

Answer five questions in all, selecting atleast one question from each Selection, in which Q.No. 1 is compulsory.

1. From the following multiple choice questions choose the correct answer :

- (a) Most elaborate and complex thallus structure is found in :  
 (i) Chlorophyta (ii) Phaeophyta (iii) Cyanophyta (iv) Rhodophyta
- (b) The sources of Agar-agar is :  
 (i) Anabaena (ii) Ectocarpus (iii) Gelidium (iv) Porphyra
- (c) Isomorphic alternation of generations is found in :  
 (i) Ectocarpus (ii) Polysiphonia (iii) Chara (iv) Vaucheria
- (d) The reason why Bryophytes remain small whereas Pteridophytes can grow to a greater height because in pteridophytes :  
 (i) Spores get discharged by hygroscopic annulus  
 (ii) True xylem and phloem are developed  
 (iii) Photosynthesis occurs vigorously  
 (iv) Numerous rizoids are developed
- (e) Pellia and anthoceros show simplicity in the structure of thallus on account of :  
 (i) Simple external morphology (ii) Lack of tuberculate rhizoids  
 (iii) Lack of scales (iv) All of the above
- (f) The bryophyte, commonly called 'hornwort' is :  
 (i) Marchantia (ii) Polytrichum (iii) Anthoceros (iv) Pellia
- (g) Pteridophytes differ from bryophytes in having :  
 (i) Motile sperms (ii) Alternation of generation  
 (iii) Vascular tissue (iv) Archegonia
- (h) Trabeculae in Selaginella is regarded to have been derived from :  
 (i) Pericycle (ii) Endodermis  
 (iii) Inner layer of Cortex  
 (iv) Partly from endodermis and partly from pericycle
- (i) Telome concept for the origin of vascular plants was proposed by :  
 (i) Bower (ii) Eames (iii) Zimmermann (iv) Wardlaw
- (j) The fossil Rhynia was discovered from the geological period :  
 (i) Psilurian (ii) Devonian (iii) Permian (iv) Carboniferous

#### Section - A

2. Give an account of the range of thallus organization in algae, indicating their evolutionary relationship.
3. Describe the structure and reproduction in the nannandrous species of Oedogonium.
4. Write notes on any three of the following :  
 (a) Nucule of Chara (b) Cystocarp of Polysiphonia (c) Heterocyst (d) Algal blooms  
 (e) Spermocarp

#### Section-B

5. Evaluate critically the different theories of evolution of gametophytes in Bryophytes.
6. Give the salient features of Pellia and discuss its affinities.
7. Write notes on any two of the following :  
 (a) Gemma cup of Marchantia  
 (b) Economic importance of Bryophytes  
 (c) Capsule of Polytrichum (d) Leaf of Sphagnum

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8. What is heterospory ? Discuss the significance of heterospory in the establishment of seed habit.
9. Give an account of the salient features of Psilotum, emphasizing its primitive features.
10. Write explanatory notes on any two of the following :
  - (a) Homologous theory
  - (b) Sporocarp of Azolla
  - (c) Stem of Calamites
  - (d) Protocorm

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