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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 Permeable nature of plasma membrane. 16

OR

Explain in detail active transport and membrane bound protein transport system. 16

2. (a) Explain ATP cycle in detail. 8

(b) Describe high energy phosphate groups. 8

OR

(c) Describe the concept of free energy. 8

(d) Comment on conventions in biochemical energetics. 8

3. Describe in detail organization of respiratory chain in mitochondria and explain its role in energy capture. 16

OR

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

4. (a) Elaborate the reactions of oxidative phosphorylation. 8

(b) Define coupling. Comment on chemical and conformational coupling. 8

OR

(c) Describe in brief mechanism of oxidative phosphorylation. 8

(d) Describe inhibitors of the respiratory chain. 8

5. (a) Give detailed account on photosynthetic pigments. 8

(b) Explain electron transport in photosystem I and photosystem II. 8

OR

(c) Explain CO_2 fixation in bacterial photosynthesis. 8

(d) Describe anoxygenic photosynthesis. 8

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