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**RN-003-1015029** Seat No. _____

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

**February - 2019**

## Enzymology : Paper - 501

*(New Course)*

**Faculty Code : 003**

**Subject Code : 1015029**

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

**1** (A) Write the correct answer for the following questions : **4**

(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 ?

(B) Write the Answer in Brief : (Any **One** out of Two) **2**

(1) Give full form of IUBMB.

(2) Define Turnover number of enzyme.

(C) Write the Answer in detail : (Any **One** out of Two) **3**

(1) Explain colloidal nature of enzyme.

(2) Write a note on induced fit model.

(D) Write Short note in detail : (Any **One** out of Two) **5**

(1) Explain hydrolases, ligases and transferases with suitable examples.

(2) Explain isoenzyme with example in detail

**2** (A) Write the correct answer for the following questions : **4**

(1) Define prosthetic group.

(2) Name any one metal activated enzyme.

(3) Define Nucleophile.

(4) Define zymogen.

(B) Write the Answer in Brief : (Any **One** out of Two) **2**

(1) State two coenzymes with their vitamin names involved in transfer of electrons.

(2) Define Metalloenzyme.

(C) Write the Answer in detail : (Any **One** out of Two) **3**

(1) Write the significance of proximity and orientation in enzyme catalysis.

(2) Write a short note on multi enzyme complex with example.

(D) Write Short note in detail : (Any **One** out of Two) **5**

(1) Explain general acid base catalysis.

(2) Explain covalent catalysis.

**3** (A) Write the correct answer for the following questions : **4**

(1) In which two methods of enzyme purification mixture of ampholytes is used?

(2) Name any two methods of enzyme purification based on polarity of enzyme.

(3) Give two reasons why one should isolate and purify enzyme.

(4) Which factors one should keep in mind for selection of source of enzyme ?

(B) Write the Answer in Brief : (Any **One** out of Two) **2**

(1) How will you homogenize the mammalian tissue for enzyme extraction?

(2) How different dyes help in enzyme purification?

(C) Write the Answer in detail : (Any **One** out of Two) **3**

(1) Write any three differences between differential and density gradient centrifugation used for enzyme purification.

(2) State precautions to be taken while purification of enzymes.

(D) Write Short note in detail : (Any **One** out of Two) **5**

(1) Describe various methods based on change in solubility of enzymes for its purification.

(2) Describe in detail about the enzyme purification method which is based on the biological specificity of compound.

**4** (A) Write the correct answer for the following questions : **4**

(1) Give example of enzyme obeying ordered single displacement reaction.

(2) State any one assumption made to derive Michaelis and Mentens equation.

(3) Define Km.

(4) Define Allosteric enzyme.

(B) Write the Answer in Brief : (Any **One** out of Two) **2**

(1) Draw well labelled diagram of any one reciprocal plot for Km amd Vmax determination.

(2) Give significance of Kcat/Km.

(C) Write the Answer in detail : (Any **One** out of Two) **3**

(1) Giving example explain R and T. State allosteric enzyme.

(2) Discuss differences between competitive and noncompetitive inhibition.

(D) Write Short note in detail : (Any **One** out of Two) **5**

(1) State two models and important features of allosteric enzyme.

(2) With example discuss regulation of enzyme by covalent modifaction.

**5** (A) Write the correct answer for the following questions : **4**

(1) In acute pancreatitis which enzyme is raised in first five days?

(2) Which chemical is frequently used to carry out cross linking in enzyme immobilization?

(3) Which two enzymes are used in the preparation of sugar syrup?

(4) Which enzyme inhibitor is used in the treatment of gout ?

(B) Write the Answer in Brief : (Any **One** out of Two) **2**

(1) Discuss the clinical importance of any one enzyme used in diagnosis of enzyme deficiency.

(2) What is the role of alkaline phosphatase and SGPT in diagnosis of various diseases ?

(C) Write the Answer in detail : (Any **One** out of Two) **3**

(1) Write in brief about the enzyme creatine kinase and its significance in diagnosis.

(2) Write in brief about the principle and working of biosensor.

(D) Write the answer in detail : (Any **One** out of Two) **5**

(1) Describe in detail about the various methods used for enzyme immobilization.

(2) Write about various enzymes used in diagnosis of cardiac disorders.

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