



PAP-003-105029

Seat No. _____

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

October / November - 2018

Biochemistry : Paper - 501

(Enzymology)

Faculty Code : 003

Subject Code : 105029

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

[Total Marks : 70

- 1 (A) Write the correct answer for the questions : 4
- (1) Hexokinase follows which type of specificity?
 - (2) Give full form of IUBMB.
 - (3) What is the optimum pH for Acid and Alkaline phosphatase?
 - (4) What is characterized by 4 digits of enzyme IUB nomenclature?
- (B) Write the Answer in brief : (any **one** out of two) 2
- (1) Compare hydrolases with lyases
 - (2) Define absolute specificity of enzyme with one example.
- (C) Write the Answer in detail : (any **one** out of two) 3
- (1) State at least four differences between chemical and biocatalysts.
 - (2) Write a note on thermolability of the enzyme.
- (D) Write the Short note in detail : (any **one** out of two) 5
- (1) Define Isoenzyme and explain with suitable example.
 - (2) Explain with illustration : Induced fit model
- 2 (A) Write the correct answer for the questions : 4
- (1) Give name of one metal activated enzyme.
 - (2) In which mechanism of catalysis covalent bond is formed between substrate and enzyme?.
 - (3) Define prosthetic group.
 - (4) Give full form of NAD⁺.

- (B) Write the Answer in brief : (any **one** out of two) **2**
- (1) Give the examples of amino acids which are functioning as electrophile and nucleophile.
 - (2) Explain metalloenzymes.
- (C) Write the Answer in detail : (any **one** out of two) **3**
- (1) Define cofactors and explain briefly.
 - (2) Describe source and properties of coenzyme FAD.
- (D) Write the Short note in detail : (any **one** out of two) **5**
- (1) Explain covalent catalysis with suitable illustration.
 - (2) Explain with suitable example: Metal ion catalysis.
- 3** (A) Write the correct answer for the questions : **4**
- (1) How will you calculate purification fold?
 - (2) Which solvent is used for precipitation of enzymes?
 - (3) State role of SDS- PAGE technique.
 - (4) Give example of non ionic polymer.
- (B) Write the Answer in brief : (any **one** out of two) **2**
- (1) What is salting in and salting out? How it is used in enzyme purification?
 - (2) How membrane bound enzymes are isolated?
- (C) Write the Answer in detail : (any **one** out of two) **3**
- (1) Write the differences between affinity chromatography and affinity elution.
 - (2) Write the differences between isoelectric focusing and chromatofocusing.
- (D) Write the Short note in detail : (any **one** out of two) **5**
- (1) Describe in detail about electrophoresis and capillary electrophoresis and write its difference.
 - (2) Explain ion exchange chromatography for enzyme purification.

- 4 (A) Write the correct answer for the questions : 4
- (1) Name the enzyme which follows ordered single displacement reaction.
 - (2) Name positive and negative effector molecules of enzyme Glycogen Phosphorylase.
 - (3) Apart from phosphorylation which other groups are used in chemical modification.
 - (4) Give example of competitive inhibition.
- (B) Write the Answer in brief : (any one out of two) 2
- (1) Define Turnover number of enzyme.
 - (2) Give significance of Q_{10} .
- (C) Write the Answer in detail : (any **one** out of two) 3
- (1) Draw diagram of MM curve and Lineweaver plots and show K_m and V_{max} .
 - (2) State four properties of allosteric enzymes.
- (D) Write the Short note in detail : (any **one** out of two) 5
- (1) Giving example discuss R and T state of enzyme.
 - (2) Write a short note on enzyme inhibition.
- 5 (A) Write the correct answer for the questions : 4
- (1) Name the enzyme used in cheese making.
 - (2) What is the role of bromelain and papain?
 - (3) Name any two enzymes responsible for galactosaemia.
 - (4) State two methods of enzyme immobilization.
- (B) Write the Answer in brief : (any **one** out of two) 2
- (1) Write the use of enzymes as biosensor.
 - (2) How blood clots are liquefied with the help of enzymes?

- (C) Write the Answer in detail : (any **one** out of two) **3**
- (1) Enlist at least three clinical conditions along with their enzymes used in the detection of enzyme deficiencies.
 - (2) Write any three industrial use of enzyme.
- (D) Write the answer in detail : (any **one** out of two) **5**
- (1) Explain process of beer and wine making and how clarification of beer is carried out?
 - (2) Describe enzymes used for the diagnosis of various liver disorder.
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