

B.Sc. (CBCS Pattern) Semester - III
011A - Biotechnology Paper-I : Cell Metabolism

P. Pages : 2

Time : Three Hours



GUG/S/23/11618

Max. Marks : 50

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

1. Explain phosphate potential and its relation to metabolic regulation. **10**

OR

a) Discuss enthalpy with suitable example. **2½**

b) Give an account on high energy bonds in creative phosphate. **2½**

c) Add a note on ATP cycle. **2½**

d) Explain redox potential. **2½**

2. Describe in detail glycolysis pathway with flowsheet diagram. **10**

OR

a) Write a note on Glyconeogenesis. **2½**

b) Discuss energetics of TCA cycle. **2½**

c) Explain in brief CO₂ fixation. **2½**

d) Explain the concept of glycogenolysis. **2½**

3. Describe β oxidation of fatty acids in detail. **10**

OR

a) Describe fatty acid synthase complex. **2½**

b) Explain Ketoacidosis. **2½**

c) Add a note on Gaucher's disease. **2½**

d) Discuss w oxidation of fatty acids in brief. **2½**

4. Explain the mechanism of transamination in detail. **10**

OR

a) Add a note on metabolic disorders of urea cycle. **2½**

- b) Explain decarboxylation with suitable example. 2½
- c) Give in short biosynthesis of purines. 2½
- d) Describe in short linkage of urea and TCA cycle. 2½

5. Attempt any ten.

- a) What is free energy. 1
- b) Define entropy. 1
- c) Give full form of ATP ? 1
- d) Who discovered TCA cycle ? 1
- e) What is the end product of electron transport chain ? 1
- f) Define glycogenesis. 1
- g) What is Ketogenesis. 1
- h) Give the symptom of Niemann pick disease. 1
- i) Give names of two saturated fatty acids. 1
- j) What is urea cycle ? 1
- k) Give the names of two pyrimidines. 1
- l) Give the importance of decarboxylation. 1
