METAS ADVENTIST SCHOOL

Affiliated to CISCE, New Delhi

P. O. Box 24, Athwalines, Surat.

Std - VI

BIOLOGY

L-2 THE FLOWER

Q.I SELECT THE CORRECT OPTION.

1. Flowers enhance the process of:

(a) pollination in plants

(b) fertilization in plants

(c) both of them

(d) none of them

2. Pollen grains are produced in the

(a) ovary

(b) anther

(c) stigma

(d) style

3. The gynoecium consists of

(a) style, stigma, ovary

(b) anther, filament, style

(c) stigma

(d) style

4. Calyx consists of the

(a) stamens

(b) anthers

(c) sepals

(d) petals

5. Transfer of pollen grains from anther to stigma is termed as

(a) reproduction

(b) fertilization

(c) pollination

(d) fusion

6. A dicot seed has

(a) one cotyledon

(b) two cotyledons

(c) three cotyledons

(d) four cotyledons

7. A dicot seed germinates by

(a) epigeal germination

(b) hypogeal germination

(c) germination does not take place

(d) none of them

8. The fusion of male cell with the female cell in the ovary is called

(a) pollination

(b) fertilization

(c) germination

(d) vegetation

Q. II FILL IN THE BLANKS WITH THE CORRECT OPTION.

1.Pollen grains are produced in the anther.

2.All fruits are formed by the ovaries.

3.The gynoecium consists of stigma and style.

4.The brightly colored flowers are usually pollinated by insects.

5.The part of a flower that gives rise to a seed is called ovule.

Q.III STATE IF THE FOLLOWING STATEMENTS ARE TRUE OR FALSE. CORRECT THE FALSE STATEMENT.

1.The flower is transformed into a fruit. True

2.Zygote is the result of fusion of male cell with the female cell. True

3. Most flowers have colorful sepals. False

Correct statement- Most flowers have colorful petals.

4.Wind-pollinated flowers produce pollen grains in large quantity. True

5. A stamen has long stalk called style. False

Correct statement- A stamen has long stalk called filament.

Q.IV MATCH THE FOLLOWING

1. Style	(b)	(a) Androecium
2. Stamen	(a)	(b) Gynoecium
3. Fruit	(d)	(c) Outer skin of the fruit
4. Seed	(e)	(d) Ripen Ovary
5. Epicarp	(c)	(e) Ovule

Q.V Choose the odd one out and give scientific reasons.

1. Style, stigma, ovary, anther.

Reason- Rest all are female parts of a flower.

2.Calyx, corolla, androecium, stem

Reason- Rest all are parts of a flower.

3. Self-pollination, insect pollination, wind pollination, water pollination

Reason- Rest all are agents of pollination.

4. Leaf, style, ovary, stigma

Reason- Rest all are parts of Gynoecium

5. Sepals, petals, stigma, roots

Reason- Rest all are parts of a flower.

UNDERSTANDING IDEAS

Q.I Give one word for the following

1. It is the most attractive and colorful part of the plant. – Flower

2. The female reproductive organ of a flower. – Carpel

3. A process by which a dormant seed develops into a seedling in the favorable conditions of air, water and warmth. – Germination

4. The transfer of pollen grains from anther to stigma of a flower. - Pollination

5. The male reproductive part of a flower. – Androecium

6. A matured, ripen ovary. – Fruit

7. The second whorl of a flower. – Corolla

8. The sweet, juicy, and edible part of the fruit. – Mesocarp

9. A process of fusion of a male cell with a female cell in flowers. – Fertilization

10. The outer, thin and leathery part of a fruit. – Epicarp

Q.II ANSWER THE FOLLOWING QUESTIONS IN SHORT.

1. Name any four flowering plants. Also mention the color of the flowers in these plants.

Ans. Rose- Red, Sunflower- Yellow, Jasmine- White, Lotus- Pink

2. Name a flower that has all the four whorls.

Ans. Hibiscus

3. In which part of the flower is the ovule found?

Ans. Ovule is found in the ovary which is the female reproductive part of the flower.

4. What is pollination?

Ans. The process of transfer of pollen grains from the anther to the stigma of the same flower or other flower of the same type is called pollination.

5. What is meant by the term 'fertilization'?

Ans. The process of fusion of the male cell with the female cell is known as fertilization.

6. Give examples of two plants that show epigeal germination of seeds.

Ans. Cotton and Papaya shows epigeal germination of seeds.

7. What are the conditions necessary for the germination of seeds?

Ans. The conditions necessary for germination of seeds are the sufficient amount of water, air and a suitable temperature.

