

Registration No.:

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Total number of printed pages-2

M.Tech
BTPE 201

2nd Semester Regular / Back Examination - 2015-16
GENOMICS AND PROTEOMICS

Q Code: W879

Full Marks -70

Time: 3 Hours

Answer Question No. 1 which is compulsory and any five from the rest.

The figures in the right-hand margin indicate marks.

1. Answer the followings.

[2X10]

- (a) What steps in DNA sequencing are skipped during shot-gun sequencing?
- (b) Write the name of different techniques used for measurement of concentration proteins.
- (c) Which types of genomics studies deals with the physical nature of genomes?
- (d) Which bacterial genome was the first to be completely sequenced?
- (e) What is SNP haplotyping?
- (f) What is the relation between genome size and gene number in prokaryotes?
- (g) What do you mean by structural proteomics?
- (h) What is SAGE?
- (i) Write two applications of the Human Genome Project?
- (j) What do you mean by pedigree analysis?

2. a) What are the ESTs? How can the EST-databases are used for *in-silico* discovery of SSRs and SNPs? [5]

b) Briefly discuss various organellar genomes. [5]

3. What is mass spectrometry? Compare MALDI with other methods of ionization for MS and discuss their relative merits and demerits. [10]

4. Explain with the help of a suitable example, the computational approach for studying protein- protein interactions. [10]

5. a) Explain with diagram the "Yeast Two Hybrid System". [5]

b) What is peptide fingerprinting? Explain briefly. [5]

6. a) What do you understand by annotation of whole genome sequences? How far these annotations are accurate? [5]

b) What do you understand by pharamacogenetics and pharmacogenomics? Describe the uses of pharamacogenomics in biomedicine involving diagnosis and treatment of diseases. [5]

7. a) What are DNA chips and microarrays? Write a notes on different tools used for analysis of microarray data. [5]

b) What is RFLP and how it is studied? Why are they treated as co-dominant markers? Discuss their utility in preparation of molecular maps. [5]

8. Write short notes on any two: [5X2]

a) Comparative genomics.

b) Iso-electrofocusing.

c) 16s r-RNA typing.

d) N-terminal sequencing.