

B.Sc. Semester - 5 (Remedial) (NEP-2020) Examination**March/April-2026****CHE: Higher Chemistry-301 (Major-11)****Time: 2:00 Hours****Marks:50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Que.1 Answer any two out of three questions. (Five marks each) (10)
- (A) Write and explain the synthesis of Glycyl phenylalanine using Bergmann's method.
 - (B) Discuss Gabriel phthalimide synthesis and Hydantoin method for the synthesis of α -amino acids.
 - (C) Explain any five chemical reactions of amino group of α -amino acid.
- Que.2 Answer any two out of three questions. (Five marks each) (10)
- (A) Give the difference between Nucleosides and Nucleotides. Draw the structure of Adenosine, Guanosine and Cytidine.
 - (B) Write the advantages of TLC over other chromatographic techniques. Write various applications of TLC
 - (C) Draw the schematic diagram of GC instrument and also write characteristics of carrier gas used in GC.
- Que.3 Answer any two out of three questions. (Five marks each) (10)
- (A) Discuss oxidation of glucose and fructose by nitric acid and periodic acid.
 - (B) Explain the configuration of D(-)-Fructose.
 - (C) Prove pyranose ring structure of D(+)-Glucose by methylation method.
- Que.4 Answer any two out of three questions. (Five marks each) (10)
- (A) Discuss any three methods for the minimization of errors in detail.
 - (B) Explain titration curve of strong acid and strong base with graph.
 - (C) Write a short note on starch as a internal redox indicator with advantages and disadvantages.
- Que.5 Answer any two out of four questions. (Five marks each) (10)
- (A) Give Synthesis of Thyroxine.
 - (B) What is R_f value? Write factors affecting it. Explain separation and visualization of amino acids and metal ions by paper chromatography.
 - (C) Write a note on Mohr's method for the determination of end point in precipitation titration.
 - (D) Write only reactions of following conversions;
 - (i) Ketoheptose from D-Arabinose
 - (ii) Arabinose from D-Glucose
