

**B.Sc. (Part—I) Semester—I Examination**  
**BOTANY**  
**(Diversity and Applications of Microbe and Cryptogams)**

Time : Three Hours]

[Maximum Marks : 80

- Note :—** (1) There are **seven** questions in all.  
(2) Question No. **1** is compulsory and carries **8** marks.  
(3) Question Nos. **2 to 7** carry equal marks.  
(4) Draw well labelled diagram wherever necessary.

1. (A) Fill in the blanks :

- (i) Mode of nutrition in algae is \_\_\_\_\_. ½  
(ii) Dwarf male filament is found in \_\_\_\_\_ alga. ½  
(iii) Telial stage is found in \_\_\_\_\_. ½  
(iv) First vascular cryptogams are \_\_\_\_\_. ½

(B) Choose correct alternative (MCQ) :

- (v) Male sex organ in Chara is known as :  
(a) Globule (b) Nucule  
(c) Spermatium (d) Carpogonium ½
- (vi) *Puccinia graminis* is :  
(a) Saprophyte (b) Autotrophic  
(c) Obligate parasite (d) Symbiont ½
- (vii) Vallecular canals are present in stem of :  
(a) *Marsilea* (b) *Adiantum*  
(c) *Equisetum* (d) *Selaginella* ½
- (viii) Spore bearing organ in *Marsilea* is called as :  
(a) Strobilus (b) Cone  
(c) Sporocarp (d) Synangium ½

(C) Answer in **one** sentence :

- (ix) Define Isogamy. 1  
(x) Name one famous Indian Bryologist. 1  
(xi) TMV stands for ? 1  
(xii) What is protostele ? 1

2. Explain :

- (a) General characters of cryptogams. 4  
(b) Structure of TMV. 4  
(c) Role of microbes in medicine. 4

**OR**

- (d) Binary fission in Bacteria. 4  
(e) Structure of HIV. 4  
(f) Role of microbes in agriculture. 4
3. Explain :  
(g) Thallus structure in *Oedogonium*. 4  
(h) Nucule in *Chara*. 4  
(i) Male receptacle in *Sargassum*. 4
- OR**
- (j) Thallus structure of *Batrachospermum*. 4  
(k) Globule in *Chara*. 4  
(l) Classification of Algae by G.M. Smith. 4
4. Explain :  
(m) Asexual reproduction in *Albugo*. 6  
(n) Economic importance in Lichens. 6
- OR**
- (o) Uredial and Telial stage in *Puccinia*. 6  
(p) Asexual reproduction in *Aspergillus*. 6
5. Explain :  
(q) T.S. Thallus of *Marchantia*. 4  
(r) L.S. of Antheridial head in *Funaria*. 4  
(s) L.S. of sporophyte in *Marchantia* (only diagram). 4
- OR**
- (t) L.S. of capule in *Funaria* (only diagram). 4  
(u) L.S. of Antheridiophore in *Marchantia* (only diagram). 4  
(v) Brief account on Indian Bryologist (any two). 4
6. Explain :  
(w) T.S. of *Marsilea* rhizome. 4  
(x) L.S. of strobilus in *Equisetum*. 4  
(y) Heterospory. 4
- OR**
- (a) T.S. stem in *Equisetum*. 4  
(b) H.L.S. sporocarp in *Marsilea*. 4  
(c) Types of Siphonostele. 4
7. Explain :  
(d) Economic importance of Algae in food and industry. 6  
(e) Black arm of cotton. 6
- OR**
- (f) Role of fungi in food and agriculture. 6  
(g) Type and application of mycorrhiza. 6