

2018

BOTANY

( Major )

Paper : 1.1

( Plant kingdom, Algae and Fungi )

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Fill in the blanks with appropriate word(s) :

1×7=7

- (a) Cryophytes are found on \_\_\_\_.
- (b) Male reproductive structure of *Chara* is known as \_\_\_\_.
- (c) The Plaque stage of *Volvox* consists of \_\_\_\_ cells.
- (d) Reserved food material mannitol is found in the members of the class \_\_\_\_.
- (e) \_\_\_\_ is known as the father of Indian Mycology and Plant Pathology.

( 2 )

(f) The phenomenon of heterothallism was first discovered in the order \_\_\_\_.

(g) Mutual association between phycobiont and mycobiont represents the group \_\_\_\_.

2. Define the following terms :

2×4=8

(a) Haplo-diplobiontic life cycle

(b) Coenobium of *Volvox*

(c) Halophytes

(d) Hyphae and mycelium

3. Write briefly on any three of the following :

5×3=15

(a) Range of vegetative structure in algae

(b) Heterothallism in *Mucorales*

(c) Unilocular and plurilocular Sporangia in *Ectocarpus*

(d) Mode of nutrition in fungi

(e) Characteristic feature of blue-green algae

( 3 )

4. Answer any three of the following : 10×3=30

(a) Give an outline of Fritch's system of classification of algae. Mention the criteria adopted for the classification in this system. 6+4=10

(b) Describe briefly the structure and development of sex organs of *Chara* with the help of labelled diagram. 10

(c) What is diplobiontic life cycle? Give an account of the life cycle of *Polysiphonia* giving suitable diagrammatic representations. 2+8=10

(d) Write the diagnostic features of basidiomycetes. Differentiate between ascospores and basidiospores. 6+4=10

(e) What are imperfect fungi? Describe the structure and reproduction of *Colletotrichum falcatum*. Write the name and symptoms of the disease caused by it. 1+6+1+2=10

(f) Describe the classification of plant kingdom on the basis of their nutrition and ecological status. 5+5=10

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( Continued ) 19-5000/399

2018

BOTANY

( Major )

Paper : 1.2

( Bryophytes and Pteridophytes )

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks  
for the questions

1. Choose and write the correct answer :  $1 \times 7 = 7$

(a) Which one is commonly known as peat  
or bog moss?

(i) *Riccia*

(ii) *Marchantia*

(iii) *Polytrichum*

(iv) *Sphagnum*

(b) The thallus of *Riccia* is

(i) filamentous

(ii) dorsiventral

(iii) erect

(iv) climber

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( Turn Over )

- (c) In *Anthoceros*, the sporogenous tissue is derived from
- (i) endothecium tissue
  - (ii) gametophytic tissue
  - (iii) amphithecium tissue
  - (iv) None of the above
- (d) A bryophyte differs from pteridophyte in
- (i) archegonia
  - (ii) lack of vascular tissue
  - (iii) flagellated antherozoids
  - (iv) independent gametophytes
- (e) Protocorm is found in
- (i) *Lycopodium*
  - (ii) *Selaginella*
  - (iii) *Equisetum*
  - (iv) *Marsilea*
- (f) The earth's first forests were formed of plants belonging to
- (i) Psilopsida
  - (ii) Lycopsida
  - (iii) Sphenopsida
  - (iv) Pteropsida

- (g) Stele in *Selaginella* stem is
- (i) protostele
  - (ii) siphonostele
  - (iii) solenostele
  - (iv) dictyostele
2. Distinguish between the following :  $2 \times 4 = 8$
- (a) Amphithecium and Endothecium
  - (b) Pseudopodium and Vaginula
  - (c) Homosporous and Heterosporous
  - (d) Strobilus and Sporocarps
3. Answer any *three* of the following :  $5 \times 3 = 15$
- (a) Describe the thallus structure of *Riccia* and *Marchantia*.
  - (b) Distinguish between *Urostachya* and *Rhopalostachya*.
  - (c) Briefly describe the external structure of mature gametophore of *Sphagnum*.
  - (d) Describe briefly the stelar variation in the stem of *Lycopodium* species.
  - (e) Distinguish between the elaters of *Equisetum* and Bryophytes. Mention the function of elaters.  $3 + 2 = 5$

4. Answer the following questions : 10×3=30

- (a) Write an illustrated account of the sporophyte of *Polytrichum* with a neat diagram. 10

Or

Give an account on the affinities of *Anthoceros*.

- (b) Discuss the peculiarities found in the external features of *Selaginella*. Give a brief account of the morphological nature of rhizophore in *Selaginella*. 5+5=10

Or

Justify the statement, "*Psilotum* is a living fossil". 10

- (c) Define eusporangiate and leptosporangiate development of sporangia in pteridophytes. Describe with neat sketches the stages in the development of sporangium in *Adiantum*. 5+5=10

Or

Define parthenogenesis. Discuss in detail the phenomenon of apogamy in pteridophytes. 2+8=10

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