

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST 3 EXAMINATIONS – MAY 2018
B.Tech. VI Semester (Biotechnology)

COURSE CODE: 10B11BT611

MAX. MARKS: 35

COURSE NAME: Comparative and Functional Genomics

COURSE CREDITS: 04

MAX. TIME: 2 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. Write down the number of genes in E. coli and human genome, what is the estimated genome size of these organisms? (2 marks) CO I
2. Describe MALDI and give example of matrix that is commonly used for fragmentation of peptide? (2 marks) CO I
3. What is Pyrosequencing? What are the steps involved in this sequencing method? Also mention the enzymes with source agent? What are the different applications of the Pyrosequencing? (3 marks) CO I
4. What are protein modifications and give biological functions related to the modification in such protein? Give strategies to identify the phosphorylated and glycosylated proteins from the given tissue sample? How database is applicable in this whole process? (6 marks) CO II
5. If you have given with whole genome oligonucleotide based microarray from human, how do you proceed to identify differentially expressed genes that could be associated to the cancerous cells vs health ones? (6 marks) CO III
6. Write on characteristics and limitations of proteins array, explain with example that protein-protein interaction can be achieved on the glass slides? (5 marks) CO III
7. Explain Biomarker, give example with application in cancer field? (3 marks) CO IV
8. Pharmacogenomics deal with the response of drug is dependent on the genotype of the individuals, explain with example? (3 marks) CO IV
9. Describe SNP? Discuss how SNPs are introduced in the genome? What are the methods available to screen SNPs in the gene? Describe a disease where screening of SNPs is suggested? (4 marks) CO IV