JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST - I EXAMINATIONS-2023

M.Sc-II Semester (BT)

COURSE CODE (CREDITS): 20MS1BT214 (2) MAX. MARKS: 15

COURSE NAME: GENOMICS & PROTEOMICS

COURSE INSTRUCTOR: DR. JATA SHANKAR MAX. TIME: 1 Hour

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

Q1. Write on Sanger's DNA sequencing technology? And how it influences the functional genomics studies? [2.5 marks] CO I

Q2. The approximate number of genes in *Saccharomyces cerevisiae* genome is around 12Mb; calculate the gene density? [2.5 marks] CO I

Q3 Quality control of the DNA sequence data is important to determine the function of a gene. PHRED score helps us to determine the quality of the DNA reads. If PHRED score of DNA sequence read comprises of 1kb is 30, calculate the possible number of incorrect bases in the reads? [2.5 marks] CO II

Q4. What is purpose of physical mapping? If a query sequence read is given and how you identify the open read frame? [2.5 marks] CO I

Q5. Human genome project is the landmark in the science, it took around 10 years to get the first draft of the genome, what are the outcomes of the genome projects and how EST database help to identify the genes encoding protein? [2.5 marks] CO I

Q6. In genomics, assigning coding sequence in the genome sequencing project is important task? Other than the chromosomal DNA, mitochondrial DNA, plastid or plasmid has a significant role in the biology or providing critical function to the cell or an organism, give the descriptive data of human mitochondrial genome? [2.5 marks] CO I