

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -3 EXAMINATION, MAY-2018
B TECH BT

COURSE CODE: 10B11BT411

MAX. MARKS: 35

COURSE NAME: Genetics

COURSE CREDITS: 04

MAX. TIME: 2 HR

Note: All questions are compulsory; Carrying of mobile phone during examination will be treated as case of unfair means.

- Q1. A) Does every marriage between two medium brown individuals offer the possibility of progeny showing either lighter or darker skin colors? Explain.
- B) What is the phenomenon of Double Crossovers and Interference? **CO I** [2.5+2.5]
- Q2: A) Assume that in squashes the difference in fruit weight between a 3 pound type and a 6 pound type is due to three factor AA, BB, and CC, each factor contributing $\frac{1}{2}$ pound to fruit weight. Cross a 3 pound plant (aa, bb, cc) with a 6 pound one. What will be the phenotypes of the F1 and F2?
- B) What does gene interaction mean? How does epistasis differ from dominance? **CO IV** [2.5+2.5]
- Q3: A) From a marriage, all the daughters are normal sighted whereas all the sons are colour-blind. Give the genotypes of the parents. If both the parents were colour-blind, could they give rise to normal children?
- B) What is the origin of the following individuals:- XXX, XYY **CO IV** [2.5+2.5]
- Q4: A) A man and a girl intending to marry decide to have sweat test for the cystic gene because a brother of the man died in his childhood from this disorder. The test revealed the man to be heterozygous and the woman homozygous normal. What is the probability that any of their offspring might have cystic fibrosis? Could any of the couple's grandchildren have it?
- B) Write a note on Mitochondrial inheritance. **CO III** [2.5+2.5]
- Q5: A) Explain the various types of Aneuploidy.
- B) Describe the origin of hexaploid Wheat. **CO III** [2.5+2.5]
- Q6: A) Explain the genesis of Dolly sheep.
- B) Write a note on Maternal Effects in Snail shell coiling. **CO II** [2.5+2.5]
- Q7: What are the various structural changes in chromosomes? Explain. **CO III** [5]
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