Enrollment No._____

NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Science
Program/s: BSc
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December 2022

Course Code: LS275 **Course Name:** Biochemistry II
Date: 07/12/2022
Time: 11:30 am to 01:30 pm

Total Marks: 40
Total Pages: 1

Instructions:

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

Q. No.	Details	Marks	COs*	BTL#
Q.1	**Objective-based questions. (1M x 15Q = 15M)** 1. Name one reducing power of the cell. 2. Differentiate between competitive and non-competitive inhibition. 3. What is the significance of zymogen? 4. How induced fit model is different from lock and key model? 5. Why metabolism is important for you? 6. Write one product of pentose phosphate pathway. 7. Why glycogen metabolism is necessary in the body? 8. What is anaplerotic aspect of TCA cycle? 9. Humans can produce glucose from fatty acid. Write true or false with proper justification. 10. Write repeatitive steps of fatty acid oxidation. 11. In which condition pseudo cycle happens? 12. Photorespiration is important. Write true or false with proper justification. 13. Dark reaction occur in absence of light. Write true or false with proper justification. 14. Why plant secondary metabolites are necessary for plants? 15. Name one factor that affect photosynthesis.	15	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT4
Q.2	**Short answers. (3M x 5Q = 15M)** 1. Differentiate between cofactor and coenzyme. How enzyme increases rate of reaction? 2. Write 6 applications of enzyme. 3. How glycolysis and gluconeogenesis are reciprocally regulated? Explain using regulatory molecules. 4. Explain for biomolecules- how catabolism and anabolism are in equilibrium? 5. Explain: How plant toxins help plants to survive? 6. Using source-sink system, explain the detailed logic behind synthesis and transport of photosynthates.	15	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT3, BT5 BT6
Q.3	**Long answers. (5M x 2Q = 10M)** 1. Explain chemical logic behind substrate concentration, temperature and pH affecting reaction rate of an enzyme. 2. Write chemical logics behind every step of glycolysis process. 3. How C4 plant photosynthetic system is different from C3?	10	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT3, BT4, BT5, BT6

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