DON BOSCO SCHOOL, KOKAR, RANCHI

Session-2020 - 2021

Class V

Subject- General Science

Chapter 4- Pollination

Suggested activity for better learning:

1. Thorough reading of the lesson.

2. Taking reference of the diagrams and practising them.

3. Examining a live flower to understand the different whorls of a flower.

Exercises (pg. nos.-58,59,60.)

A. Tick the correct option:

1. A flower is generally supported by a part of stem called pedicel.

2. The swollen end of the pedicel is known as thalamus.

3. The outermost whorl of a flower is calyx.

4. Style connects the stigma to the ovary.

5. Pollen grains are present in anther.

6. Which of the following is an example of bisexual flower? hibiscus.

B. Fill in the blanks:

1. Sepals are green and leaf like structures.

2. The female gametes are present in ovules.

3. Stigma is the sticky swollen tip of the pistil that receives pollen grains.

4. After fertilization, the ovary forms the fruit of the plant.

5. Pollination is essential for the production of seeds.

C. Write 'T' for true and 'F' for false statements:

1. The four whorls of flowers are calyx, corolla, androecium and gynoecium. (T)

2. The stamen is the female reproductive part of a flower. (F)

3. The pistil is the male reproductive part of a flower. (F)

4. Flowers can be monosexual or bisexual. (T)

5. Insects and wind are the common pollinating agent. (T)

6. Self pollination is commonly seen in peas and peanuts. (T)

D. Give two examples of each:

1. Monosexual flowers- papaya/watermelon/pumpkin/cucumber.

2. Bisexual flowers- hibiscus/peas/lily/rose/neem.

3. Self pollinated flowers- peanuts/orchids/peas.

4. Cross pollinated flowers- tulips/apples/maples.

E. Name them:

1. The whorl of a flower that contains sepals- calyx .

2. The whorl of a flower that contains petals- corolla .

3. The male reproductive part of a flower- stamen.

4. The female reproductive part of a flower- pistil.

5. The flower that contains both male and female reproductive part- bisexual flower.

F. Differentiate between:

1. Bisexual flowers and Monosexual flowers:

Bisexual flowers	Monosexual flowers
(i)These flowers have all the four whorls of a flower, i.e. calyx, corolla, androecium and gynoecium.	These flowers have only three whorls of a flower, i.e. calyx, corolla and one among androecium and gynoecium.

(ii) Self pollination as well as cross pollination occurs in such flowers.	Only cross pollination occurs in such flowers.
(iii) Examples: hibiscus, tulip, rose, lily.	Examples: pumpkin, cucumber, papaya.

2. Self-pollination and cross pollination:

Self-pollination	Cross- pollination
(i) Transfer of pollen grains occurs from the anther to the stigma of the same flower or of another flower of the same plant.	The transfer of pollen grains occurs from anther of one flower to the stigma of another flower.
(ii) This kind of pollination occurs only in bisexual flowers.	This kind of pollination occurs both in mono-sexual as well as bisexual flowers
(iii) Examples: peanuts, orchids and peas.	Examples: apples, maples, tulips.

G. Answer the following:

Q.1) What is pedicel?

Ans.1) A pedicel is a part of the stem that connects the stem to the flower.

Q.2) Draw a diagram to show different whorls of a flower.

Ans.2) [Draw the diagram,(Parts of a Flower) given on pg no. 52.]

Q.3) What is the role of petals in a flower?

Ans.3) The role of petals in a flower are as follows:

(i) They protect the inner whorls, i.e. the androecium and the gynoecium during bud stage.

(ii) The main function of the petals is to help in the process of pollination. Petals may be brightly coloured or may produce scent which attract pollinating insects.

Q.4) Name the different parts of androecium and gynoecium.

Ans.4) The different parts of the androecium are:

a. filament

b. anther

The different parts of the gynoecium are:

a. stigma

b. style

c. ovary

Q.5) Where are the male and female gametes of flowers found?

Ans.5) The male gametes are found in the pollen grains that are present inside the anther

and the female gametes are present in the ovules contained in the ovary.

[For better understanding of ans.nos.4 and 5, please read pg.no. 53 again and refer to the diagrams as well.]

Q.6) Draw a well labelled diagram of-

(i) Stamen (ii) Pistil

Ans.6) [Diagrams on pg. no. 53,(i) Androecium/Stamen, (ii) Gynoecium/Pistil.]

Q.7) What is pollination? Explain the process of pollination.

Ans.7) The transfer of pollen grains from the anther to the stigma is called pollination.

