0505N288

Candidate's Seat No :_____

MSc Sem.-2 Examination

410

Zoology

May-2025

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

Q-I	1	Write a note on FUCA.	**(14)**
	2	What is the evolution of bipedalism in humans? Explain its advantages and disadvantages.	
		OR	
	1	Write a note on nucleosynthesis.	
	2	Write a note on human dispersal.	
Q-II	1	Write Hardy-Weinberg's law. Explain its implications in determining evolution.	**(14)**
	2	Write a note on Cursorial adaptations.	
		OR	
	1	What is the bottleneck effect? Explain with a suitable example.	
	2	Explain mimicry in arthropods, citing three examples.	
Q-III	1	Write a brief overview of the radioactive isotope.	**(14)**
	2	Explain sealed source, unsealed source, disused source, and orphan source in brief.	
		OR	
	1	Write details on the 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	Explain the law of radiosensitivity and how it relates to cell type, mitotic activity, and differentiation. Provide relevant examples.	**(14)**
	2	What is the role of radiotherapy in cancer treatment? Compare and contrast external beam therapy and brachytherapy in terms of mechanism, application, and side effects.	
		OR	
	1	Define radiation syndromes. Discuss the types of acute radiation syndromes based on dose and exposure level.	
	2	Outline the biological effects of ionizing radiation on cells and cell organelles. Include mechanisms of DNA repair and apoptosis.	
Q-V	Answer any **SEVEN out of TWELVE.**		**(14)**
	1	Give recent developments that support the panspermia hypothesis for the origin of life on Earth.	02
	2	What are stromatolites? What is their contribution to evolution?	02
	3	Briefly explain the importance of artificial cells in evolution.	02
	4	Give the difference between gene flow and genetic drift.	02
	5	What prevents gene flow?	02
	6	What are Amish people? How are they affected due to inbreeding?	02
	7	Define atomic number.	02
	8	What is half life?	02
	9	Define radioactive decay chain.	02
	10	What does the radiation-induced Bystander effect refer to?	02
	11	Name two organs highly sensitive to ionizing radiation.	02
	12	What is meant by radiosensitizing agents? Give one example.	02