UNIT II : STRUCTURAL ORGANISATION IN PLANTS - MORPHOLOGY

3. MORPHOLOGY OF FLOWERING PLANTS

2VSAQ + 1SAQ [2 + 2 + 4=8 Marks]

ROOT POINTS

1. **Morphology of Plants** deals with the study of form, size, colour and structure of plants.
2. **The main contents of the chapter are**
   i) The root ii) The stem iii) The leaf iv) The inflorescence
   v) The flower vi) The fruit vii) The seed
   viii) technical description of flowering plants ix) Solanaceae
3. **Root:** The under ground part of the flowering plant is called root and upper part is shoot.
4. Main functions of roots are **absorption** and **conduction** of water, Minerals.
5. Fibrous roots originate from the base of stem and Adventitious roots arise from non-radical parts.
6. **The four regions of a root:** 1) Root cap 2) Region of meristematic activity [SAQ]
   3) Region of elongation 4) Region of maturity
7. **Stem** is the ascending part of the axis bearing branches, leaves, flowers and fruits.
   Stem bears nodes and internodes.
8. Leaf is a lateral out growth of stem, developed exogenously at the node.
9. Leaves are green in colour and perform photosynthesis.
10. The leaf exhibits several variations in their shape, size, margin, apex and lamina.
11. The swollen leaf base is called pulvinous leaf base. It is seen in 'Leguminaceae' family. [IPE]
12. The mode of arrangement of veins and veinlets in the lamina of a leaf is called **Venation.** [IPE]
13. The swollen leaf base is called pulvinous leaf base. It is seen in 'Leguminosae' family. [VSAQ]
14. In dicots, reticulate venation is seen, in monocots parallel venation is seen. [VSAQ]
15. **Phyllotaxy** is the mode of arrangement of leaves on the stem. It is of three types. [SAQ]
    1) Alternate Phyllotaxy 2) Opposite Phyllotaxy 3) Whorled Phyllotaxy
16. In Racemose, main axis shows continuous growth, in Cymose, [VSAQ]
    main axis shows limited growth.
17. The arrangement of flowers on the floral axis is called inflorescence.
18. The attachment of stamens to the petals is called **epipetalous condition.** [VSAQ]
    Ex: Datura Brinjal.
19. Carpels of gynoecium are i) free from each other in apoccarpous ovary, [VSAQ]
    ii) fused with each other in syncarpous ovary,
20. Based on the position of calyx, corolla and insertion of floral members on thalamus, [SAQ]
    flowers are three types. 1) Hypogynous 2) Perigynous 3) Epigynous.
21. The flower is a modified shoot, meant for sexual reproduction.

22. **Actinomorphic flower** can be divided into two equal halves in **any** vertical plane. [VSAQ]
23. **Zygomorphic flower** can be divided into two similar halves in **one** vertical plane. [VSAQ]
24. **Aestivation** is the mode of arrangement of sepals or petals in a floral bud [SAQ]
25. **Main types of aestivation:** 1)Valvate aestivation 2)Twisted aestivation [SAQ]
    3)Imbricate aestivation 4)Papilionaceous (or) Vexillary aestivation:
26. **Fruit** is the modification of ovary
27. A fruit formed without fertilization of ovary is called **parthenocarpic fruit**. **Ex:** Banana. [VSAQ]
28. **Placentation** is the arrangement of ovules within the ovary It is of 5 types. [SAQ]
    1) Marginal Placentation 2) Axile Placentation
    3) Parietal placentation 4) Free central placentation 5)Basal placentation
29. **Seed** is the modification of ovule.
30. A floral diagram provides information about the number of parts of a flower, their arrangement and their relation. [SAQ]
31. **Solanaceae** is commonly called as potato family. It includes potato, tomato, brinjal, chilli, tobacco..etc.,
32. In **Solanum nigrum ovary** is bicarpellary, syncarpous, bilocular, superior ovary with many ovules on swollen axile, placentation. [VSAQ]
33. **Floral formula of Solanum plant:** Br or Ebr, Ebrl, $\oplus$, φ, $K_{(5)}$, $\overset{\frown}{C_{(5)}}$, $A_{(5)}$, $\underline{G}_{(2)}$ [VSAQ]
34. Roots play insignificant role in absorption of water in **Pistia**. [NEET-2015]
35. Axile placentation is present in **lemon.** [NEET-2015]
36. A major characteristic of monocot root is the presence of **vasculature without cambium.** [NEET-2015]
37. Leaves become modified into spines in **Opuntia.** [NEET-2015]
38. Keel is the characteristic feature of flower of **Indigofera.** [NEET-2015]
39. Perigynous flowers are found in **rose.** [NEET-2015]
40. Cortex is the region found between **epidermis and stele.** [NEET-2016]
41. Free-central placentation is found in **Dianthus.** [NEET-2016]
42. Radial symmetry is found in the flowers of **Brassica.** [NEET-2016]
43. The term 'polyadelphous' is related to **androecium.** [NEET-2016]
44. The standard petal of a papilionaceous corolla is also called **vexillum.** [NEET-2016]
45. Specialised epidermal cells surrounding the guard cells are called **subsidiary cells.** [NEET-2016]
46. Tricarpellary, syncarpour gynoecium is found in flowers of **Liliaceae.** [NEET-2016]
47. Cotyledon of maize grain is called **scutellum** [NEET-2016]
48. Stems modified into flat green organs performing the functions of leaves are known as **phylloclades.** [NEET-2016]
49. The morphological nature of the edible part of coconut is **endosperm.** [NEET-2017]
50. In Bougainvillea, thorns are the modifications of **stem.** [NEET-2017]
51. The roots that originate from the base of stem are **fibrous roots**. [NEET-2020]