

2009

M.Sc.

1st Semester Examination

MICROBIOLOGY

PAPER—II

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer any two questions from each group.

Group—A

[Marks : 20]

Answer any two questions.

1. Answer any four of the following : **$2\frac{1}{2} \times 4$**

- (i) Distinguish between bipolar and tetrapolar heterothallism.

(Turn Over)

- (ii) Describe role of fungi in dairy industry.
- (iii) Draw labelled sketch of the internal structure of lichem.
- (iv) Describe the impact of fungi on ecosystem.
- (v) Why Cyanophyceae is considered as prokaryote?.
2. Give salient features of the class Zygomycotina. Draw and describe sexual reproduction of *Aspergillus*. What is Aspergillosis? 3+2+3+2
3. What do you mean by endophytic fungi? Describe their pharmaceutical utilities. Describe the hydrolytic enzymes produced by phycomycetious fungi. 2+4+4

Group—B

[Marks : 20]

Answer any two questions.

4. (a) What is the significance of naming the 'Red Sea'?
- Name two heterocystic and non-heterocystic members of cyanophyceae.
- Why do the cyanophyceae members have no sexual reproduction?

- (b) Mention the names of two parasitic and two phytoplanktonic algal genera.

What are the names of the gametes which have cell wall and have no cell wall like structure? Where do you see them? How could they unite?

(2+2+1)+(2+1+1+1)

5. (a) Write the economic importance of Silica Gel. Diagrammatically represent Auxospore formation in Diatoms when two cells conjugating to form two Auxospores. 2+3

- (b) Define alternation of generations. Cite examples. Schematically represent the life cycle of *Vaucheria* sp and mention the generations. 1+1+3

Or

Diagrammatically represent different types of sexual reproduction with suitable examples. 3+2

6. Answer any *five* of the following : 5×2

- (a) What is complementary chromatic adaptation?
- (b) Name the major pigments in red algae and two major commercial products of these groups.
- (c) Comment on *Spirulina* as food supplement.

(d) Write the photosynthetic pigments of :

(i) *Nostoc* sp ;

(ii) *Ectocarpus* sp.

(e) Mention the functions of the following :

(i) Stigma ;

(ii) Pneumatocysts ;

(iii) Conceptacle ;

(iv) Tetrasporangium.

(f) What is the role of algae in soil fertility management ?
