



CHAPTER - 12

REPRODUCTION IN PLANTS

SOLUTIONS:

Exercises:

Q1. Fill in the blanks.

- Production of new individual from the vegetative of parent is called
- A flower may have either male or female reproductive parts. Such a flower is called
- The transfer of pollen grains from the anther to the stigma of the same or of another flower of the same kind is known as
- The fusion of male and female gametes is termed as
- Seed dispersal takes place by means of,
..... and
.....

Answers: a- vegetative propagation
b- unisexual flower
c- pollination
d- fertilization
e- wind, water, animals.

Q2. Describe the different methods of asexual reproduction. Give examples.

Answer: There are various methods of asexual reproduction. They are

- Vegetative propagation:** In this type of asexual reproduction, plants are produced from vegetative parts i.e from shoots, stems and leaves. Eg. Reproduction in potato, Bryophyllum etc.
- Budding:** In this type of asexual reproduction a new organism develops from an outgrowth or bud due to cell division at one particular site. Eg. Reproduction in yeast.
- Fragmentation:** It is form of asexual reproduction in which an organism is split into fragments. Each of these fragments develop into matured full grown individuals.
Eg. Reproduction in Spirogyra.

- d. Spore formation: In spore formation, the parent plant produces hundreds of reproductive units called spores. These spores travel in air and land on food or soil. There they germinate and produce new plants. Eg. Reproduction in ferns.

Q3. Explain what do you understand by sexual reproduction.

Answer: The mode of reproduction in which two parents are involved for the production of their offsprings is called sexual reproduction. In sexual reproduction both the parents produced gametes (male and female gamete). The gametes fused to form a zygote. The zygote develops into offsprings which are not identical to the parents. Offsprings inherit the characteristics of both the parents.

Q4. State the main difference between sexual and asexual reproduction.

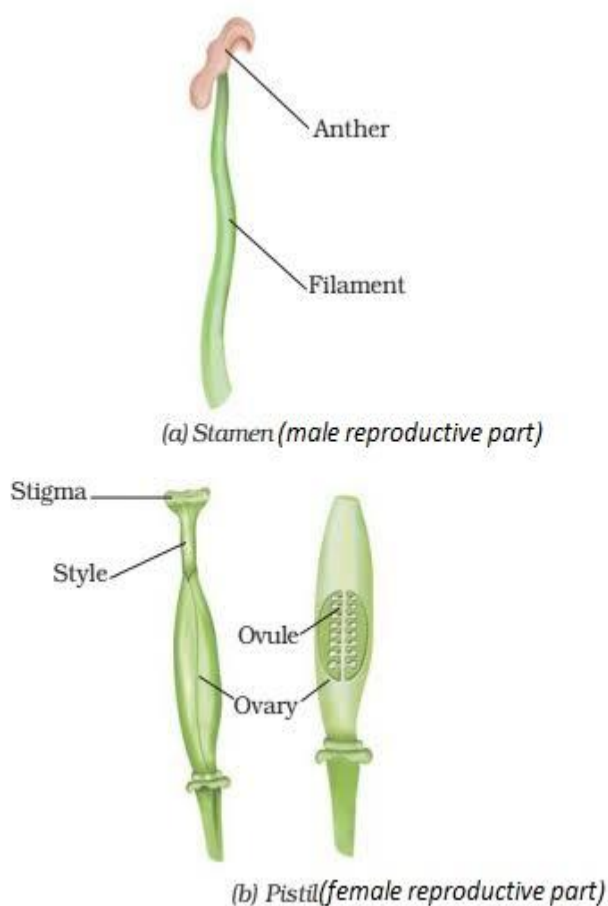
Answer: Difference between asexual and sexual reproduction

Asexual	Sexual
1. Only one parent is involved	1. Both male and female parents are involved
2. Gametes are not formed	2. Gametes are formed
3. No fertilization occurs	3. Fertilization takes place
4. Characteristics of only one parent are inherited	4. Characteristics of both parents are inherited
5. Reproductive organs are not present.	5. Fully developed reproductive organs are present.



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Q5. Sketch the reproductive parts of a flower.



Answer:

Figure; Reproductive parts of a flower.

Q6. Explain the difference between self pollination and cross pollination.

Answer: Difference between self pollination and cross pollination.

Self pollination	Cross pollination
1. It is the transfer of pollen grain from the anther to the stigma of the same flower or different flower of the same plant 2. It occurs in the flower which are genetically same. 3. This process is carried out even when the flowers are closed	1. It is transfer of pollen grains from the anther to the stigma of a flower of different plant. 2. It occurs between flowers which are genetically different. 3. Flowers should be open to perform cross pollination

Q7. How does the process of fertilization takes place in flower?

Answer: The process of fertilization in flower

After pollination, the pollen grain on the stigma start giving rise to a pollen tube that pass through the style and reach the ovule. When the pollen tube reached the ovule, it release the male gamete for fertilization and zygote is formed. After fertilization the ovary develops into fruit and ovule into seeds.

Q8. Describe the various ways by which seeds are dispersed.

Answer: Various ways of seed dispersal are;

- Dispersal by water: Seeds or fruits which developed floating ability in the form of spongy or fibrous outer coat are carried by water to far away places. Eg. Coconut.
- Dispersal by wind; The light seeds or hairy seeds and hairy fruits get blown off with the wind to far away places.
Eg. Sunflower
- Dispersal by animal: Spiny seeds with hooks which get attached to the bodies of animal and carried to distant places.
Eg. Xanthium , Urena
- Dispersal by bursting: Some seeds are dispersed when the fruits burst with sudden jerks and the seeds are scattered far from the parent plant.
Eg. Balsam , Castor.

