End Semester Examination 2026

Second Semester

Paper- DATA ANALYSIS FOR CHEMIST (SEC)

Paper Code- SEC0215603N

Total Marks- 30 **Time- 1 hour 30 minutes**

A. Answer the following questions: **1 x 5 = 5**

1. Which of the following is the primary energy currency of the cell?
   (a) NADH (b) $FADH_2$ (c) ATP (d)GTP
2. The primary structure of protein refers to:
   (a) Folding pattern (b) Amino acid sequence (c) Helical shape (d) Subunit arrangement
3. The optimum activity of enzymes depends on:
   (a) pH (b) Temperature (c) Substrate concentration (d) All of these
4. The functional unit of genetic code is:
   (a) Gene (b) Codon (c) Anticodon (d) Chromosome
5. The optimum temperature for most human enzymes is:
   (a) $0\ ^0C$ (b) $25\ ^0C$ (c) $37\ ^0C$ (d) $50\ ^0C$

B. Answer the following questions (**any five**): **2 x 5=10**

1. What is ATP? Mention its biological significance.
2. Differentiate between α-helix and β-pleated sheet.
3. How do pH and temperature affect enzyme activity?
4. What do you mean by alcoholic and lactic acid fermentation?
5. What are the main functions of blood?
6. Difference between fibrous and globular protein.
7. How can one estimate the constituents of pathological urine?
8. Name the three main classes of lipids.
9. What are purines? Name the purine bases present in nucleic acids.
10. What are enzyme inhibitors? Give examples.

C. Answer the following questions (**any three**): **5 x 3 = 15**

1. Explain the role of ATP in energy metabolism.
2. Describe the Kreb's cycle and its significance in biochemical pathways.
3. Describe the Watson-Crick model of DNA with a labelled diagram.
4. Describe the process of blood coagulation.
5. Explain the characteristics of genetic code.
6. Discuss the biological roles of DNA and RNA.

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