CHAPTER – 3

THE FLOWER – STRUCTURE AND FUNCTIONS

P. 42 CHECK YOUR PROGRESS 1

A. State if the following statements are true (T) or false (F).

1. T	2 . T	3. F	4 . T
5. F	6 . T	7. F	8. F

B. Answer these questions.

1. Some flowers bear only stamens and are referred to as male flowers or staminate flowers.

2. Functions of Calyx:

- i. Encloses and protects the inner whorls of a flower.
- **ii.** Along with petals, they attract birds and insects for pollination.

Functions of Corolla:

- i. Bright coloured corolla attracts insects and birds for pollination.
- ii. Encloses and protects the stamens and the pistil.
- **3. a. Sessile flower:** Flowers (like saffron) without a stalk are known as sessile flowers.
 - **b. Gamopetalous:** When the petals in a flower are partly/completely fused as in *Petunia*, the condition is known as gamopetalous.
 - c. Polyadelphous androecium: The stamens may be free and filaments are united into several groups, known as polyadelphous androecium. For example, mustard, *Bombax*, etc.
 - d. The parts of a flower are attached to the receptacle in rings. These are called floral whorls. A flower generally consists of four whorls.

P. 44 CHECK YOUR PROGRESS 2

A. Match the terms in Column A with their most appropriate description in Column B.

1.c 2.d 3.b 4.a

B. Why are carpels referred to as the female part of flower?

The carpels form the gynoecium, which is referred to as the female part of the flower because the carpels produce the female gametes.

C. Name the following.

1. Stigma 2. Ovary	3. Style
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2 4. Gynoecium 5. Carpellate

P. 45 EXERCISES

I. Multiple-Choice Questions

A. Choose the most appropriate answer.

1. c	2. c	3. b	4. a
5. b	6. C	7. d	8. d

II. Assertion–Reason Type Questions

	Α.	1. c	2. b	3. C	4.	С
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III. Very Short Answer Type Questions

- A. Complete the following paragraph by filling in the blanks (1) to (5) with appropriate words.
 - 1. sepals
 - 2. petals
 - 3. stamens
 - 4. carpels
 - 5. pollination
- B. Match the items in Column A with those in Column B and write down the matching pairs.
 - 1. c 2. d 3. a 4. b

IV. Short Answer Type Questions

A. Explain the following terms.

- 1. Epigyny: A condition in which ovary is below the level of rest of the flower parts. For example, sunflower.
- **2. Perigyny:** If the ovary is surrounded by a receptacle which grows to form a cup-shaped structure up to the midway of the ovary and the other three whorls sprout from the receptacle rim, the condition is known as perigyny.
- **3. Style:** It is a cylindrical tube-like structure connecting stigma to ovary.
- **4. Placentation:** The arrangement of placenta within the ovary is called placentation.
- **5. Inflorescence:** It is a group or cluster of flowers on the branch of a plant. It refers to the arrangement of individual flowers on the axis or floral stem.
- 6. Essential whorls: The parts of a flower that are directly concerned with reproduction are known as essential whorls. Pistils or carpels (gynoe cium) and stamens (androecium) are called essential whorls.

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S.No.	Structure	Location	Functions
1.	Placenta	Ovary	Bears ovules
2.	Anther	Stamen head	Produces pollen grains
3.	Thalamus	Base of the flower	Bears flower
4.	Stigma	Terminal part of the carpel	Receives pollen grains
5.	Ovules	Inside ovary	Forms zygote after fusion with male nuclei
6.	Androecium	Third whorl on inside of corolla	Act as male reproductive organs of flowers
7.	Gynoecium	Fourth and innermost whorl of flower	Act as female reproductive organs of flowers

B. State the location and functions of the following parts in a flower.

V. Long Answer Type Questions

A. Answer these questions.

 Types of androecium on the basis of stamens being fused or free.: Polyadelphous, Monadelphous, Diadelphous, Syngenesious

Monadelphous: Hibiscus

Diadelphous: Pea, gram

Syngenesious: Sunflower

Polyadelphous: Bombax

2. Those parts of the flower which are directly concerned with reproduction are known as essential parts of a flower, i.e., stamens and carpels.

Those parts of the flower which do not take part in reproduction but are there simply for protection or for making the flower attractive for pollination are the non-essential parts, i.e., sepals and petals.

The primary role of a flower is reproduction. Therefore, stamens and carpels are named as essential parts.

3. Functions of various parts of the female reproductive part of a bisexual flower.

- i. **Stigma:** The receptive part of the female reproductive organ on which pollen grains germinate.
- **ii. Style:** Often the stigma may be borne on a slender stalk-like structure called style. Style connects stigma to the ovary.
- **iii. Ovary:** The basal region of a carpel, containing one or more ovules. The female gametes develop in the ovules.
- **iv. Ovules:** The structures in an ovary containing the egg cell, within the embryo sac. The ovule develops into the seed after fertilization.
- 4. Longitudinal section of a flower



Structure of a flower

- VI. Structured/Application/Skill Type Questions
- A. Given below are various types of androecium. Name these types and give one example of each.

Figure number	Name of type of androecium	Example
1	Polyadelphous	Mustard
2	Monadelphous	China rose
3	Diadelphous	Peas
4	Syngenesious	Sunflower

B. The diagram given below illustrates the structure of a flower.

- 1. a. Petal; b. Stigma; c. Sepal; d. Ovary; e. Anther
- 2. Part labelled e the anther produces pollen grain.
- **3.** Part labelled **b** the stigma receives the pollen grain.
- **4.** After fertilization, part **a** (petal) withers away and part **d** (ovary) is converted into fruit.

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