0505N292

Candidate's Seat No :_____

MSc Sem.-2 Examination

410

CE & ART

May-2025

Time : 2-30 Hours] **[Max. Marks : 70**

Q.1A	Explain the basic physiology of cryobiology and its relevance to cell survival.	7
Q.1B	Discuss the role, types, and mechanisms of action of cryoprotectants in cryopreservation.	7
	OR	
Q.1A	List and explain the various factors affecting freezing and cryopreservation outcomes in reproductive biology.	7
Q.1B	Explain the set-up of a Cryopreservation lab.	7
Q.2 A	Describe the step-by-step process of embryo freezing.	7
Q.2 B	Explain the procedure of semen cryopreservation and its clinical applications.	7
	OR	
Q.2 A	Describe the step-by-step process of Oocyte freezing.	7
Q.2 B	Write a detailed note on the techniques and indications for gonadal cryopreservation.	7
Q.3 A	List various vitrification devices and describe their application in ART laboratories.	7
Q.3 B	Compare slow freezing and vitrification techniques in terms of methodology and clinical outcomes.	7
	OR	
Q.3 A	Describe the step-by-step process of embryo thawing.	7
Q.3 B	What is the difference between Permeable and non-permeable CPA?	7
Q.4 A	Write a detailed note on oocyte banking, indications, and protocols.	7
Q.4 B	Describe the procedures, applications, and advantages of cord blood	7
	OR	
Q.4 A	Write a detailed note on sperm banking, indications, and protocols.	7
Q.4 B	Explain the importance of storage protocols and safety measures in cryopreserved sample management.	7
Q.5	**Answer the Following Short Questions (Any 7)**	14
1	Define cryobiology.	
2	Name two types of cryoprotectants.	
3	Mention common cryoprotectants used for embryo freezing.	

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4	What is vitrification?	
5	Name uses of embryo freezing in ART.	
6	List any two vitrification devices.	
7	Mention two limitations of the slow freezing technique.	
8	Describe applications of cord blood banking.	
9	Mention advantages sperm cryopreservation.	
10	What are the indications of gonadal cryopreservation.	