0102E1293

Candidate's Seat No :_____

MSc Sem.-1 Examination

401

Human Genetics

Time : 2-30 Hours] **February-2025** **[Max. Marks : 70**

Q-I	**1**	Write a note on mitochondrial complex I.	**(14)**
	2	Write a note on sorting, packaging & transport of lysosomal proteins.	
		OR	
	1	Write a note on the lipid of the plasma membrane.	
	2	Describe the process of protein synthesis at ribosomes.	
Q-II	**1**	Explain the structure of adherence junctions.	**(14)**
	2	Describe various types of stem cells.	
		OR	
	1	Write a note on oncogenes.	
	2	Explain the structure of gap junctions.	
Q-III	**1**	Write an account of Lyon hypothesis and X-chromosome inactivation.	**(14)**
	2	Draw a labelled diagram and give a detailed note of the nucleosome.	
		OR	
	1	Write an account of types of heterochromatin.	
	2	Draw a labelled diagram and give information about the types of chromosomes.	
Q-IV	**1**	Write a detailed note on cryopreservation, giving the principle and its applications.	**(14)**
	2	What are the optimum requirements & environment for cell cultures? Discuss.	
		OR	
	1	Discuss the enzymatic methods used for the isolation of cells from tissue for culture initiation.	
	2	Write a note on primary & secondary cultures. What are the criteria for seeding & feeding?	
Q-V		**Answer any SEVEN out of TWELVE.**	**(14)**
	1	What is retrograde transport of vesicles?	**02**
	2	Give structure and function of lipid rafts.	**02**
	3	Briefly explain: UCP	**02**
	4	What is Knudsen's two-hit hypothesis? What ability does it provide to cancer cells?	**02**
	5	Give the difference between desmosomes and hemidesmosomes.	**02**
	6	Give the name and function of two microtubule-associated motor proteins.	**02**
	7	Give four examples of non-histone proteins involved in the packing of DNA.	**02**
	8	Which form of DNA is left-handed? How many base pairs are present per turn in this DNA?	**02**
	9	Write the full form of XIC and XIST.	**02**
	10	What is the lag phase in cell cultures?	**02**
	11	Give advantage of neoplastic tissue in cell cultures.	**02**
	12	Give the advantage of suspension cultures.	**02**