Bachelor of Science (B.Sc.- Part-II) Fourth Semester

B.Sc. 2481 - Biochemistry Paper-I (Enzymology)

P. Pages : 2 **GUG/W/18/1280**

Time : Three Hours * 0 9 9 3 * Max. Marks : 50

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

1. Write a note on:

a) Classification and Nomenclature system of enzyme. **5**

b) Enzyme Catalysis. **5**

OR

What are coenzymes? Discuss in detail Functions of riboflavin, thiamine & Biotin as a co-enzyme. **10**

2. Discuss in detail competitive and Non-competitive inhibition of Enzyme. **10**

OR

Discuss the methods of purification of enzyme based on molecular size. **10**

3. a) Explain lock and key model of enzyme action. **2½**

b) How enzyme concentration affects the rate of reaction? **2½**

c) Write Michaelis-Menten equation & explain the terms V_o, V_{max}, & K_m . **2½**

d) Write short note on enzyme immobilization. **2½**

OR

e) Explain induce fit theory of enzyme action. **2½**

f) How temperature affects the enzyme action? **2½**

g) Explain ping-pong mechanism of bi-substrate enzymatic reaction. **2½**

h) Write about medical applications of enzymes. **2½**

4. a) Explain how regulatory enzyme undergo covalent modification. **2½**

b) Explain mechanism of action of chymotrypsin. **2½**

c) Explain effects of pH on enzyme action. **2½**

d) Effect of enzyme purity on enzyme activity? **2½**

OR

e) Explain acid-base catalysis. **2½**

f) Explain the role of Pyridoxal phosphate as a co-enzyme in metabolic pathways. **2½**

g) Give significance of K_{cat}/K_m. **2½**

h) What is mean by enzyme assay? Give its significance. **2½**

5. Attempt **any ten** of the following. **10**

a) Define co-factor?

b) What is Proximity effects.

c) Define active site of enzyme.

d) What is enzyme saturation.

e) Define Zymogen.

f) Define iso-enzyme.

g) What is coenzyme form of Niacin.

h) Define temperature quotient.

i) Define turnover number.

j) Name the two chemical which will breaks disulphide bonds between two polypeptide.

k) What is salting out.

l) Define specific activity of enzyme.

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