(i) Printed Pages : **4**] Roll No. .....

(ii) Questions : **9**] **Sub. Code :** 0 9 7 2

Exam. Code : 0 0 3 5

B.Sc.(Hons.) 3rd Semester Examination

1127

BIOTECHNOLOGY
(Biochemistry)
Paper : BIOT-Sem-III-I-T

Time : 3 Hours] **[Max. Marks : 67**

Note :– (i) Attempt *five* questions in all.

(ii) Q. No. **1** is compulsory and consists of short answer type questions.

(iii) Attempt *four* questions from Units I, II , III and IV; selectiong *one* question from each Unit.

(Compulsory Questions)

1. Short answer questions :

(i) What are Coupled Reactions ?

(ii) What is the difference between oxidative phosphorylation and substrate level phosphorylation ?

(iii) Write down the importance of Salvage Pathway.

(iv) What are Porphyrins ?

(v) Write down inhibitors of Electron Transport Chain.

(vi) What are Glucogenic and Ketogenic Amino Acids ?

(vii) Why is TCA cycle called Amphibolic Cycle ?

(viii) Name the organelle where Urea Cycle, TCA Cycle, Fatty Acid Oxidation takes place.

(ix) What are Uncouplers ?

(x) What is Cori Cycle ? 1½×10=15

Unit–I

2. (a) Write down the Vitamin precursors of the activated carriers involved in Metabolism.

(b) Explain the types of chemical reactions involved in Metabolism. 5,8

3. (a) Explain the process of regulation of metabolism pathways.

(b) Write down the importance of ATP and explain the structural basis of high phosphoryl transfer potential of ATP. 8,5

Unit–II

4. (a) Write down the various steps involved in Glycolysis. Also calculate the number of ATP molecules generated under aerobic as well as anaerobic condition.

(b) Explain Pyruvatae Dehydrogenase Complex. 8,5

5. (a) Explain the mechanism of oxidative phosphorylation.

(b) What are the various steps involved in Glycogenolysis ? 8,5

Unit–III

6. Write short notes on the following :

(a) Role of carnitine in fatty acid oxidation

(b) Oxidation of odd chain fatty acids

(c) Structure of fatty acid synthase 5,4,4

7. (a) Explain synthesis of Cholesterol.

   (b) Write short note on formation of ketone bodies. 8,5

Unit–IV

8. (a) Explain the various steps involved in urea cycle.

   (b) Write down the general reactions involved in amino acid metabolism. 8,5

9. Write short notes on the following :

   (a) De Novo pathway of pyrimidine biosynthesis

   (b) Breakdown of Heme 8,5