Q9. Match items in column I with those in column II

Column I

- Bud
- Eyes
- Fragmentation
- Wings
- Spores

Column II

- Maple
- Spirogyra
- Yeast
- Bread mould
- Potato
- Rose

Answer: a-iii, b-v, c-ii, d-i, e-iv

Q10. Tick (✓) the correct answer;

- a. The reproductive part of a plant is the
i. Leaf ii. Stem iii. Root iv. Flower.
- b. The process of fusion of male and female gametes is called
i. fertilization ii. pollination
iii. reproduction iv. Seed formation
- c. Mature ovary forms the
i. seed ii. stamen
iii. pistil iv. Fruit
- d. A spore producing organism is
i. rose ii. bread mould
iii. potato iv. ginger
- e. Bryophyllum can reproduce by its
i. stem ii. leaves
iii. roots iv. flower

Answer: a-iv, b-I, c-iv, d-ii, e-ii.



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EXTRA QUESTIONS AND ANSWER

Q1. What is reproduction?

Answer: The production of new individuals from their parents is called reproduction.

Q2. What are the types of reproduction ?

Answer: The types of reproduction are
i. Asexual reproduction
ii. Sexual reproduction

Q3. What is vegetative propagation ?

Answer: It is the type of asexual reproduction in which new plants are produced from vegetative parts like leaves , stems, and root.

Q4. Write some advantages of vegetative propagation.

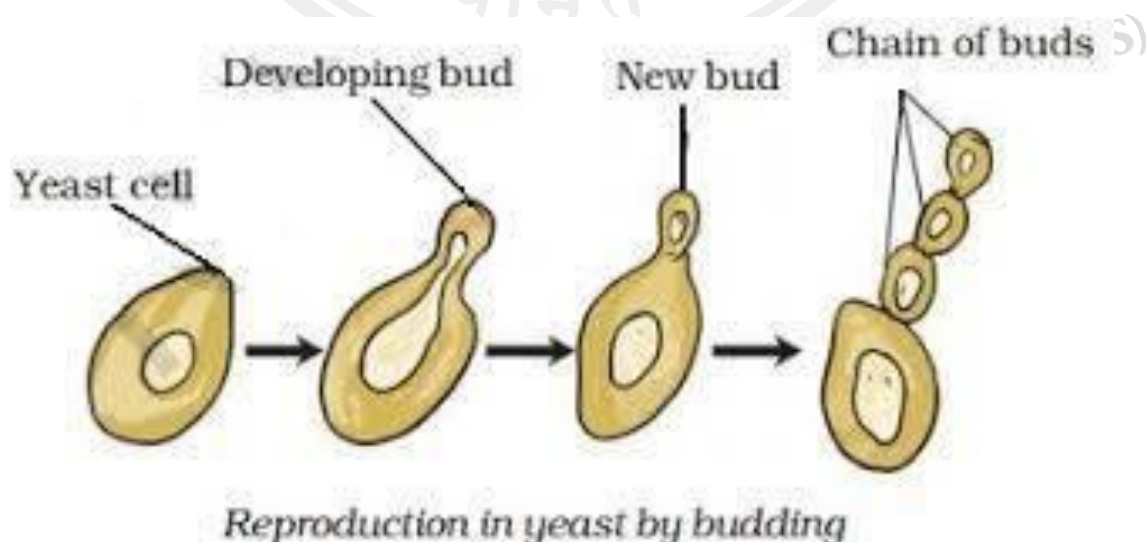
Answer: Advantages of vegetative propagation
I. It is an easier and rapid method of reproduction.
II. Genetically identical plants can be produced
III. The plants that cannot produce viable seeds such as banana , seedless grapes etc can be easily grown by vegetative propagation.

Q5. What are the eye in a potato?

Answer: The scars in potato in which buds are produced are called eyes.

Q6. Draw a diagram showing reproduction in yeast by budding.

Answer:



Q7. Differentiate between unisexual flower and bisexual flower.

Answer: Flowers which contain either only pistil or only stamen is called unisexual flower.

Eg. Flowers of corn, papaya etc. whereas flowers which contain both stamen and pistil are called bisexual flower. Eg. Flower of rose, china rose etc.

Q8. Write some pollinating agents.

Answer: Some pollinating agents are wind, water, insects, birds etc.

Q9. Define pollination.

Answer: Pollination is defined as the process of transfer of pollen grains from anther to the stigma of a flower.

Q10. What are the types of pollination?

Answer: The types of pollination are as follows

- I. Self pollination; If the pollen lands on the stigma of the same flower or another flower of the same plant, it is called self pollination.
- II. Cross pollination; If the pollen of a flower lands on the flower of a different plant of the same kind, it is called cross pollination.

Q11. What is fertilization?

Answer: The process of fusion of male and female gametes to form a zygote is called fertilization.

Q12. What is a zygote?

Answer: A zygote is a cell formed by union of male and female gametes.

Q13. Why do same kind of plants grow at different places?

Answer: Due to the dispersal of seeds by wind, water, animals etc plants of same kind grow at different places.

Q14. What are the importance of seed dispersal?

Answer: Dispersal of seeds is very important for the survival of plant species. If all the seeds of a plant fall at the same place and grow there, then there would be severe competition for sunlight, water, minerals, and space. Seed dispersal allows plants to spread out to a widespread area and avoid competing with one another for the same resources.

