REV-00
MSB/74/80

2016/12

M.Sc. BOTANY
First Semester
HIGHER CRYPTOGAMS: GYMNOSPERMS & PALAEBOTANY
(MSB - 102)

Duration: 3Hrs. **Full Marks: 70**

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins. **Marks: 50**

Answer any *four* from *Question no.* 2 to 8
***Question no.* 1 is compulsory.**

1. Explain the theory of "progressive reduction of potentially sporogenous tissue" in bryophytes. (10)
2. Describe the characters of Bryophytes and give an outline of their classification. (10)
3. What is pollution indicator? How bryophytes are used for monitoring the pollution indicator? (2+8=10)
4. Write an account on the soral evolution in different genera of Fern. (10)
5. Give an account of heterospory and origin of seed habit in Pteridophyte. (10)
6. Discuss the affinities and relationship of Ginkgoales with necessary examples. (10)
7. With neat labelled sketch write an illustrated account of the gametophyte of eusporangiate fern. (10)
8. What is fossilization process? Discuss different techniques of studying fossil plants. (10)

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Duration: 20 minutes **Marks – 20**

(PART A - Objective Type)

I. Choose the correct answer: **1×20=20**

a) Presence of air cavities in the stem of *Equisitum* indicates
(i) Xerophytic character (ii) hydrophytic character
(iii) mesophytic character (iv) halophytic character

b) According to fossil record available which of the following is considered as primitive land plant?
(i) Horsetails (ii) Cycadales
(iii) Psylophytales (iv) Lycopsidales

c) In Pteridophyte root leaf traces and leaf gaps are seen in_____(fill up gap)

d) *Rhynia* belong to which of the following geological period?
(i) Carboniferous (ii) Permian
(iii) Cambrian (iv) Devonian

e) Young sporophyte of fern draws nourishment from the prothallus through-
(i) haustoria (ii) foot
(iii) rhizoids (iv) root

f) Cycas and Pteris resembles each other in the presence of _____(fill up gap)

g) Which of the following plant is recognized as 'Living fossil'?
(i) *Ephedra alata* (ii) *Pinus wallichiana*
(iii) *Ginkgo biloba* (iv) *Gnatum gnemon*

h) Which of the following characters Angiosperm resembles Gymnosperm?
(i) presence of ovules (ii) presence of vessel
(iii) nature of endosperm (iv) mode of fertilization

i) A living example near telome is-
(i) Marshelia (ii) Adiantum
(iii) Osmunda (iv) Psilotum

j) In Polytrichum spore liberation was controlled by
(i) operculum (ii) columella
(iii) peristome (iv) annulus

k) Which of the following statement is wrong in case of Bryophyta?
(i) they lack trachieds and sieve tubes.
(ii) they are photosynthetic.
(iii) their zygote undergoes meiosis and then produces the sporophytes.
(iv) their spore germinate and produces gametophyte.

l) Obliquely septate rhizoids are present in which of the following?
(i) Riccia (ii) Marchantia
(iii) Funaria (iv) Anthoceros

m) Development of sporophyte from vegetative portion of prothellus is called-
(i) apospory (ii) apogamy
(iii) apomixis (iv) morphogenesis

n) Eustele is the characteristic of which of the following pteridophyte?
(i) Lycopodium (ii) Adiantum
(iii) Equisitum (iv) Selaginella

o) Trabacule of Selaginella ia a modified-
(i) pericycle cell (ii) epidermal cell
(iii) endodermal cell (iv) cortical cell

p) Which of the following characters of Gymnosperm resembles Angiosperm'?
(i) Presence of monoxylic or polyxylic secondary wood.
(ii) Majority of Angiosperms are homosporus.
(iii) Advantitious roots are found.
(iv) Integument is present.

q) Pteridosperms reaches their climax in
(i) coenozoic era (ii) Mesozoic era
(iii) paleozioc era (iv) Permian era(o)

r) *Willamsonia* represented five species in India and all of these have been reported from-
(i) Raj Mahal Hills (ii) Shivalik Hills
(iii) Vindhyam Range (iv) Nilgiri Hills

s) *Taxus bacata* yields an alkaloid known as-
(i) Taxotoxin (ii) Taxine
(iii) Ephedrine (iv) Taxol

t) Which of the following statement is wrong?
(i) Seed formation did not observed in Pteridophytes.
(ii) They did not contain conducting tissue.
(iii) Independent gametophyte and sporophyte are present.
(iv) Secondary growth occurs in Pteridophyte.

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