



RN-003-001529

Seat No. _____

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

February - 2019

Enzymology : Paper - 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) Define electrophile with examples
- (2) What do you mean by absolute specificity of enzyme? Give example
- (3) How will you homogenize the mammalian tissue for enzyme extraction?
- (4) What is R and T state in allosteric enzyme?
- (5) Enlist various body fluids used for diagnosis and mention their locations in our body.
- (6) Define activation energy

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

- (1) Explain colloidal nature of enzyme.
- (2) Write the significance of proximity and orientation in enzyme catalysis.
- (3) Write any three differences between differential and density gradient centrifugation used for enzyme purification.
- (4) Draw a well labeled figure of double reciprocal plot and show K_m and V_{max} .
- (5) Write in brief about the enzyme creatine kinase and its significance in diagnosis.
- (6) Write a note on IUB scheme of enzyme classification

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

- (1) Explain hydrolases, ligases and transferases with suitable examples.
- (2) Explain general acid base catalysis.
- (3) Describe various methods based on change in solubility of enzymes for its purification.
- (4) Write a short note on types of Bisubstrate reactions.
- (5) Describe in detail about the various methods used for enzyme immobilization.

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

- (1) Define katal
- (2) Define Metalloenzyme.
- (3) How different dyes help in enzyme purification?
- (4) State effect of competitive inhibitor on K_m and V_{max} of enzyme.
- (5) How different enzymes are used in the process of cheese making?
- (6) Which chromatographic method is used for separation of non polar molecules? Write in brief about that method.

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

- (1) Write a short note on multi enzyme complex with example
- (2) Write a note on induced fit model
- (3) Write any three differences between chromatofocusing and isoelectric focusing.
- (4) Give significance of K_{cat} and K_{cat}/k_m values.
- (5) Write in brief about the principle and working of biosensor.
- (6) Giving example describe irreversible inhibitor.

(C) Answer Any **Two** of the following questions : **5×2=10**

- (1) Explain isoenzyme with example in detail
 - (2) Explain covalent catalysis.
 - (3) Describe in detail about the enzyme purification method which is based on the biological specificity of compound.
 - (4) Derive MM equation for enzyme catalysed reaction.
 - (5) Describe in detail about the liver function test.
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