8. Where does fertilization occur in a flowering plant?

Ans. Fertilization occurs inside an ovary where a male cell fuses with an egg cell and forms a zygote.

Q.III ANSWER THE FOLLOWING QUESTIONS IN DETAIL.

1. What are the male and female parts of a flower? Mention the functions of each.

Ans. The male reproductive part of a flower is known as Stamen which consists of Filament and Anther.

Filament- It is a long stalk which supports the anther.

Anther- It bears yellow, powdery substances called pollen grains which take part in reproduction of flowers.

The female reproductive part is known as Carpel which consists of Stigma, Style and Ovary.

Stigma- It is a sticky part on which the pollen grains land.

Style- It is a long narrow tube which holds the stigma.

Ovary- It contains small round shaped eggs called ovules.

2. Explain the structure of a seed in detail.

Ans. The seed has an outer protective covering called the seed coat which bears a small scar on it known as Hilum. At the pointed end of a seed, a micropyle is situated very close to hilum. On removing the seed coat, the fleshy parts called cotyledons are seen which store the food for the baby plant called Embryo. An embryo has two parts called Radicle and Plumule.

3. What are the two types of germination in plants? Give two examples of each.

Ans. The two types of germination in plants are- Epigeal Germination and Hypogeal Germination.

Eg of Epigeal Germination – Cotton, Papaya

Eg. of Hypogeal Germination- Maize, Groundnut

4. Name three agents by which pollination takes place in plants. Also give two examples of plants in which pollination takes place by these agents.

Ans. The three agents by which pollination takes place in plants are wind, water and insects.

Pollination by wind – Maize, Wheat

Pollination by water – Hydrilla, Vallisneria

Pollination by Insects – Orchids, Harsingar

Q.5 What part is played by stamens and carpel of a flower in reproduction?

Ans. Stamen is the male reproductive part of the plant which consists of an anther and a filament. Anther produces male eggs in the pollen grains. Carpel is the female reproductive part of the plant which consists of the stigma, style and ovary. The stigma is sticky which receives pollens from the anther through pollen tube. Ovary contains ovules which has female eggs. After pollination the male eggs fuses with the female eggs in the ovary, as a result zygote is formed. This process is known as fertilization.

Q.6 Why do insect-pollinated flowers produce nectar?

Ans. Insect pollinated flowers are sweet smelling because they produce nectar. Nectar is produced to attract the insects. While they are busy enjoying the nectar, the sticky pollen grains stick to its body and they help in pollination.

Q.7 What are pollen grains? Why are they produced in the flower?

Ans. Pollen grains are yellow, powdery microscopic substances which are formed in the male reproductive part of the flower.

Pollen grains are transported by various means like wind, water and insects to the female reproductive part of the flower where fertilization takes place and as a result new seed is formed.

Q.8 Give one point difference between calyx and corolla.

Ans.

CALYX	COROLLA
1. It is usually green in color which consists of leaf like structures called sepals.	1.It consists of brightly colored, large and scented structures called petals.

Q.V DIFFERENCE BETWEEN THE FOLLOWING

1. COMPLETE FLOWER AND INCOMPLETE FLOWER

COMPLETE FLOWER	INCOMPLETE FLOWER
1. A flower which has all the four floral whorls is called a complete flower.	1. A flower which lacks any of the floral whorls is called an incomplete flower.

2. SELF- POLLINATION AND CROSS-POLLINATION

SELF-POLLINATION	CROSS-POLLINATION
1. The transfer of pollen grains from an anther of a flower to the stigma of same flower or another flower of the same plant is termed as self-pollination.	1. The transfer of pollen grains takes place from the anther of one flower to the stigma of another flower of the same type.

3.EPIGEAL GERMINATION AND HYPOGEAL GERMINATION V

EPIGEAL GERMINATION	HYPOGEAL GERMINATION
1. It is a type of germination in which the cotyledons emerge above the ground during germination.	1. It is a type of germination in which the cotyledons remain below the soil surface during germination.

4. ANDROECIUM AND GYNOECIUM

ANDROECIUM	GYNOECIUM
1. It is the male reproductive part of a flower which consists of anther and filament.	1. It is the female reproductive part of a flower which consists of stigma, style and ovary.

THINK CRITICALLY

1. Can fertilization occur in flowering plants without pollination?

Ans. No, fertilization cannot occur in flowering plants without pollination because for fertilization both male and female gametes are required and if pollination does not occur then male gametes will not reach to female gametes.

2. Tomato is a fruit but apple is not considered as a true fruit. Give reason.

Ans. Tomato is a fruit as it is formed from a flower and contain seeds but apple is not considered as a true fruit as it is developed from the thalamus and not from the ovary.