

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2024

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 down the mechanism of Sanger's DNA sequencing technology? Who described the technology and when? Name the organism that was has been sequence first? What is clonal amplification or bridge amplification? [2.5 marks] CO I
- Q2. Define the gene density? Calculate the gene density of *E. coli* and *S. cerevisiae*, and draw a relation between prokaryotic and eukaryotic organism? [2.5 marks] CO I
- Q3. If PHRED score of DNA sequence read is 40. What would the quality of sequence determined in the given data? Also define chromatogram? [2.5 marks] CO II
- Q4. Describe physical mapping? Highlight the importance of restriction mapping and ESTs in mapping in the given sequences suggesting coding or non-coding region? [2.5 marks] CO I
- Q5. How chromosome walking helps in physical mapping of the chromosome? Also give small notes on the ROX, TAMRA, R6G and R110 [2.5 marks] CO I
- Q6. Give the account of genetic information of mitochondrial genome and why there is existence of organelle genome other than nuclear genome? Notes on the following diagram [2.5 marks] CO I

