

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

P. Pages : 2

Time : Three Hours



**GUG/W/23/11618**

Max. Marks : 50

---

**1.** Give the detailed account on ATP-ADP cycle. **10**

**OR**

- a) Discuss the concept of high energy rich phosphate bonds. **2½**
- b) Write a note on Redox potential. **2½**
- c) Explain the concept free energy. **2½**
- d) Explain in brief energy charge and its potential to metabolic regulation. **2½**

**2.** Explain in detail glycolysis pathway and its regulation. **10**

**OR**

- a) Write a note on glycogenolysis. **2½**
- b) Discuss the Hill reaction. **2½**
- c) Write a note on oxidative phosphorylation. **2½**
- d) What is by pass reaction? Explain. **2½**

**3.** Explain in detail biosynthesis of fatty acid and fatty acid synthase complex. **10**

**OR**

- a) Write a note on ketoacidosis. **2½**
- b) Explain in brief Gaucher's disease. **2½**
- c) Discuss Fabry's disease. **2½**
- d) Write a note on oxidation of fatty acid. **2½**

**4.** Discuss the biosynthesis of purines and pyrimidine in detail. **10**

**OR**

- a) Write a note on transamination. **2½**
- b) Give the important product of decarboxylation. **2½**
- c) Give the outline of urea cycle. **2½**
- d) What is transmethylation? Explain. **2½**

- 5.
- a) Write the full form of ATP. 1
  - b) What is entropy? 1
  - c) Define redox potential. 1
  - d) Write down the site of Electron transport chain. 1
  - e) Which enzyme synthesizes ATP? 1
  - f) Define gluconeogenesis. 1
  - g) Give the importance of fatty acid in cellular activity. 1
  - h) What is ketoacidosis. 1
  - i) Give the symptoms of Tay-Sachs disease. 1
  - j) Write the metabolic disorder of urea cycle. 1
  - k) What is decarboxylation. 1
  - l) Give the example of pyrimidine. 1

\*\*\*\*\*