. The embryo sac gives rise to the egg cells that undergo fertilization.

1 B. Question

Colour of night blooming flowers is usually

A. violet

B. red

C. yellow

D. whitish.

Answer

The colour of night-blooming flowers is generally dull or whitish in colour because the pollinators like insects cannot see the bright colour of the flower petals in the dark. Hence, these flowers rely on their peculiar aromatic smell instead of bright colours like violet, red or yellow to attract insects in the night for pollination.

1 C. Question

The correct sequence of reproductive stages seen in flowering plants is

A. gametes, zygote, embryo, seedling

B. zygote, gametes, embryo, seedling

C. seedling, embryo, zygote, gametes

D. gametes, embryo, zygote, seedling

Answer

The male and female gametes of the plants first undergo fusion after which a zygote is formed. This zygote divides and grows to form the embryo which resides inside a seed. When the embryo grows, it germinates out of the seed to form the seedling.

1 D. Question

The anther contains

A. ovules

B. female gametes.

C. ovary

D. pollen grains.

Answer

The anther is the fertile part of the male reproductive system of a plant and it consists of pollen grains. Pollen grains contain the male gametes inside them. Ovules, ovary and female gametes are parts of the female reproductive system of a plant.

2 A. Question

Fill in the blanks with suitable words:

Flowers with blue petals, nectar and strong scent are most likely pollinated by _____ .

Answer

Flowers with blue petals, nectar and strong scent are most likely pollinated by **insects**.

Explanation: The colour of the flowers and the smell they give out due to the nectar produced by the flowers attract insects towards them so that pollination can take place.

2 B. Question

Fill in the blanks with suitable words:

Variations in the offspring is the characteristic of _____ reproduction.

Answer

Variations in the offspring are the characteristic of **sexual** reproduction.

Explanation: Sexual reproduction involves the fusion of 2 different gametes, one male, and one female. As two different gametes combine, the characteristics of both the gametes will be seen in the offspring. This results in variation in the offspring as it consists of a combination of two different gametes.

2 C. Question

Fill in the blanks with suitable words:

There is much wastage of pollen grains in _____ pollination.

Answer

There is much wastage of pollen grains in **cross**-pollination.

Explanation: In cross-pollination, the pollen grains are transferred from the anther of a flower to the stigma of another flower. Hence, agents like wind, insects etc are needed for pollination which leads to more wastage of pollen grains.

2 D. Question

Fill in the blanks with suitable words:

Fertilization leads to the formation of _____ .

Answer

Fertilization leads to the formation of **zygote**.

Explanation: During fertilization, the male and female gametes fuse together inside the ovary and give rise to a single cell structure known as the zygote.

3 A. Question

Answer the following :

What is a reproduction?

Answer

i) Reproduction is one of the main characteristics of living beings wherein, new individuals or 'offspring' are produced from already existing individuals or 'parents'.

ii) Reproduction is necessary for life to continue on earth.

iii) It is of two types: Sexual and Asexual.

iv) In sexual reproduction, two individual gametes are involved to produce the offspring. In asexual reproduction, only one individual produces its identical offspring.

3 B. Question

Answer the following :

What is a sexual reproduction?

Answer

i) The process of reproduction wherein a new living organism is produced through the fusion of 2 individual reproductive cells is called sexual reproduction.

ii) These reproductive cells are called gametes. One of this is the haploid male gamete and the other is the haploid female gamete.

iii) In sexual reproduction, the new offspring shows variation and is not completely identical to one parent.

3 C. Question

Answer the following :

What is pollination?

Answer

i) Pollination is a process that helps in the sexual reproduction of plants.

ii) In this process, the pollen grains from the male anthers of the plants are transferred to the female stigma of the plants.

iii) This transfer is necessary for the male and female gamete fusion.

iv) There are two types of pollination: self-pollination and cross-pollination.

v) In self-pollination, the transfer of pollens takes place on the same plant whereas, in cross-pollination, the transfer of pollens takes place between different plants.

3 D. Question

Answer the following :

Are insects friends of farmers? Explain.

Answer

i) Yes, insects are friends of farmers as they help in the process of plant reproduction.

ii) Insects carry out cross-pollination by transferring the pollen grains from the anthers of the flowers on one plant to the stigma of the flowers on another plant.

iii) The colours of the flowers and the aromatic smell gave out by the nectar of the flowers attract the insects to come and feed on the nectar of these flowers.

iv) While the insects feed, the pollen grains get stuck on them and when these insects move from one flower to another, the pollen grains get transferred.

v) This helps in sexual reproduction and more plants are produced which is beneficial to the farmers.

3 E. Question

Answer the following :

Draw the diagram of a typical flower and label the parts.

Answer