CLASS NOTES

Class: VII	**Topic:** **Chapter 12: Reproduction in plants**
Subject: SCIENCE	**Book Exercises and Extra Question Answers**

TO BE WRITTEN IN NOTES COPY

Q.2. Describe the different methods of asexual reproduction. Give examples.

Ans. Different methods of asexual reproduction are:-

(a) **Fragmentation:** In this process, body of the organism breaks up into two parts. Then each part grows into a new filament thus forming two organisms from a single one.

Example: Spirogyra.

(b) **Spore Formation**: The spores are tiny spherical unicellular structures protected by thick wall. The spores are stored in a hard outer covering and this is called sporangium. Under favourable conditions the hard cover breaks and spores spread for germination.

Example: Moss and Fern.

(c) **Budding**: 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. In yeast, new organisms are produced by the bud formation from the parent organism. After growing to full size, the bud gets detached and forms a new independent individual.

Example: Yeast

(d) **Vegetative propagation**: When vegetative parts of a plant like stems, leaves and root etc., give rise to new ones, it is called vegetative propagation.

Example: Potato, Ginger and Rose.

Q3. Explain what you understand by sexual reproduction.

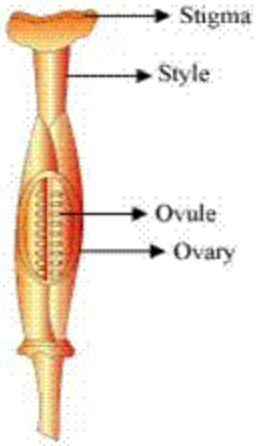
Ans. Sexual reproduction means involvement of two parents in the process of reproduction. It is found mainly in higher plants where male gamete and female gamete fuse to form a zygote. These zygotes develop into individuals which are not identical. Offsprings inherit the characteristics of both the parents.

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

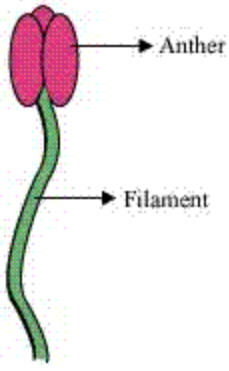
Ans.

Asexual reproduction	*Sexual reproduction*
(*a*) Only one parent plant is involved.	(*a*) Both male and female parents are involved.
(*b*) Occurs in unisexual plants.	(*b*) Occurs in bisexual plants.
(*c*) Occurs in lower plants.	(*c*) Occurs in higher plants.
(*d*) Reproductive organs are not present.	(*d*) Fully developed reproductive parts are present.
(*e*) In most of the methods the original parent disappears.	(*e*) Original parents remain alive after process of reproduction.
(*f*) Process like gamete formation or fertilization is not seen.	(*f*) Fertilization of gametes give rises to zygote.
(*g*) Characteristics of only one parent is inherited.	(*g*) Characteristics of both parents are inherited.
(*h*) No need of seeds.	(*h*) Seeds are used to get new plants from a flower.

Q5.Sketch the reproductive parts of a flower.



Female reproductive system of plants



Male reproductive system of plants

The pistil is the female part of the flower which includes stigma, style and ovary. Inside the ovary, ovules are present. Stamen is the male part of the flower which contains anther and filament. The anther contains pollen.

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

Ans.

Self-Pollination	*Cross-Pollination*
(*a*) Pollen grains are transferred to the stigma of the same flower.	Pollen grains are carried to stigma of another flower.
(*b*) Occurs in bisexual plants having anther and stigma maturing at same time.	Occurs in bisexual flowers having anther and stigma maturing at different times.
(*c*) It takes place in plants like wheat, peas etc.	It takes place in plants like lady-finger, tomato, brinjal etc.

Q7.How does the process of fertilization take place in flowers?

Ans.

- When the pollen grain reaches the stigma of a same species flower, it starts growing out into the pollen tube of the stigma.
- This tube continues to grow inside the style till it reaches the ovule.
- Male cells are released into the ovule for the fertilization with the female egg cell and thus the zygote is formed.
- This process of fusion of male and female gamete is called fertilization.
- After this process of fertilization, the ovary develops into fruit and ovule into seeds.

