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0201N1447

Candidate's Seat No :_____

M.Sc. Sem.-1 Examination

404

Human Genetics

January-2024

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

Q-I	1	Explain Mendel's Monohybrid experiment and the concepts obtained from it.	(07)
	2	Discuss Intergenic interactions giving examples.	(07)
		OR	**OR**
	1	Briefly elucidate the extensions built on Mendel's principles.	(07)
	2	Describe the variation in phenotype based on multiple alleles.	(07)
Q-II	1	Explain the Autosomal Recessive inheritance pattern and describe any 2 disorders.	(07)
	2	Write an account on Pharmacogenetics an its significance.	(07)
		OR	**OR**
	1	How is Autosomal Dominant inheritance identified? Describe any 2 disorders.	(07)
	2	Write a note on Polygenic and Multifactorial inheritance.	(07)
Q-III	1	Explain Critical points, characteristics, mechanisms and applications of the banding technique which is most frequently used to check the structural aberration present in human chromosomes.	(07)
	2	Give the full form of FISH and explain the principle, method and applications of it.	(07)
		OR	**OR**
	1	Give detailed information about the banding technique in which spermine bis-acridine is used to obtain bands on human chromosomes.	(07)
	2	Write the full form of aCGH and give a detailed account of it.	(07)
Q-IV	1	What is euploidy? Discuss in detail.	(07)
	2	Write an account on sex-chromosomal disorders.	(07)
		OR	**OR**
	1	What is spontaneous fetal loss? Discuss the genetical causes.	(07)
	2	Write a note on: chromosome translocations and deletion.	(07)
Q-V		**Answer any SEVEN out of TWELVE.**	
	1	Why is Mendel is revered as the Father of Genetics?	(14)
	2	Define Pseudoalleles. Give an example.	02
	3	Why is Pedigree analysis important? Mention rules for drawing a pedigree chart.	02
	4	What is Ecogenetics? What is the purpose of this study?	02
	5	Explain Sex-limited traits with a suitable example.	02
	6	State an example to show the serial dominant-recessive relationship between alleles.	02
	7	The correct determination of the human diploid chromosome number as 46 was carried out by _____ and _____ in 1955 whereas, chromosomes were first observed in _____ cells by _____ in 1842.	02
	8	Compare between N – banding and Ag – NOR staining.	02
	9	What is the purpose of treating the metaphase plate using the dilute acid 0.2N HCl and then $Ba(OH)_2$ for C-banding?	02
	10	What is mitotic non-disjunction?	02
	11	Define chromosome instability. Give two examples of chromosome instability syndrome.	02
	12	What is isochromosome?	02