

Mid-West University  
**Examinations Management Office**  
End Semester Examination 2081

Bachelor level/ B. Sc. /5<sup>th</sup> Semester

Time: 3 hours

Subject: Anatomy and Embryology (BOT451)

Full Marks: 60

Pass Marks: 30

*Candidates are required to give their answer in their own words as far as practicable. The figures in the margin indicate full marks.*

**Group A**

**Attempt all the long answer questions.**

**[4x8 = 32]**

1. Define embryo sac. Emphasize on the different types of embryo sacs found in plants. (1+7)
2. What is meant by anomalous secondary growth? Describe the anomalous secondary growth in *Amaranthus* stem with well label diagram. (1+4+3)

**OR**

What is meant by secondary growth and explain the secondary growth of dicot stem. (1+7)

3. Give the concise account of adaptive anatomical features of xerophytes (any one) with well label diagram. (5+3)
4. Give short notes on:
  - a. Fertilization in angiosperm
  - b. T.S. of mature anther (description only)

**Group B**

**Answer all the questions in brief.**

**[7x3 = 21]**

5. How the endosperm is formed? Illustrate with diagram. Describe the different types of endosperms.
6. Briefly discuss the transverse section of monocot stem with diagram.
7. Give an account of development of male gametophyte with suitable diagram.
8. Write the characteristic features of meristematic tissues and classify the tissues on the basis of position and origin.
9. Mention the development of embryo of dicot plant with suitable diagram.
10. What do you mean by heterostyly? Describe the heterostyly in primrose plant.

**OR**

Discuss about successive and simultaneous type of formation of microspores.

11. Discuss apomixis in brief.

**Group C**

**Answer any seven questions in very short.**

**[7x1 = 7]**

12. Define ubisch bodies.
13. Point out any two taxonomic significance of palynology.
14. Define Histogen theory.
15. What do you mean by campylotropous ovule?
16. Write down the advantages and disadvantages of self-pollination.
17. Mention the mesophytic peculiarities of Cynodon stem.
18. Differentiate between tenuicellate and crassinucellate ovules.
19. Point out any two anatomical features of leaf.
20. Write the importance of endosperm for the development of embryo.

**The End**