2008

MICROBIOLOGY

PAPER—II

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

GROUP—A

(*Mycology*)

Answer **Q. No. 1** and any *one* from the rest questions

1. Write short notes on (any *four*): $2\frac{1}{2} \times 4$

   (*i*) Clamp connection

   (*ii*) Medicinal importance of lichen

   (*iii*) Cell wall of fungi

   (*iv*) Ascocarp

   (*v*) Torula state of *Mucor*.

2. Draw and describe the process of Ascus formation. Name each of an aquatic fungi, coprophilous fungi and endophytic fungi. What roles are generally played by spitzencorper in fungal growth? $2 + 3 + 3 + 2$

3. Draw and describe the life cycle of *Agaricus* sp. What is VAM? What are their utilities? Write down with diagram the inner structures in gills of *Agaricus*. $2 + 3 + 1 + 2 + 2$

GROUP—B

(*Phycology*)

Answer any *two* from the following

4. (*a*) Which group of algae shows their resemblance with that of Rhodophyceae and in which respect? How the deep sea (more than 100 m depth) benthic algal members (Rhodophyceae) could survive? Some members of Red algae are not red—why? What are the members and where are they found?

(*b*) How many types of auxospore formation have been found in Diatoms? Represent sexual auxospores formation with suitable diagram. Write their nuclear behaviour.

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

5. (*a*) Write the names of different classes of algae as proposed by Fritsch (1935, 48). Mention important class characters with examples for each class.

(*b*) Write the salient features of Euglenophytes. Cite examples of autotrophic and heterotrophic Euglenophytes that you have studied. "Some members of Euglenophytes devoid of chloroplast and eyespots" — Why ?

(2 + 3) + (2 + 1 + 2)

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

(*a*) Schematically represent life-cycle of *Vaucheria* sp. or *Sargassum* sp.

(*b*) Write the structural and functional features of the stigma of chlorophyceae.

(*c*) Write the contribution of algae in SCP production.

(*d*) Cite the examples of the following nutritional types of algae :

(*i*) Parasitic

(*ii*) Epiphytic

(*iii*) Symbiotic

(*iv*) Epizoic.

(*e*) What is triphasic alternation of generations? Write only the names of the phases.

(*f*) What do you mean by reduplication of generations (both sporophytic and gametophytic) in case of *Ectocarpus* sp.

(*g*) Write the economic importance of *Tolypothrix tunis* and *Alorira fertillissma*.

(*h*) Mention the diagnostic characters of the cells of Prochlorons or BGA (Coccoids).
