



CBGS SCHEME

18BT54

Fifth Semester B.E. Degree Examination, July/August 2021 Genomics and Proteomics

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Explain Sanger's dideoxy method of sequencing in comparison with Automated method of sequencing. (08 Marks)
b. Explain the types of polymorphism with suitable example. (06 Marks)
c. Discuss on method of preparing genomic DNA for sequencing. (06 Marks)
- 2 a. Explain shotgun approach of DNA sequencing. (08 Marks)
b. Describe Illumina NGS method of sequencing in detail. (06 Marks)
c. Explain the method of discovery of new genes and its function. (06 Marks)
- 3 a. Summarize on Rice Genome project and its database. (08 Marks)
b. What are ESTS? Explain construction and application of ESTS. (06 Marks)
c. Explain specific goals of functional genomics by taking *C. elegans* as a model system. (06 Marks)
- 4 a. Illustrate on DNA chip technology used to measure expression level of large number of genes. (08 Marks)
b. Explain Goal, sequencing strategy, mapping strategy and application of HGP. (06 Marks)
c. Summarize on *E. coli* Genome project. (06 Marks)
- 5 a. Explain in detail on mechanics of RNA silencing. (08 Marks)
b. Describe in detail about genome organization with in chloroplast. (06 Marks)
c. Explain – C – value of genome. (06 Marks)
- 6 a. Discuss in detail about general architecture of prokaryotic and eukaryotic genome. (08 Marks)
b. Illustrate on Gene editing-CRISPR –Cas 9. (06 Marks)
c. Write a short note on regulation of transcription. (06 Marks)
- 7 a. What are molecular marker? Explain RFLP and RAPD used as molecular marker for genetic mapping. (08 Marks)
b. Explain the working principle of FISH. (06 Marks)
c. Discuss on telemark as a molecular marker. (06 Marks)
- 8 a. Describe any two methods of detection of SNPs. (08 Marks)
b. Discuss in detail about SCAR and CAPs a molecular marker. (06 Marks)
c. Write a note on Transposon tagging. (06 Marks)
- 9 a. Explain in detail on yeast two hybrid interaction screening. (10 Marks)
b. Explain the working of 2D Gel electrophores for proteome analysis. (10 Marks)
- 10 a. Explain the application of proteome analysis to drug development and toxicology. (10 Marks)
b. Discuss on Mass spec based analysis of protein expression. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.