



JV-003-001529

Seat No. _____

B. Sc. (Biochemistry) (Sem. V) (CBCS) Examination

October - 2019

Enzymology : BC - 501

Faculty Code : 003

Subject Code : 001529

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Answer the following questions : 20

- (1) Define Katal.
- (2) Name the enzyme which has highest catalytic activity.
- (3) Why enzyme experiments should be carried out in cold conditions ?
- (4) What will be first digit number of enzyme Aminotranfarases. Why ?
- (5) Define prosthetic group.
- (6) Name any one metalloenzyme.
- (7) Define Nucleophile.
- (8) Define zymogen.
- (9) In which two methods of enzyme purification mixture of ampholytes is used ?
- (10) Name any two methods of enzyme purification based on polarity of enzyme.
- (11) Give two reasons why one should isolate and purify enzyme.
- (12) How will you isolate membrane bound enzyme ?
- (13) Give example of enzyme obeying ordered single displacement reaction.

- (14) State any one assumption made to derive Michaelis and Mentens equation.
- (15) Define K_m .
- (16) Define Allosteric enzyme.
- (17) In acute pancreatitis which enzyme is raised in first five days ?
- (18) Which chemical is frequently used to carry out cross linking in enzyme immobilization ?
- (19) Which two enzymes are used in the preparation of sugar syrup ?
- (20) Which enzyme inhibitor is used in the treatment of gout ?

2 (a) Answer any **three** of the following questions : **2×3=6**

- (1) Write the role of metal ion in metalloenzyme.
- (2) What is the function of Active site in enzyme structure ?
- (3) What do you mean by activation energy ?
- (4) Write the effect of un-competitive inhibition on V_{max} and K_m .
- (5) Write the use of enzymes in detergents.
- (6) Giving example explain importance of isoenzymes in diagnosis of disease.

(b) Answer any **three** of the following questions : **3×3=9**

- (1) Write a short note on hydrolases and ligases.
- (2) By Using a diagram show the mechanism of acid-base catalysis.
- (3) Discuss major difference between competitive and non competitive inhibition.
- (4) How enzyme activity can be regulated through zymogen formation ? Explain giving example.
- (5) Write the use of enzymes in measurement of any one metabolite.
- (6) Briefly explain the concept of isoenzyme by using lactate dehydrogenase as an example.

(c) Answer any **two** of the following questions : **5×2=10**

- (1) Giving example explain regulation of enzyme activity through covalent modification.
- (2) Explain geometric specificity with example.
- (3) Describe in detail Ion-exchange chromatography.
- (4) Differentiate chemical catalyst and biocatalyst.
- (5) Write a short note on clinical enzymology of liver disease.

3 (a) Answer any **three** of the following questions : **2×3=6**

- (1) Define enzyme unit.
- (2) What do you mean by turn over number ?
- (3) Briefly state different problems which arises in use of affinity chromatography for enzyme purification.
- (4) Why should one isolate and purify enzymes ?
- (5) Which techniques you would use to isolate NAD and NADP dependant dehydrogenize, also explain principle of the method ?
- (6) Give two assumptions based on which initial velocity formula was derived.

(b) Answer any **three** of the following questions : **3×3=9**

- (1) Write a note on IUB scheme of enzyme classification.
- (2) Explain covalent catalysis in brief.
- (3) Which salt is used for enzyme purification and how ?
- (4) Briefly explain differential centrifugation in separating sub cellular organelles.
- (5) Briefly explain Ping Pong mechanism giving example.
- (6) Give a brief account on biosensors.

(c) Answer any **two** of the following questions : **5×2=10**

- (1) Write about Affinity chromatography.
 - (2) Explain the thermolability and alteration of enzyme specificity of enzymes.
 - (3) Explain the classification of enzymes based on the substance hydrolysed and group involved.
 - (4) Derive Michaelis-Menton kinetics equation for enzyme catalyzed reactions.
 - (5) Write about use of micro organisms in brewing and cheese making.
-