

U.G. 5th Semester Examination-2024**CHEMISTRY****[PROGRAMME]****Skill Enhancement Course (SEC)****Course Code : CHEM-G-SEC-T-3****(Analytical Clinical Biochemistry)****Full Marks : 40****Time : 2 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 questions: 2×5=10
- a) Indicate the two functions of Ribozymes.
 - b) What is glycosuria?
 - c) What do you mean by denaturation of proteins?
 - d) Mention the biomedical importance of carbohydrate.
 - e) Name one anticoagulant of human blood.
 - f) What is the full form of NAD⁽⁺⁾?
 - g) What are cofactors?
 - h) What is the difference between hexokinase and glucokinase?

[Turn over]

2. Answer any two questions: $5 \times 2 = 10$

- a) Cite the differences between serum and plasma. Provide two examples of hydrolase class enzyme. $3+2=5$
- b) Sucrose does not undergo mutarotation—explain. Draw the Fischer projection of α and β anomers of D-glucopyranose. $2+3=5$
- c) Define primary, secondary and tertiary structures of protein. 5
- d) What is the difficulty in defining a lipid based upon structural features? Describe the biological roles of lipoproteins. $2+3=5$

3. Answer any two questions: $10 \times 2 = 20$

- a)
 - i) Write down the principle for estimation of creatinine in blood.
 - ii) In renal glucosuria, mention the renal threshold for glucose.
 - iii) Mention the lifespan of RBC.
 - iv) How is an α -helix stabilized? $3+2+2+3=10$
- b)
 - i) What is rhesus factor? How is it related to fetal erythroblastosis?

- ii) What is diabetes mellitus? What are the most common types of this disease and what are their individual features? $4+6=10$

- c)
 - i) Isoglucose is more sweeter than glucose — explain.
 - ii) Draw the structures of two amino acids that contain aromatic rings in their side chain.
 - iii) Discuss about induced-fit theory.
 - iv) Draw the structures of the purine, pyrimidine bases and a nucleotide indicating their names. $2+2+3+3=10$