

M.Sc. (Part-I) Semester-I (C.B.C.S. Scheme) Examination
BIOCHEMISTRY
(Bio-Energetics and Biological Oxidation)
Paper-IV

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory and carry equal marks.

(2) Draw the figures and diagrams wherever necessary.

1. Give a detailed account of concept of free energy. 16

OR

What are First and Second Laws of Thermodynamics ? How are they applied to Biological system ? 16

2. Discuss the following :

- (a) Mitochondrial organisation. 6
- (b) Sequence of electron carriers. 5
- (c) Factors affecting ETC. 5

OR

- (p) Reversible ETC. 6
- (q) Site of oxidation phosphorylation. 5
- (r) Non heme iron binding proteins. 5

3. Write in short about :

- (a) Uncouplers of energy transfer. 6
- (b) Theories of oxidative phosphorylation. 5
- (c) ATP synthetase complex. 5

OR

- (p) Inhibitors of energy transfer. 6
- (q) F_1-F_5 ATPase. 5
- (r) Mechanism of oxidative phosphorylation. 5

4. What do you know about following ? Describe in short :

- (a) Ultra structure of chloroplast. 6
- (b) Photo respiration. 5
- (c) Photosynthetic electron transport. 5

OR

- (p) Light harvesting complexes. 6
- (q) Photosystem I and II. 5
- (r) Location and mechanism of energy transfer. 5

5. Describe cyclic and non-cyclic photophosphorylation in detail. 16

OR

What is photoregulation ? Discuss in detail. 16

