

# CBBCS SCHEME

BBT405D

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## Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 Structural Biology and Biophysical Techniques

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.

Module - 1			M	L	C
Q.1	a.	Explain in detail about Composition and Primary structure of Proteins.	10	L2	CO1
	b.	Illustrate in detail about Ramachandran plot.	10	L2	CO1
OR					
Q.2	a.	Differentiate between Hydrophobic Interaction and Disulphide bond in protein.	10	L2	CO1
	b.	Describe in detail about Immunoglobulin G structure with diagram.	10	L2	CO1
Module - 2					
Q.3	a.	Discuss in detail about forces and stabilizing geometries.	10	L2	CO1
	b.	Explain in detail about melting of the DNA Double helix highlighting about Hyperchromicity process.	10	L2	CO1
OR					
Q.4	a.	Describe about Ribose Pukering and Tertiary structure of tRNA.	10	L2	CO1
	b.	Elaborate on structure and conformational properties of cell membranes.	10	L2	CO1
Module - 3					
Q.5	a.	Explain Rayleigh scattering and how is it responsible for blue colour appearance in sky.	10	L2	CO2
	b.	Discuss in detail about Scanning Electron Microscopy.	10	L2	CO2
OR					
Q.6	a.	Describe about Matrix - Assisted Laser Desorption / Ionization - Time of Flight Analyser.	10	L2	CO2
	b.	How do you measure the membrane potential using clamp (Voltage)?	10	L1	CO2
Module - 4					
Q.7	a.	Elaborate on the components involved in X - ray diffraction analysis.	10	L2	CO3
	b.	Explain in detail about fibre diffraction.	10	L2	CO3
OR					

Q.8	a.	Describe the principle and process of UV – spectroscopy.	10	L2	CO3
	b.	What is the mechanism involved in Electron Spin Resonance (ESR) spectroscopy.	10	L1	CO3
<b>Module – 5</b>					
Q.9	a.	How do you analyse DNA molecule using agarose gel electrophoresis?	10	L1	CO3
	b.	Write a detailed note on Gradient gel electrophoresis technique.	10	L2	CO3
<b>OR</b>					
Q.10	a.	What is the principle of HPLC? Mention their components.	10	L1	CO3
	b.	What is Gas Chromatography and how does it work?	10	L1	CO3

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