0502E1460

Candidate's Seat No : _____

MSc Sem.-1 Examination

404

Human Genetics

February-2025

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

Q-I	**1**	Explain Mendel's concepts and describe the Monohybrid experiment.	**(14)**
	2	Write a note on: Chromosomal Theory of Inheritance.	
		OR	
	1	Explain any five concepts developed beyond the basic Mendelian principles.	
	2	Discuss: Epistasis, Complementary and Supplementary genes, giving examples.	
Q-II	**1**	Describe the rules for drawing up and analysis of a Pedigree record.	**(14)**
	2	Write a note on: Polygenic and Multifactorial Inheritance.	
		OR	
	1	Explain the Genetic mechanisms of sex determination. Discuss the role of SRY.	
	2	Discuss the study and implications of Ecogenetics.	
Q-III	**1**	Write a detailed note on the FISH technique.	**(14)**
	2	Describe GTG in detail.	
		OR	
	1	Give an account of centromere and kinetochore.	
	2	Give detailed information about the banding technique in which probes are not utilized but still, the fluorescence microscope is required to visualize the bands.	
Q-IV	**1**	Write a detailed note on aneuploidy.	**(14)**
	2	Explain translocation & inversions, giving the consequences.	
		OR	
	1	Write a note on ISCN and give the important abbreviations.	
	2	Why do autosomal disorders have serious consequences? Discuss important examples of autosomal disorders.	
Q-V		**Answer any SEVEN out of TWELVE.**	**(14)**
	1	What are Pseudoalleles? Give an example.	**02**
	2	Briefly explain: Pleiotropic Genes.	**02**
	3	Define Linkage.	**02**
	4	Distinguish between sex-influenced and sex-limited traits.	**02**
	5	What is Pharmacogenetics? Why is it important?	**02**
	6	List disorders related to Mitochondrial inheritance.	**02**
	7	Give the full form of aCGH and CNVs and write the correlation between these two.	**02**
	8	The full form of PHA is _____. It is obtained from _____ and gives mitotic stimulation to _____ in humans.	**02**
	9	What will be the effect on the final result if, the temperature is too low or too high during Ba(OH)2 treatment while performing C-banding?	**02**
	10	Differentiate between trisomy and triploidy.	**02**
	11	Write the karyotype of Turner syndrome.	**02**
	12	Give an example of polyploidy in humans.	**02**