

Reg. No

Name

M. Sc DEGREE END SEMESTER EXAMINATION - OCTOBER 2019**SEMESTER 3 : BOTANY****COURSE : 16P3BOTT10 : GYMNOSPERMS, EVOLUTION AND PALEOBOTANY***(For Regular - 2018 Admission and Supplementary - 2016/2017 Admissions)*

Time : Three Hours

Max. Marks: 75

Section A**Answer any 8 (2 marks each)**

1. Distinguish between the pollen grains in gymnosperms.
2. What is boss?
3. What is meant by an obliterated pith? Give examples.
4. What is the importance of girdling bundles?
5. Define the structure of a microspore.
6. What is the 'Theory of use and disuse'?
7. What is the theory of spontaneous generation or abiogenesis?
8. What are the patterns of evolution seen in genes and genomes?
9. What is epigenetic inheritance?
10. What are agamo species?
11. Name the ovule of *Lyginopteris*
12. What is Form taxa?

(2 x 8 = 16)

Section B**Answer any 7 (5 marks each)**

13. Write down the features of the older stem in *Gnetum*.
14. Discuss the general characteristics of Podocarpaceae.
15. Briefly explain the stem anatomy of *Cordaites*.
16. Explain phenotypic variation. What are the sources of phenotypic variation?
17. Explain genetic divergence. What is its role in evolution?
18. Comment on:
 - (a) Topographic barriers
 - (b) Ecological barriers
19. Explain the mode of preservation of fossils
20. Differentiate Calamostachys and Calamites.
21. Give two examples for fossil binomial and what the name denote
22. Illustrate the life cycle of any typical gymnosperm.

(5 x 7 = 35)

Section C

Answer any 2 (12 marks each)

23. Write an account on the reproductive structure of Coniferales with suitable illustrations

OR

24. Describe on the development of male and female gametophyte in Pinus

25. Describe Miller's experiment and explain how it proves the biochemical theory of origin of life.

OR

26. Without isolation, there is no speciation. Justify this statement.

(12 x 2 = 24)