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Classtest: 1

Course code: CSE115

Time: 30 minutes Marks: 15

1.	Dr. Arefin, a computer scientist, collaborates with a team of biologists and chemists to develop a software system that analyzes DNA sequences and simulates molecular interactions for drug discovery. His system uses large biological datasets, models chemical reactions, and predicts outcomes using artificial intelligence. His team believes that such integration accelerates medical breakthroughs and enhances understanding of complex biological systems. Explain how computers are applied in these fields of biology and chemistry. Why is it important for a computer scientist to understand both fields when working on such interdisciplinary projects?	8
2.	A large manufacturing plant has implemented an automated system where various controllers are placed at different stages of the production line. These controllers communicate with each other and make real-time decisions to adjust machinery operations, ensuring smooth, efficient, and safe production without the need for constant human intervention. The system helps in optimizing resources, improving product quality, and reducing operational downtime. Discuss the importance of such automated, real-time decision-making systems in industrial settings. Mention the application areas where such systems are commonly used and explain their impact.	7