



GIET UNIVERSITY, GUNUPUR – 765022
 M. Sc. (First Semester) Examinations, March – 2023
22BTPC105 - GENETICS
 (Biotechnology)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

PART – A

(2 x 10 = 20 Marks)

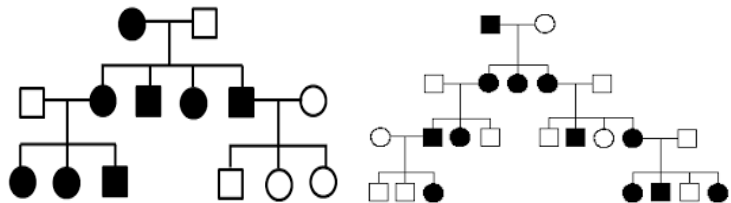
Q.1. Answer all questions

	CO#	Blooms Level
a. Differentiate between phenotype and genotype with examples.	1	K1
b. Acandroplesia is a disease which having mutation. Explain the type of mutation.	2	K3
c. Explain the ordered analysis in yeast.	2	K2
d. What is mitochondrial inheritance? Draw the pedigree of mitochondrial inheritance.	3	K3
e. How adaptive landscape is useful for fitness.	4	K3
f. Define genetic fitness and what is the role in mating?	4	K2
g. Extricate the non- mendelian trait.	5	K3
h. What are disadvantages of inbreeding? explain	6	K2
i. Heterozygotes decreases generation by generation. justify the statement	4	K2
j. What are hypomorphic genes. Explain the mechanism.	3	K2

PART – B

(10 x 5 = 50 Marks)

Answer ANY FIVE questions

	Marks	CO#		Blooms Level
2. Explain mendelian crosses in pisum sativum with details.	10	6		K3
3.a. Enumerate regional mutagenesis and Enhancer trapping.	05	1		K3
b. Write about meiotic crosses and their importance.	05	2		K2
4. a. Illusterate pedigree analysis and their application	05	3		K3
b. 	05	3		K3
Study both the pedigree and Give comments.				
5.a. How genetic drift happens? Explain the bottleneck event.	05	4		K4
b. A gene locus has two alleles A and a. If the frequency of dominant allele A is 0.4, then the frequency of homozygous dominant, heterozygous and homozygous recessive individuals in the population is.....	05	4		K3
6. a. Describe the process behind switching of mat genes in yeast.	05	2		K2
b. Explain synthetic lethality mechanism in an individual cell.	05	2		K3
7.a. Complementation genes are expressing for a single character for example White to purple. Justify the line.	05	1		K3
b. Describe the process of selfing in a cross.	05	6		K4
8. Enumerate QTL mapping in quantitative traits.	10	5		K3

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