

MSc Sem.-2 Examination

410

Biomedical Technology

May-2025

Time : 2-30 Hours]

[Max. Marks : 70

Q-I	1	Explain: Blood coagulation.	(14)
	2	Write notes on: ESR and its clinical significance.	
	OR		
	1	Write notes on: Blood Indices.	
	2	Explain: Bone marrow aspiration and biopsy collection.	
Q-II	1	Explain in detail: Blood collection and preservation.	(14)
	2	What is blood grouping? What are the different criteria for blood donation and screening criteria of blood donor.	
	OR		
	1	Write a note: Steps and process of pre-transfusion testing	
	2	What is blood transfusion reaction? Write down the different types of delayed reactions of blood transfusion and explain any two delayed reactions in detail.	
Q-III	1	Write a brief overview of radioactive isotope.	(14)
	2	Explain sealed source, unsealed source, disused source, and orphan source in brief.	
	OR		
	1	Write a detail on applications of radioactive isotopes in nuclear medicine and research.	
	2	Describe a brief note on alpha particle, beta particle, gamma rays, and neutrons.	
Q-IV	1	Describe the bystander effect in radiation biology. How does it challenge traditional concepts of direct radiation damage?	(14)
	2	Discuss differential radiosensitivity among various tissues and organs in the human body. What factors influence this variability?	
	OR		
	1	What are the primary effects of ionizing radiation on biomolecules such as DNA, proteins, and lipids? How do these effects contribute to cellular damage?	
	2	Explain the systemic effects of radiation on various organs and organ systems, including hematopoietic, gastrointestinal, and nervous systems.	
Q-V	Answer any SEVEN out of TWELVE.		(14)
	1	Importance of anticoagulants.	02
	2	Define: Lymphoma.	02
	3	Give examples of anaemia.	02
	4	What is full name of TACO and TRALI in blood transfusion?	02
	5	What is anoxia?	02
	6	What is Heinz bodies?	02
	7	Define cosmic radiation.	02
	8	Describe any one difference between isotope and radioactive isotope.	02
	9	Define mass number of atoms.	02
	10	Mention any two genetic effects of radiation exposure.	02
	11	Define radioprotective agents and mention one commonly used example.	02
	12	What is the difference between deterministic and stochastic effects of radiation?	02