

U.G. 3rd Semester Examination - 2021**Molecular Biology****[PROGRAMME]****Course Code : MBG-101-CC1-T****(Biological Chemistry)**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **five** of the following : 2×5=10
- a) What is mutarotation of glucose?
 - b) Compare cyclic and noncyclic photophosphorylation.
 - c) What is albinism?
 - d) Draw Howarth projection formula of Lactose. Name its components.
 - e) What are reducing sugars? Give an example.
 - f) Where does TCA cycle and Glycolysis take place?
 - g) Write down four important functions of proteins.

- h) Name one enzyme of Glycolytic pathway and state its function.

2. Answer any **two** of the following: 5×2=10
- a) Write a short note on Urea cycle. 5
 - b) Give example of PUFA and MUFA. Briefly describe beta oxidation of fatty acids. 1+4
 - c) Define cofactor and coenzyme with example. How substrate concentration affects enzyme kinetics. 3+2
 - d) What are the products of light reaction and dark reaction? What are C₃ and C₄ plants? Give example. 2+2+1
3. Answer any **two** of the following: 10×2=20
- a) Define homopolysaccharide and heteropolysaccharide with example. State their biological importance. Name one aminoglycosidic antibiotic and mention its mode of action. 4+4+2=10
 - b) How hormones differ from enzymes? Name the hormones secreted by thyroid glands. Discuss mode of action of thyroid hormones. 3+2+5=10
 - c) Name the fat-soluble vitamins and their sources. State their biological importance. 3+7=10

- d) How Schiff base is formed in transamination reaction. What is gluconeogenesis? What are K_m and V_{max} ? Define competitive and non-competitive enzyme inhibition. Compare K_m and V_{max} of competitive and non-competitive enzyme inhibition.

$$2+2+2+2+2=10$$
