

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 742 E Your Roll No.....

Unique Paper Code : 216203

Name of the Course : B.Sc. (H) Botany

Name of the Paper : Biodiversity III : Archegoniatae [BTHT-203]

Semester : II

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt five questions in all.
3. Question No. 1 is compulsory.
4. All parts of a question must be attempted together.
5. Draw well labelled diagrams wherever necessary.

1. (a) Match the following : (1×5=5)

- | | |
|--------------------------|-----------------|
| (i) Whisk fern | <i>Pinus</i> |
| (ii) Girdle leaf trace | <i>Porella</i> |
| (iii) Amphigastria | <i>Psilotum</i> |
| (iv) Coenosorus | <i>Cycas</i> |
| (v) Winged pollen grains | <i>Pteris</i> |

(b) True or False : (1×5=5)

- (i) Spike mosse is *Funaria*.
- (ii) Chloroplast along with pyrenoids is present in each cell of thallus of *Anthoceros*.

P.T.O.

(iii) Absence of archegonium is a prominent feature of *Gnetum*.

(iv) Fern prothallus is a haploid structure.

(v) Resin ducts are features of *Cycas*.

(c) Fill in the blanks : (1×5=5)

(i) The absence of side veins in *Cycas* leaflet is compensated by _____ .

(ii) The spore producing organ in *Marsilea* is called _____ .

(iii) Stele with central solid core of xylem surrounded by phloem is called _____ .

(iv) Two species of *Rhynia* are _____ and _____ .

(v) Moss rhizoids are characterized by _____ septa.

2. Draw well labeled diagrams of any **three** : (3×5=15)

(i) T.S. needle of *Pinus*

(ii) L.S. sporophyte of *Marchantia*

(iii) L.S. ovule of *Gnetum*

(iv) T.S. stem of *Selaginella*

3. Write short notes on (**any five**) : (3×5=15)

(i) *Sphagnum* leaf

(ii) Branching pattern of *Pinus*

(iii) Telome theory

(iv) Manoxylic wood

(v) *Riccia* sporophyte

(vi) Heterospory and seed habit in *Selaginella*

4. (a) What is sulphur shower ? Name the plant where this phenomenon occurs. (4)
- (b) Write the botanical names of : (6×1=6)
- (i) An aquatic bryophyte
 - (ii) Chilgoza pine
 - (iii) Horse tail
 - (iv) A gymnosperm having motile male sperm
 - (v) A bryophyte having sporophyte with elaterophores
 - (vi) Resurrection plant
- (c) Give an illustrated account of gametophyte of *Porella* . (5)
5. Attempt the following questions :
- (a) Write two important differences between Gymnosperms and Angiosperms. (2)
- (b) Write a note on the affinities of *Gnetum*. How it is closely related to Angiosperms ? (8)
- (c) Write the ecological and economic importance of bryophytes. (5)
6. Attempt the following questions :
- (a) With the help of suitable diagrams, describe different type of steles in pteridophytes ? (8)
- (b) Why conifer wood is good for timber purpose ? Explain. (2)
- (c) Briefly describe double fertilization in gymnosperms. (5)

7. Attempt the following questions :

- (a) Draw well labeled diagram of transverse section of stem of *Equisetum* and describe hydrophytic and xerophytic characters found in stem anatomy only. (8)
- (b) What is alternation of generation ? How apogamy and apospory is deviated from common cycle. (7)