

B.Sc. (C.B.C.S. Pattern) Sem-III  
**Biotechnology Paper-I : Cell Metabolism**

P. Pages : 2

Time : Three Hours



**GUG/S/19/11618**

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Discuss high energy bands with respect to the structure of phosphoenolpyruvate and creatine phosphate. 10

**OR**

- a) Draw the ATP-ADP cycle. 5
- b) Discuss relation of energy charge with respect to metabolic regulation. 5

2. Discuss in detail electron Transport chain. 10

**OR**

- a) Give the energetics of TCA cycle. 5
- b) Give difference between glycogenesis and glycogenolysis. 5

3. Give  $\beta$  oxidation of fatty acid in detail. 10

**OR**

Discuss the following diseases of fat metabolism.

- a) Fabry's disease. 5
- b) Niemann Pick disease. 5

4. Give the biosynthesis of 10

- a) Purines
- b) Pyrimidine.

**OR**

- a) Draw the Urea cycle. 5
- b) Give metabolic disorder of urea cycle. 5

5. Answer **any ten** (1 mark each)

- a) Define entropy. 1

- b) Define enthalpy. 1
- c) Define redox potential. 1
- d) What is Gluconeogenesis. 1
- e) Give any two inhibitors of glycolytic pathway. 1
- f) What is the total number of ATP synthesized in TCA cycle. 1
- g) Define Ketogenesis. 1
- h) Define ketoacidosis. 1
- i) What is the complication of Gaucher disease. 1
- j) What are important products of decarboxylation. 1
- k) What is the process of formation of new amino acids called. 1
- l) What is transmethylation. 1

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