

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2023

B.Tech. - VIII Semester (Biotechnology)

COURSE CODE(CREDITS): 18B1WBT 831, 03

MAX. MARKS: 35

COURSE NAME: Genetic Counselling

COURSE INSTRUCTOR: Dr. Sudhir Kumar

MAX. TIME: 2 Hours

*Note: All questions are compulsory. Marks are indicated against each question in square brackets.*

- Q1: Here is genetic status of a couple – Husband is suffering from Hemophilia and Huntington's disease and wife is suffering from Cystic fibrosis and carrier of Red Green colour blindness. They have 02 daughters and 01 son. All are minors. A) Calculate the probability of daughters and son to suffer from these genetic diseases. B) Decipher the genotypes of parents of this couple. C) Prepare a genetic counselling session of this couple for next pregnancy and management of disorder within themselves and their children. You may have justifiable assumptions wherever necessary. [10] CO - 2
- Q2: Comment upon the G-6-P dehydrogenase deficiency, its frequency, causes, inheritance pattern and counselling session of an unmarried 26 years old male. [4] CO - 1
- Q3: Elaborate various mechanisms of gene therapy, delivery methods and current status of gene therapy in India and overseas. [4] CO - 3
- Q4: "Small changes in genes may have a great impact on human life". Justify by giving two examples. [3] CO - 2
- Q5: Differentiate between Becker Muscular Dystrophy and Duchene Muscular Dystrophy. How does (M) Solan helps, counsel and provide risk assessment to improve their health and mental conditions. [5] CO - 4
- Q6: A patient of 62 years of age is diagnosed from Parkinson's disease. Plan a counselling session for him. What are your priorities as a genetic counsellor? Elucidate the roles of 3-4 genes involved in this disease. [5] CO - 4
- Q7: What are the limitations and ethical issues of genetic counselling of persons who are likely to suffer from genetic diseases? Assume two case studies and explain. [4] CO - 4