

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST 3 EXAMINATION - 2022

B.Tech-VIII Semester (BT)

COURSE CODE (CREDITS): 18B1WBT831

MAX. MARKS: 35

COURSE NAME: Genetic Counselling

COURSE INSTRUCTORS:

MAX. TIME: 2 Hours

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

Q1. a) A 40 years male is suffering from Huntington Disease. His wife is normal and pregnant; asking you about the chances of their child to be normal and seeking counselling for her husband and child. Plan a counseling session and your approach to guide them.

b) Prenatal testing is a basis of risk estimation. Comment upon the statement by giving 2 examples. Calculate the probability of all three children born as girls in a row.

[4+3]

Q2. a) "Attention Deficit Hyperactivity Disorder (ADHD)" is a problem of Brain's Management System. Justify this statement. How do you link the Intelligence spectrum with ADHD? Share unique characteristics to identify kids/persons suffering from ADHD?

b) Share your point of view supported by logical reasoning/examples on accuracy of Pedigree Analysis for predicting a genetic disorder.

[4+3]

Q3: a) What are causes of Duchenne Muscular Dystrophy (DMD)? Explain the inheritance pattern of DMD by giving examples through pedigree.

b) How do symptoms and causes of alpha-Thalassemia differ from beta-Thalassemia? Comment upon inheritance pattern of Thalassemia.

[4+3]

Q4: a) Correlate Eugenics to Genetic Counselling? Do we practice Eugenics as well as Genetics Counseling in today's world? Elaborate your answer giving at least one example for each case.

b) A man is normal, but his mother was suffering from cystic fibrosis marries to a woman having carrier status for cystic fibrosis. Calculate the probability that out of their 04 children, 02 will be normal?

[4+3]

Q5: a) Highlight the mechanism of induction of Glucose-6-phosphate dehydrogenase (G-6-P-D) deficiency in humans. What are the symptoms and inheritance pattern?

b) Plan a counseling session of parents of a 10 year old female child suffering from Down's Syndrome. They need to know probability of having Down's Syndrome to their next child and treatment/care options for their daughter.

[4+3]