JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

M.Sc. (Biotechnology)

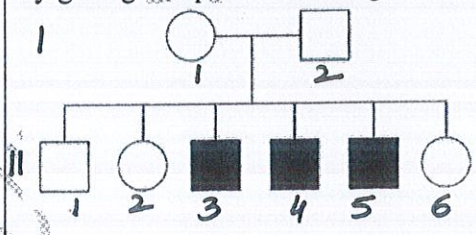
COURSE CODE (CREDITS): 20MS1BT115, 02 MAX. MARKS: 15

COURSE NAME: Genetics

COURSE INSTRUCTOR: Prof. Sudhir Kumar MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make suitable numeric assumptions wherever required for solving problems.

Q.No	Question	CO	Marks
Q1	a. When a yellow Labrador dog was mated with a brown male, half of the puppies were brown and half were yellow. The same female, when mated with a different male, produced only brown offsprings. Design a cross to justify these results. b. Yellow color and round seeded pea plant shape are dominant phenotypes to green and wrinkled seeded characters. A heterozygous yellow colored and round seeded pea plant was test crossed. Calculate the phenotypic ratios and show your result. c. "Mendel's approach to the study of heredity was effective." Justify the statements with effective reasoning.	I	2 2 1
Q2	a. Differentiate between phenotype and genotypic markers giving adequate examples. b. Compare the Theory of Inheritance of Acquired Characters *Vs* Mendelian Inheritance. c. Differentiate between recon, cistron, and muton.	II	2 2 1
Q3.	a. Find the pattern of inheritance, probable genotypes of each individual by giving adequate reasoning:  b. Parents were carrier to a autosomal recessive disorder, what is the probability that 02 out of 03 children will be normal (show your work).	II	2.5 2.5