

AU-252

M.Sc. (Part-I) Semester-I (C.B.C.S. Scheme) Examination

MICROBIOLOGY

(Microbial Physiology and Photosynthesis)

Paper—III

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory.

(2) Draw diagrams wherever necessary.

1. Describe in detail chemical organization of the plasma membrane. 16

OR

(i) Summarize the fluid mosaic model of unit membrane structure. 8

(ii) Illustrate mobile hypothesis of receptors. 8

2. (a) Schematically represent adenosine triphosphate (ATP) cycle. 8

(b) Describe high energy phosphate groups. 8

OR

(c) Describe the concept of free energy. 8

(d) Explain ATP as currency of free energy in living cell. 8

3. Describe electron transport chain in bacteria in detail. 16

OR

Discuss the enzymology of oxidation reduction potential. Describe respiration linked proton translocation. 16

4. (a) State and explain the coupling of oxidative phosphorylation to electron transport. 8
(b) Discuss enzymes involved in biological oxidations and reductions. 8

OR

- (c) Explain mechanism of oxidative phosphorylation in brief. 8
(d) Differentiate between the uncouplers and inhibitors. 8
5. (a) Explain structure of photosynthetic pigments. 8
(b) Describe anoxygenic photosynthesis. 8

OR

- (c) Comment on PS I, PS II and electron transport. 8
(d) Explain CO_2 fixation in bacterial photosynthesis. 8