AQ – 842

First Semester M. Sc. (Part–I) Examination

BIOCHEMISTRY

Paper – IV

(Bio – Energetics and Biological Oxidation)

P. Pages : 3

Time : Three Hours] [Max. Marks : 80

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

(2) Draw the figures and diagram wherever necessary.

1. Discuss the following :—

(a) Free energy. 5

(b) ATP. 5

(c) First law of thermodynamics. 6

OR

(p) Measurement of free energy. 5

(q) Application of second law of thermodynamics. 5

(r) Phosphorylation potential. 6

2. Write short note on the following :—

(a) Mitochondrial organization. 6

(b) Heme binding proteins. 5

(c) Respiratory control. 5

OR

(p) Redox potential. 5

(q) Sequence of electron carrier. 5

(r) Factor's affecting ETC. 6

3. What is oxidative phosphorylation ? Describe the mechanism and site of ATP synthasis in detail. 16

OR

(a) ATP synthetase complex. 8

(b) Uncoupler's and inhibitors of energy transfer. 8

4. Explain the following :—

(a) Ultrastructure of chloroplast. 5

(b) Light harvesting complexes. 5

(c) PS – I and PS – II. 6

OR

(p) Location and mechanism of energy transfer. 5

(q) Photosynthetic ETC. 5

(r) Photorespiration. 6

5. Describe cyclic and Non – cyclic photo – phosphorylation in detail.

OR

What is photo – phosphorylation ? Describe the molecular mechanism of photophosphorylation. Add a note on photoregulation. 16