Class Notes

Class: VII	Topic: Exercise
Subject: Science	Chapter 12 : Reproduction in Plants

Instructions: Write this exercise in your Science copy.

Q.1.Fill in the blanks:-

(a) Production of new individuals from the vegetative part of parent is called vegetative reproduction.

(b) A flower may have either male or female reproductive parts. Such a flower is called unisexual flower.

(c) 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 pollination.

(d) The fusion of male and female gametes is termed as fertilization.

(e) Seed dispersal takes place by means of wind and water.

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.
eg 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.
eg 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.
eg 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.
eg potato, ginger and rose.

Q.3. Explain what you understand by sexual reproduction.

Ans. Sexual reproduction means involvement of two parents in the process of reproduction. In sexual reproduction male gamete and female gamete fuse to form a zygote. These zygotes develop into individuals which are not identical. Off-springs inherit the characteristics of both the parents. In sexual reproduction both parents survive after the process of reproduction.

Q.4. 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.

Q.5.Sketch the reproductive parts of a flower.
Ans Draw figure 12.9 (a) and (b) both.

Q.6.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.

Q.7.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. After this process of fertilization, the ovary develops into fruit and ovule into seeds.

Q.8.Describe the various ways by which seeds are dispersed.
Ans. Following are the ways in which the seeds are dispersed:-
(i) Some light seeds like that of madar, which are hairy, dry and small are carried away by the wind to different places.
(ii) Spiny seeds and fruits like that of xanthium and urena, stick to the clothes of passers by and animals. These seeds are carried away by these agents to different places.
(iii) In some plants having heavy seeds like that of coconut, water acts as the dispersing agents.
(iv) Some seeds are dispersed with the fruit burst like in case of balsam and castor.

Q.9.Match items in Column I with those in Column II

Column I	Column II
(a) Bud	(i) Maple
(b) Eyes	(ii) Spirogyra
(c) Fragmentation	(iii) Yeast
(d) Wings	(iv) Bread mould
(e) Spores	(v) Potato
	(vi) Rose

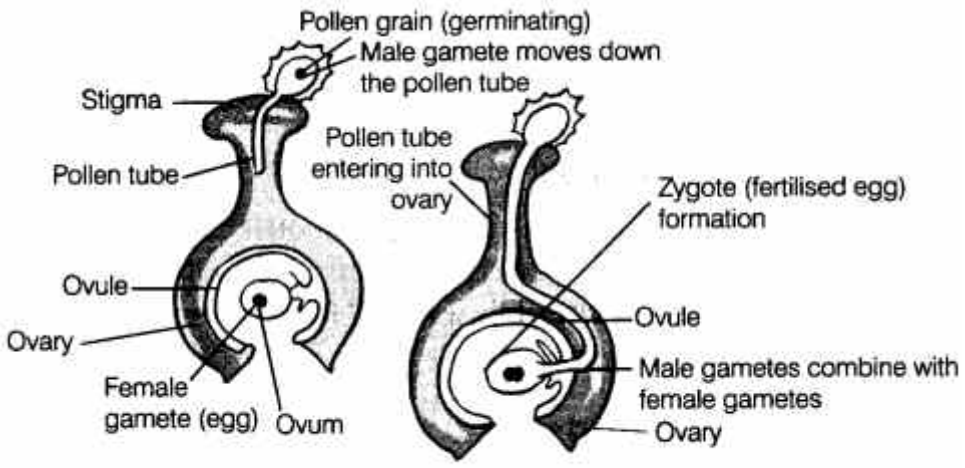
Ans (a)-(iii) and (vi), (b)-(v), (c)-(ii), (d)-(i), (e)-(iv).

Q.10. 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 the male and the female gametes is called
(i) fertilisation (ii) pollination (iii) reproduction (iv) seed formation
c) Mature ovary forms the
(i) seed (ii) stamen (iii) pistil (iv) fruit
(d) A spore producing plant is
(i) rose (ii) bread mould (iii) potato (iv) ginger
(e) Bryophyllum can be reproduced by its
(i) stem (ii) leaves (iii) roots (iv) flower.

Extra Question and Answers:

Q1. Give one difference between unisexual and bisexual flower with examples.
Ans. **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.

Q2. What is meant by fertilization? Draw suitable diagram of this process.
Ans. 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

Q3. How do the plants like sugarcane, potato and rose reproduce when they cannot produce seeds?

Ans. **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.

Q4. What is seed dispersal? What will happen if all the seeds of a plant were to fall at a same place and grow?

Ans. Plant produces large number of seeds. When these seeds fall down they starts growing. The process by which the seeds are scattered to different place (far and wide from their parents) is called seed dispersal.

The seeds and fruits are dispersed away through various agencies like air, water and animals. Sometimes dispersal takes place by the explosion or bursting of fruits. If all the seeds of a plant were to fall at the same place and grow, there will be a severe competition for sunlight, water, mineral and space. As a result, the survival for the plants will be difficult and the plants who survive will not grow into a healthy plants.

Q5. Insects are called agents of pollination. How do they aid in process of pollination?

Ans. 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.

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