

Use Separate Answer
Script for each group

M.Sc. Examination, 2018

Semester-IV

Botany

Paper: MBC-41

(Anatomy, Embryology & Pharmacognosy)

Time: Three Hours

Full Marks: 48

Questions are of value as indicated in the margin

Group – A (Anatomy)

Answer *any three* questions.

1. Define plant latex. State the chemical nature of its various components. Describe the modes of development of non-articulated laticifers. Distinguish between holocrine secretion and granulocrine secretion. $1+2+3+2=8$
2. Write in brief the ultrastructure of the cellulose microfibrils. State the chemistry of different types of lignins commonly found in the cell walls of flowering plants. Add a note on expansin proteins. $3+3+2=8$
3. Describe with diagrams different types of nodal vascular structure in vascular plants. Why is unilacunar double-trace structure considered as the basal one? Justify. $3+5=8$
4. Mention the probable factors involved in the process of differentiation. Describe the role of polarity and pattern formation in the differentiation of plants. $3+5=8$
5. Write short notes on *any two* of the following: $4 \times 2 = 8$
 - a) Plastids and p-proteins of the phloem
 - b) Ray parenchyma: types and phylogeny
 - c) Phellem: origin, development and structure
 - d) Sieve plate: types and development

Group-B (Embryology and Pharmacognosy)

Answer *any three* questions.

1. What is Polyembryony? Briefly describe the four categories of polyembryony in Angiosperms. What are the different theories put forth to explain the occurrence of polyembryony? $1+4+3=8$
2. Enumerate the five types of embryogeny recognized by Maheshwari in dicotyledons. What is Piperad type of embryogeny? How do early embryogeny in monocotyledons and dicotyledons differ? $5+1+2=8$
3. Give a detail pharmacognostic account of *Adhatoda* leaf. 8
4. Mention the characteristic features of Aleurone tissue. What is suspensor? What are the different types of suspensors found in angiosperms? $3+1+4=8$
5. Write short notes on *any two* of the following: $4 \times 2 = 8$
 - (a) Cytology of endosperm.
 - (b) Therapeutic use of alkaloids.
 - (c) Embryo culture.
 - (d) Nuclear endosperm.