Bachelor of Science (B.Sc.) Third Semester (Old)

B.Sc. 2371 - Biotechnology Paper-I (Cell Metabolism)

P. Pages : 2 **GUG/W/18/1276**

Time : Three Hours * 0 9 8 9 * Max. Marks : 50

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

1. Discuss the concept of high energy bonds as related to the structure of phosphoenolpyruvate. **10**

OR

Describe in detail TCA cycle with diagrammatic representation. **10**

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

OR

Discuss about transmethylation and decarboxylation. **10**

3. a) Discuss the concept of energy charge. **2½**

b) Give an account on Gluconeogenesis. **2½**

c) Describe the disease Tay-Sachs disease. **2½**

d) Give an account on metabolic disorders of urea cycle. **2½**

OR

e) Discuss about enthalpy and its importance for living system. **2½**

f) Describe CO_2 fixation pathway in short. **2½**

g) Give the outline of pathway for the biosynthesis of fatty acids. **2½**

h) Discuss mechanism of transamination in sheet. **2½**

4. a) Discuss the concept of free energy with example. **2½**

b) Write short note on phosphorylation. **2½**

c) Discuss about disease fat metabolism with respect to Fabry's disease. **2½**

d) What are various physiological products of decarboxylation. **2½**

OR

e) Discuss in short ATP-ADP cycle. **2½**

f) Draw a diagrammatic representation of ETC. **2½**

g) Give an account on Ketoacidosis. **2½**

h) Discuss in short biosynthesis of pyrimidine. **2½**

5. Attempt **any ten.**

a) Give full form of ATP. **1**

b) What is phosphate potential. **1**

c) What is importance of energy rich bonds in biomolecules. **1**

d) What is the site of electron transport chain. **1**

e) Which enzyme is responsible for ATP synthesis. **1**

f) What is the product of CO_2 fixation? **1**

g) Write down the precursor of fatty acid biosynthesis? **1**

h) What is Ketoacidosis? **1**

i) Name two diseases of fat metabolism? **1**

j) Name the first product of TCA cycle? **1**

k) Name the cycle for biosynthesis of purines. **1**

l) Write down formula of urea. **1**

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