SET A

M.Sc. BOTANY
FIRST SEMESTER (REPEAT)
HIGHER CRYPTOGAMS, GYMNOSPERMS AND PALEOBOTANY
MSB-102

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. Full Marks: 70

Objective

Time: 30 mins. Marks: 20

Choose the correct answer from the following: *1×20=20*

1. According to the progressive reduction or simplification theory, the advanced sporophyte is present in:
   a. Anthoceros b. Riccia
   c. Funaria d. Marchantia
2. Pseudo-elaters are present in:
   a. Funaria b. Marchantia
   c. Anthocerous d. Riccia
3. Nostoc colonization can be seen on the lower ventral surface of:
   a. Marchantia b. Funaria
   c. Polytrichum d. Anthoceros
4. According to the progressive (up-Grade) Evolution theory, the first evolved bryophyte was:
   a. Sphaero-Riccia b. Sphaerocarpos
   c. Metzgeria d. Jungermanniales
5. Due to the progressive sterilization theory of potential fertile cell ,the highest number of sterile cells is found in:
   a. Marchantia b. Riccia
   c. Funaria d. Anthoceros
6. In Cycas, the endosperm is a:
   a. Post fertilization product and diploid b. Post fertilization product and haploid
   c. Pre fertilization product and diploid d. Pre fertilization product and haploid
7. Choose the true statement about fossilization from the given options.
   a. Fossilization is more common for the animals in forests and mountains compared to the animals from oceans and deserts b. Fossilization is a very common occurrence
   c. Small animals with very less weight are more likely to become fossils d. None of the above
8. This is the most commonly occurring ornamental species of Cycas:
   a. *Cycas revoluta* b. *Cycas beddomei*
   c. *Cycas circinalis* d. *Cycas rumphii*

9. Antheridia and archegonia are most reduced in:
   a. Bryophyta
   b. Selaginella
   c. Ferns
   d. Pinus

10. Winged seeds are present in:
   a. Pinus
   b. Cycas
   c. Papaver species
   d. None of the above

11. The first cycads appear in:
   a. Permian
   b. SIlurian
   c. Jurassic
   d. Cretaceous

12. Rhynia is a .....plant.
   a. Devonian
   b. Oligocene
   c. Ordovician
   d. Cambrian

13. To which of the following the genus Williamsonia belongs?
   a. Cycadales
   b. Coniferales
   c. Bennittitales
   d. Ginkgoales

14. In Psilotum the stele is:
   a. Haplostele type
   b. Eustele type
   c. Actinostele
   d. Plectostele

15. In Lycopodium, Isoetes and Equisetum:
   a. All are homosporous
   b. Isoetes and Equisetum are homosporous
   c. Lycopodium and Isoetes are homosporous
   d. Lycopodium and Equisetum are homosporous

16. Mature vascular bundles in Equisetum have a canal called:
   a. Carinal
   b. Central
   c. Valullar
   d. None

17. The innermost layer of sporangium of Selaginella is called as:
   a. Elaters
   b. Jacket
   c. Syngium
   d. Tapetum

18. Stem is polystelic in:
   a. Selaginella
   b. Pinus
   c. Cycas
   d. All of these

19. The following is the most primitive vascular plant:
   a. Ferns
   b. Sphagnum
   c. Cycas
   d. Psilotum

20. The chief function of induisium of the fern is:
   a. Protective
   b. To produce spores
   c. To produce sporophylls
   d. No function

-- --- --

Descriptive

Time : 2 hr. 30 mins. **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Discuss in detail the comparative morphology and reproductive study of gametophytes and sporophytes of bryophytes. 5+5=10
2. Write short notes on the followings: 5+5=10
   a) Classification of Bryophytes
   b) Origin of Bryophytes
3. Discuss in detail the anatomy of leaf of *Cycas* with proper diagrams. 10
4. Discuss in detail the anatomy of leaf of *Pinus* with necessary diagrams. 10
5. Describe in detail the occurrence and reproduction in *Williamsonia* with necessary illustrations. 10
6. Write the theories for origin of stele. Discuss about different types of stele with proper diagram. 2+8=10
7. Write the morphological differences in pteridophytes with proper examples. 10
8. Write the following answers: 5+5=10
   a) Anatomical differences between the plants of Lycopsida and Sphenopsida groups.
   b) Seed habit of Selaginella.

= = *** = =