The male gametes are present in the pollen grains that are placed inside the anther. When the anthers mature they split open and the pollen grains are set free. The female gametes are in the ovules contained in the ovary. To reach to the ovule the pollen grains fall on the stigma of the flower. This process of transfer of pollen grains from the anther to the stigma is called pollination.

Asignment for assessment:

1. A well labelled diagram of 'Parts of a Flower'.

2. To observe the reproductive parts of a bisexual flower and drawing and labeling its male and female parts.

Chapter-5; Plant Reproduction

Suggested activity for better learning:

1. Thorough reading of the lesson.

2. Taking reference of the given diagrams and practising them.

3. Examining the reproductive parts of a flower, different types of seeds and plants having vegetative reproduction (for example, potato, ginger, bryophyllum).

Exercises (pg.nos.-68,69,70)

A. Tick the correct option:

1. Zygote is formed after fertilization.

2. The outer covering of the seed is called seed coat.

3. Seeds usually have one or two seed leaves which are called cotyledons.

4. The seeds of coconut plant are dispersed through water.

5. Plants like sugarcane, money plant and rose grow from stem.

B. Fill in the blanks:

1. Pollen tube carries the male gamete through the style to the ovary.

2. The embryo further develops to form the baby plants.

3. The cotyledons provide food to the young plant inside the germinated seed.

4. Some plants disperse their seeds by ways of explosion.

5. The ovules grow into seeds.

C. Write 'T' for true and 'F' for false statements.

1. Pollen tube carries female gamete through the style to the ovary which contains the ovules.(F)

2. After fertilization sepals, petals and other parts except ovary dry and fall off.(T)

3. Seed coat provide food to the baby plant.(F)

4. Some seeds float away from the parent plant to different places and germinate.(T)

5. When plants reproduce through seeds, it is called vegetative reproduction.(F)

D. Match the following:

1. Mangoes, oranges, pears- dispersed by animals.

2. Hornbeam, dandelion- dispersed through air.

3. Sweet potato, turnip, carrot- grow from roots.

4. Potato, onion, ginger- grow from their stem.

5. Begonia, streptocarpus- grow from their stem.

E. Name them:

1.Type of reproduction in which both parents (male and female) are involved.- sexual reproduction

2. The part of the seed that contains stored food for the baby plant.- cotyledon

3. This part of the plant develops as fruit.- ovary

4. The process of growing a seed into a seedling.- germination

5. The process of scattering of the seeds away from the mother plant.- seed dispersal

6. Type of reproduction in which roots, stems and leaves are involved.- vegetative reproduction

F. Answer the following questions:

Q1) What is sexual reproduction in plant? Explain.

Ans. 1) When new plants are produced from the seeds of a plant, it is called sexual reproduction.

In sexual reproduction in plants, both the male and the female parts of the flower i.e. the stamen and the pistil are involved in producing the new plant. By the process of pollination, the pollen grains reach to the stigma and further reach to the ovules contained in the ovary. Here the male gametes contained in the pollen grains combine with the female gametes in the ovules to form a zygote by the process of fertilization. The zygote divides rapidly to form the embryo which further develops into a baby plant inside the ovule and the ovule develops into a seed. Therefore, when new plants are produced from the seeds, it is called sexual reproduction.

Q2) Explain the process of fertilization.

Ans. 2) After the pollen grains land on the stigma, a pollen tube is formed within the style which carries the male gamete through the style to the ovary. Here the male gametes combine with the female gametes that are inside the ovules. This process in which the male gamete fuse with the female gamete to form a zygote is called fertilization.

Q3) Explain the structure of a seed with the help of a diagram.

Ans. 3) [Draw well labeled diagrams from page no. 63of your book]

Q4) Mention different ways in which seeds are dispersed.

Ans.4) The different ways in which seeds are dispersed are as follows:

(i) Dispersal by wind.

(ii) Dispersal by water.

(iii) Dispersal by animals.

(iv) Dispersal by explosion of fruits.

Q5) What is germination? Mention different conditions for germination.

Ans. 5) The process of growing of a seed into a seedling is called germination.

The conditions required for germination are as follows:

(i) Right soil

(ii) Water

(iii) Sunlight

(iv) Air

Q6) What do you mean by vegetative reproduction? Give two examples of plants that reproduce in this way.

Ans. 6) Plants also reproduce from roots, stems and leaves. This type of reproduction is called vegetative reproduction.

We see vegetative reproduction in the following two plants,

(i) sugarcane- through stem

(ii) sweet potato- through root.

Assignment for assessment:

1. Drawing a well labelled diagram of 'The Internal Structure of a Seed'.

2. Diagram of the 'Process of Germination'.

3. Diagrams of three examples of plants in which we find vegetative reproduction.