Enrollment No._____

NAVRACHANA UNIVERSITY
a UGC recognized University

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

Course Code: BM304 **Course Name:** Biochemistry-II
Date: 12/12/2022 **Total Marks:** 40
Time: 11:30 am to 01:30 pm **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. Write one example of reducing power of the cell. 2. Why glucose metabolism is so important for the cell? 3. What are two different fates of pyruvate? 4. What is the significance of Pentose Phosphate Pathway? 5. Glycolysis and gluconeogenesis are reciprocally regulated. Write true or false with proper justification. 6. Differentiate between the role of hydride ion and proton in cell metabolism. 7. How ATP is produced in the cell? 8. What is the significance of difference in the structure of bacterial FAS than human FAS? 9. Give one significance of the biosynthetic process in plants. 10. Animals can convert fatty acids into glucose. Write true or false with proper justification. 11. Write one example of ketone body. 12. What is the significance of isoenzyme? 13. Write one example of high energy molecule in the cell. 14. How extra glucose is stored in the organism? 15. Which molecule is the major source for energy generation in the cell?	**15**	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT2, BT3, BT4
Q.2	**Short answers. (3M x 5Q = 15M)** 1. Differentiate between glycogen metabolism of liver and muscle. 2. Using metabolic steps, calculate ATP production after complete digestion of one glucose molecule within the cell. 3. How Electron Transport Chain and Cholesterol metabolism are important for humans? 4. Differentiate between primary and secondary metabolites. What are the importance of plant secondary metabolites? 5. How amino acid and nucleotide metabolism contributes to cell? Describe: Urea cycle. 6. How metabolism through GLUT1 and GLUT2 are correlated in brain and liver, respectively? Explain the kinetics.	**15**	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT3, BT5 BT6
Q.3	**Long answers. (5M x 2Q = 10M)** 1. Describe: The chemical logics of all glycolysis steps. 2. Design a radiolabeling experiment to track carbon assimilation and conversion in TCA cycle. 3. Draw figures for the integration of metabolism in normal subject and diabetic patient.	**10**	CO1, CO2, CO3, CO4, CO5, CO6	BT1, BT3, BT4, BT5, BT6

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