

## MSc Sem.-1 Examination

401

Zoology

February-2025

Time : 2-30 Hours]

[Max. Marks : 70

Q-I	1	Write a note on sorting, packaging & transport of lysosomal proteins.	(07)
	2	Write a note on mitochondrial complex IV.	(07)
	<b>OR</b>		<b>OR</b>
	1	Describe the process of protein synthesis at ribosomes.	(07)
	2	Write a note on microtubules.	(07)
Q-II	1	Explain the structure of gap junctions.	(07)
	2	Write a note on stem cells and its types.	(07)
	<b>OR</b>		<b>OR</b>
	1	Write a note on tumor suppressor genes.	(07)
	2	Explain the adherence junctions.	(07)
Q-III	1	Write a description of X-chromosome inactivation and the Lyon hypothesis.	(07)
	2	Provide a thorough description of the nucleosome along with a labeled diagram.	(07)
	<b>OR</b>		<b>OR</b>
	1	Write a description of the distinct types of heterochromatin.	(07)
	2	Make a labeled diagram and describe the various types of chromosomes.	(07)
Q-IV	1	Write a detailed note on cryopreservation, giving the principle and its applications.	(07)
	2	What are optimum requirements & environment for cell cultures? Discuss.	(07)
	<b>OR</b>		<b>OR</b>
	1	Discuss the enzymatic methods used for isolation of cells from tissue for culture initiation.	(07)
	2	Write a note on primary & secondary cultures. What are the criteria for seeding & feeding?	(07)
Q-V	<b>Answer any SEVEN out of TWELVE.</b>		<b>(14)</b>
	1	What is retrograde transport of vesicles?	02
	2	What are lipid rafts? Give its function.	02
	3	What is UCP? Give its function.	02
	4	Briefly explain Knudsen's two hit hypothesis.	02
	5	Give justification for the presence of tight junctions in epithelium.	02
	6	Briefly explain that the development of cancer is a multistep process.	02
	7	Write the name of any four structural non-histone proteins associated with DNA.	02
	8	What type of DNA has a left-handed orientation and how many base pairs are there in each turn of this DNA?	02
	9	The full form of XIC is _____ and XIST is _____.	02
	10	What is the lag phase in cell cultures?	02
	11	Give advantage of neoplastic tissue in cell cultures.	02
12	Give advantage of suspension cultures.	02	