

Bachelor of Science (B.Sc.) (CBCS Pattern) Third Semester  
**Biotechnology Paper – I : Cell Metabolism**

P. Pages : 2

Time : Three Hours



**GUG/W/18/11618**

Max. Marks : 50

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1. Describe ATP – ADP cycle in details. **10**

**OR**

a) Discuss Enthalpy in brief. **2½**

b) What is Redox potential. Explain. **2½**

c) Describe the detailed structure of creatin phosphate. **2½**

d) Explain in brief about phosphate potential. **2½**

2. Describe TCA cycle in details along with its Regulation. **10**

**OR**

a) Give outline of Glycolytic pathway. **2½**

b) Describe bypass reactions of Gluconeogenesis. **2½**

c) What is photophosphorylation. Explain in brief. **2½**

d) What is Glycogenolysis & Glycogenesis Discuss. **2½**

3. What is oxidation of Fats? Discuss in details about  $\beta$ -oxidation. **10**

**OR**

a) Describe structure of fatty acyl – synthase complex. **2½**

b) What is Ketogenesis. Explain. **2½**

c) Add a note on Niemann – Pick’s disease. **2½**

d) Add a note on Gaucher’s disease. **2½**

4. What is Transamination? Describe its mechanism in details. **10**

**OR**

a) Discuss the regulation of urea cycle. **2½**

b) Explain purine biosynthesis in brief. **2½**

c) What is Transmethylation, Explain. **2½**

d) Add a note on salvage pathway of purine synthesis. **2½**

- 5. Solve any ten.**
- a) Define free energy. **1**
  - b) High Energy bond in phosphoenolpyruvate. **1**
  - c) Write any two high energy phosphate compounds. **1**
  - d) Define Gluconeogenesis. **1**
  - e) What is oxidative phosphorylation? **1**
  - f) What is Hill's reaction. **1**
  - g) What are saturated fatty acids give example. **1**
  - h) What is Ketosis. **1**
  - i) Write the names of ketone bodies. **1**
  - j) What is urea cycle. **1**
  - k) What is decarboxylation. **1**
  - l) Write any two important products of decarboxylation. **1**

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