Roll No. ..... Total Pages : 3

GSE/M-21 **1504**

BIOTECHNOLOGY

(Biochemistry-II)

Paper–IV

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all. Question no. 1 is compulsory. Attempt any *two* questions from each of the Unit I and II. All questions carry equal marks.

Compulsory Question

1. Define the followings :

(a) Transition state.

(b) Transferase enzymes.

(c) Km.

(d) Oxidative deamination.

(e) Ketogenic amino acids.

(f) Gluconeogenesis.

(g) Temperature optima.

(h) Coupled reaction. (1×8=8)

UNIT–I

2. (a) How are the enzymes highly specific for the reaction they catalyse and substrate they act upon ? 4

(b) Classify enzymes based on the reaction catalyzed by them. Give atleast *one* example of each class. 4

3. (a) Draw M.M. graph for unisubstrate reaction catalyzed by an enzyme and explain how does it change in presence of different types of reversible inhibitors. 4

(b) Describe general characteristics of allosteric enzymes which make them different from other enzymes. 4

4. (a) Draw structure and role of pyridoxine as coenzyme. 4

(b) Give an account of biochemical functions of Vitamin A. 4

UNIT–II

5. (a) 'Anabolism is not simple reversal of catabolism'. Explain. 4

(b) How is glucose metabolized under anaerobic conditions ? 4

6. Write the reactions of fatty acid oxidation to acetyl CoA. Mention the names of enzymes catalyzing these reactions, coenzymes involves and energy exchanged. 8

7. Write the reactions catalyzed by any *four* of the following enzymes and the coenzymes involved.

Isocitrate dehydrogenase.

Pyruvate dehydrogenase.

Glycogen phosphorylase.

Aspartate transaminase.

Arginosuccinate Lyase.

Acetyl CoA carboxylase. (2×4=8)