

## M.Sc Semester-2 Examination

407

## Human Genetics

Time : 2-30 Hours]

April-2024

[Max. Marks : 70

Q-I	1	Write a note on spontaneous mutations.	(14)
	2	Explain the SOS repair mechanism.	
	OR		
	1	What are the characteristics of eukaryotic genome? Discuss any one.	
	2	Write a note on transposons.	
Q-II	1	Explain the attenuation of the gene expression process of the <i>trp</i> operon.	(14)
	2	Write a description of the replication that occurs in bacterial DNA.	
	OR		
	1	Explain how the <i>lac</i> operon is regulated by CAP and cAMP using a diagram.	
	2	Provide a thorough explanation of the processes involved in the epigenetic modifications involving DNA methylation and histone modification.	
Q-III	1	Describe "Antibody" in detail.	(14)
	2	Explain briefly: Immune response.	
	OR		
	1	Give a note on types of hypersensitivity.	
	2	Explain briefly: Autoimmunity.	
Q-IV	1	Explain the technique of latex agglutination.	(14)
	2	Give a note on clinical applications of ELISA.	
	OR		
	1	Why is it essential to match donors and recipients in organ transplantation?	
	2	Describe "LFIA" in brief.	
Q-V	Answer any SEVEN out of TWELVE.		(14)
	1	What are pseudogenes?	02
	2	What is C value?	02
	3	What is satellite DNA?	02
	4	Other names for Group III introns are _____ and _____.	02
	5	To study population genetics, give the Hardy-Weinberg equilibrium equation.	02
	6	The <i>lacZ</i> gene encodes the _____ enzyme, while the <i>lacY</i> gene encodes the _____ protein within the <i>lac</i> operon.	02
	7	Add a note on "Aggregation".	02
	8	Mention the functions of Dendritic cells (DCs) cells.	02
	9	Mention the role of cytokines.	02
	10	What are four examples of immunologically privileged sites?	02
	11	Add a note on "Equivalent zone".	02
	12	Define: Familial grafting.	02

