

M.Sc. (Botany) Semester - 3 (CBCS) Examination**Oct/Nov-2021 (NEW COURSE)****Plant Anatomy, Embryology & Histological Techniques (Core (New))****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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SECTION - I

- Q.1** Answer the following
(1) Describe theories of RAM with any appropriate figures (07)
(2) Heart wood and soft wood (07)
- OR**
- Q.1** What is Nodal Anatomy? State different Nodal types. (14)
- Q.2** Answer the following
(1) Describe different types of Pollination (07)
(2) Describe ABC model for flowering (07)
- OR**
- Q.2** Describe types of embryo sac. (14)
- Q.3** Answer the following (any seven) (07)
(1) Describe the structure of 'root hairs' in short.
(2) Give two anatomical difference between monocot and Dicot root
(3) What is Vascular bundle?
(4) What is polyembryony?
(5) What is the role of endosperm?
(6) Which are the controlling factors of flowering
(7) What is sexual incompatibility in plant
(8) If male plant 6n and female plant 10n than what are genetic formation found in Zygote and Endosperm?

SECTION - II

- Q.1** Explain ultrastructure of Actin and myosin (14)
- OR**
- Q.1** Write short notes on
(1) Apomixis (07)
(2) Uniports, antiports and symports mechanism (07)
- Q.2** Describe the process of killing, fixing and sectioning for permanent stained preparation (14)
- OR**
- Q.2** Write short note on:
(1) Mounting for temporary preparation (07)
(2) What are biological stains? Discuss in details (07)
- Q.3** Answer the following (any seven) (07)
(1) What is Embryology in relation to taxonomy?
(2) What are Ca⁺⁺ dependent homophilic?
(3) Define : pollen pistil interaction through temporary preparation.
(4) Explain – whole mounts
(5) State the function of IF and associated proteins?
(6) Define the term 'diffusion'
(7) Discuss squash method of mounting
(8) Explain Active Transport mechanism in cells.
