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Class Test- 01 (68_K | Spring-25)
Course Code: CSE115

Course Name: Introduction to Biology and Chemistry for Computation

Question 1

You are an engineer tasked with optimizing the production process in a large chemical plant. The plant uses a Distributed Control System (DCS) to monitor and control various chemical reactions in real-time. However, there have been reports of inefficiencies and delays in the system, leading to production losses.

- **Question:** Describe how you would approach diagnosing and resolving these inefficiencies using the DCS. **(5 marks)**

Question 2

A forensic lab receives a sample from a crime scene suspected to contain traces of an unknown drug. The lab uses chromatography as one of the key techniques to separate and identify the components in the sample.

- **Question:** Explain how you would set up and execute the chromatography process to identify the unknown drug. **(5 marks)**

Question 3

In the early stages of drug development, a pharmaceutical company uses computational tools to identify potential drug candidates. These tools are used to simulate how different molecules will interact with a biological target, such as a protein involved in a disease.

- **Question:** Describe how computational chemistry can be used in drug design to predict the interaction between drug candidates and their biological targets. **(5 marks)**

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(Best of Luck)