

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-2 EXAMINATIONS-2023

M. Sc.-II Semester (BT)

COURSE CODE (CREDITS): 20MS1BT214 (2)

MAX. MARKS: 25

COURSE NAME: GENOMICS & PROTEOMICS

COURSE INSTRUCTOR: DR. JATA SHANKAR

MAX. TIME: 1 Hour 30 Min

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

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- Q1. Selection of a model organism is important, state a model organism applicable to genomics study of cancer and why? [2.5 marks] COII
- Q2. Human genome project is the landmark in the science, what are the outcomes of the genome projects? What is repetitive element in the genome; do find any application of it? [2.5 marks] COI
- Q3. Write on pyrosequencing? What are the different applications of it? [2.5 marks] COII
- Q4. Differentiate between translation, transcript, transcription, transcriptome and transcriptomics? [2.5 marks]
- Q5. How SNPs are introduced in the genome? How does it affect function or structure of a gene encoding protein, explain? [2 marks]
- Q6. Write on Illumina sequencing technology? How it influences the functional genomics studies? [2.5 marks] COII
- Q7. The approximate no. of gene encoding protein in human genome is 20,000; calculate the gene density? [2.5 marks] COI
- Q8. What is purpose of mapping of query sequence read to the reference genome and how it helps to identify the open read frame and locating a gene in the chromosome? [2.5 marks] COII
- Q9. What is VNTR, where do find the application of it as a biomarker? [2.5 marks] COII
- Q10. Characteristics of DNA Microarray and how it works to determine the whole genome expression profile in cancer cases vs to the normal cells? [2.5 marks] COII