



**NAVVRACHANA
UNIVERSITY**
a UGC recognized University

School: School of Science
Program: BSc-LS
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December - 2021

Course Code: LS275 **Course Name:** Biochemistry-II
Date: 06/12/2021
Time: 08:30 am to 10:30 am

Total Marks: 40
Total Pages: 02

Instructions:

- Write each answer on a new page.
- Use of a calculator is permitted/not permitted.
- Draw labelled-figures wherever it is necessary.
- *COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping

Q. No.	Details	Marks	COs*	BTL#
Q.1	<p>Objective-based questions. (All mandatory; 1M x 16Q = 16M)</p> <ol style="list-style-type: none"> 1) Define: Cofactor with example. 2) Induced fit model of enzyme activity is based on rigidity. Write true or false with proper justification. 3) Define: Zymogen. 4) What is the role of allosteric site? 5) What is the role of enzyme inhibitor? 6) Why you should study enzyme kinetics? 7) How AMP:ATP ratio plays an important role in cell metabolism? 8) _____ enzyme plays a regulatory role in glycogen synthesis. 9) Write the full form TCA cycle. 10) _____ monosaccharide primarily circulates in human blood. 11) Differentiate between de novo and salvage pathway. 12) Explain source-sink relationship in plants. 13) What is the role of toxins of plant origin? 14) What do you mean by carbon fixation? 15) Protein mostly is made up of amino acids. Write true or false. 16) Write two examples of nucleotide. 	16	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT5
Q.2	<p>Short answers. (Any Six; 2M x 6Q = 12M)</p> <ol style="list-style-type: none"> 1) Explain the molecular rationale behind left side of (i) Enzyme activity vs pH and (ii) Enzyme activity vs Temperature plot. 	12	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT6

	<p>2) Design and explain an experiment to find out enzyme's initial velocity.</p> <p>3) Scientists use which 2 techniques to analyze same functional proteins with different amino acid sequence? Explain how.</p> <p>4) Explain the irreversible steps of gluconeogenesis.</p> <p>5) Explain the structural levels of glycogen with figure.</p> <p>6) Explain: Photosynthesis.</p> <p>7) Explain: Plant primary and secondary metabolites with examples and its functions.</p>			
Q.3	<p>Long answers. (Any Three; 4M x 3Q = 12M)</p> <p>1) Explain with examples: International classification of enzymes.</p> <p>2) Explain the steps of glycolysis.</p> <p>3) Explain full carbohydrate metabolism starting from early in the morning when you wake-up at 6AM till 11AM. Consider, you daily take breakfast at 9AM.</p> <p>4) Explain: PS-I and PS-II complex and its functioning.</p>	12	<p>C01, C02, C03, C04, C05, C06</p>	<p>BT2, BT3, BT4, BT5</p>

*****End of Question Paper*****