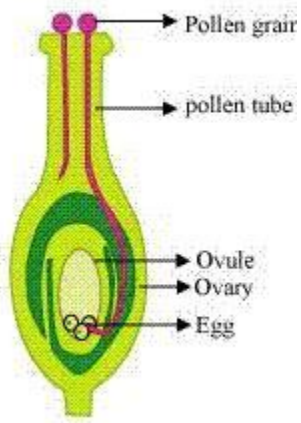


Fig: Longitudinal section of flower showing fusion of male and female gametes

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

Ans:

Seed dispersal occurs by the following agencies:

(a) Dispersal by animals - There are many ways by which birds and animals can disperse seeds. For example, birds and animals can eat the fruits and excrete the seeds away from the parent plant. Some seeds have spines or other structures that get attached to the animal's body and are carried to new sites. Some fruits have hooks on them which cling to fur or clothes. Example - Xanthium.

(b) Dispersal by wind - Seeds that get dispersed by wind are usually smaller in size or they have wings or hair-like structures. For example, winged seeds of drumsticks, hairy fruit of sunflower, etc. are dispersed by wind.

(c) Dispersal by water - Many aquatic plants or plants that live near water has seeds that can float and are carried away by water. For example, coconuts can float and are dispersed by water.

(d) Dispersal by explosion - Sometimes the seeds are dispersed by the bursting of fruits with sudden jerks. The seeds get scattered or distributed far from the parent plant. Examples: castor and balsam.

EXTRA QUESTION ANSWERS

Q1. Mention the benefits of seed dispersal.

Answer:

Benefits of Seed Dispersals

- Seed dispersal avoids overcrowding of young plants around their parent plants.
- It helps in preventing competition between the plants and its own seedlings for sunlight, water and minerals.
- One of the benefits of seed dispersal is that it enables the plant to grow into new habitats for wider distribution and provides them with better chance of survival.

Q2. Give one difference between unisexual and bisexual flower with examples.

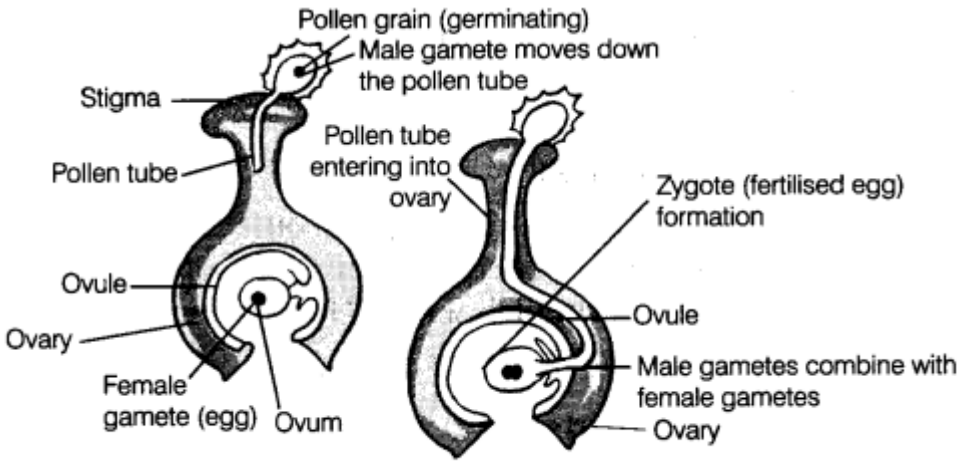
Answer:

- **Unisexual flowers** are those which contain either male or female reproductive part. e.g. papaya, cucumber
- **Bisexual flower** has both reproductive parts (i.e. male and female) on the same flower.
  e.g. rose, tomato.

Q3. What is meant by fertilization? Draw suitable diagram of this process.

Answer:

The process in which the male gamete fuses with female gamete to form a new cell (called zygote) is called fertilization.



The process of zygote formation: fertilisation

Q4. Insects are called agents of pollination. How do they aid in process of pollination?

Answer:

Flowers have nectars that attract insects. Insects suck these nectars as their food. When insects like bee, butterfly, etc., sit on the flower for sucking nectar, the sticky pollen grains get attached to their legs and wings. When these insects again sit on another flower, these pollen grains are transferred to the stigma of that flower from the body of the insects. In this way, insects help in pollination.

Q5. How do the plants like sugarcane, potato and rose reproduce when they cannot produce seeds?

Answer:

Sugarcane and rose are propagated by stem cutting that is a method of vegetative propagation, in which stem is capable of growing into a mature independent plants that are identical to their parents.

Potato is an underground modified stem having bud called eyes, which sprout and develop into a new identical plant.

Thus, the plants which cannot produce seeds can be reproduced by their vegetative parts such as stem, roots, buds and leaves.