



**NAVVRACHANA  
UNIVERSITY**  
- UGC recognized University

**School:** School of Science  
**Program/s:** M.Sc. Life Science  
**Year:** 2<sup>nd</sup> **Semester:** 3<sup>rd</sup>  
**Examination:** End Semester Examination  
**Examination year:** December 2022

**Course Code:** LS243 **Course Name:** Enzymology  
**Date:** 07/12/2022  
**Time:** 11:30 am to 01:30 pm

**Total Marks:** 40  
**Total Pages:** 2

### Instructions

- Write each answer on a new page.
- Draw a neat and labelled diagram as when necessary

Q. No.	Details	Marks	COs'	BTL#
Q.1	<p><b>Choose the correct option:</b></p> <p>1. What does 'Y' represent in the following reaction?  <math>L\text{-Glutamine} + H_2O \xrightarrow{Y} x L\text{-Glutamate} + NH_3</math>            A) Collagenase B) Glutaminase C) Hyaluronidase D) Urokinase</p> <p>2. The general mechanism is that an enzyme acts by:            A) Reducing the activation energy B) Increasing the activation energy            C) Decreasing the pH value D) Increasing the pH value</p> <p>3. Identify the given inhibition.</p> <p>A) Competitive inhibition, I binding to same site as S            B) Competitive inhibition, I and S binding to different sites            C) Simple linear non-competitive inhibition            D) Uncompetitive inhibition</p> <p>4. An enzyme that joins the ends of two strands of nucleic acid is:            A) Polymerase B) Ligase C) Synthetase D) Helicase</p> <p>5. Which one among them is the example of competitive inhibition of an enzyme:            A) Succinic dehydrogenase by malonic acid B) Cytochrome oxidase by cyanide</p>	10	CO1, CO2, CO3, CO4	BT1, BT2, BT3

	<p>C) Hexokinase by glucose-6-phosphate D) Carbonic anhydrase by carbon dioxide</p> <p>6. Non-protein organic part of the enzyme is _____</p> <p>A) Co-factor B) Co-enzyme C) Apo enzyme D) Isoenzyme</p> <p>7. Pepsin and urease are examples for which class of enzymes</p> <p>A) Hydrolases B) Ligases C) Oxidoreductases D) Lyases</p> <p>8. Name the coenzyme of riboflavin (B2)?</p> <p>A) NAD or NADP B) FAD and FMN C) Coenzyme A D) Thiamine pyrophosphate</p> <p>9. What is the function of phosphorylase?</p> <p>A) Transfer inorganic phosphate B) Transfer a carboxylate group C) Use H<sub>2</sub>O<sub>2</sub> as the electron acceptor D) Transfer amino group</p> <p>10. Which of the following is not a type of enzyme bridge complex?</p> <p>A) M-E-S B) E-S-M C) E-M-S D) E-S-E</p>			
<b>Q.2</b>	<p><b>Answer the following question in short: (Any 4)</b></p> <p>1. Give the systematic name and the first three digit in E.C. classification of the enzyme catalyzing the given reaction.</p> <p>UDP-galactose <math>\rightleftharpoons</math> UDP-glucose</p> <p>2. What is enzyme inhibition?</p> <p>3. Give importance of ALP and AST in medical diagnosis.</p> <p>4. Differentiate between competitive and non-competitive inhibition.</p> <p>5. How dialysis can be used in enzyme extraction?</p>	<b>8</b>	<b>CO1, CO2, CO3, CO4</b>	<b>BT1, BT2, BT3</b>
<b>Q.3</b>	<p><b>Answer the following questions in brief: (Any 4)</b></p> <p>1. Give a brief account on oligomeric and monomeric enzymes with examples.</p> <p>2. State the applications of enzymes in food industry.</p> <p>3. What is active site in enzymes? Give different hypothesis to explain its specificity.</p> <p>4. Give a brief account on Streptokinase as thrombolytic enzyme.</p> <p>5. Explain the role of ATP, ADP and AMP as co-enzymes in enzyme catalyzed reactions.</p>	<b>12</b>	<b>CO1, CO2, CO3, CO4</b>	<b>BT1, BT2, BT3</b>
<b>Q.4</b>	<p><b>Answer the following questions in detail: (Any 2)</b></p> <p>1. Explain production of acetaldehyde from pyruvate with the help of pyruvate decarboxylase and thiamine pyrophosphate (TPP) as co-enzyme. (All steps are required)</p> <p>2. Give uses of enzymes in medical diagnostics.</p> <p>3. Give a detail account on various methods used for extraction of enzymes.</p>	<b>10</b>	<b>CO1, CO3, CO4</b>	<b>BT1, BT2, BT3</b>

\*\*\*\*\*End of question paper\*\*\*\*\*