CBCS SCHEME

USN | | | | | | | | | | | 18BT54

Fifth Semester B.E. Degree Examination, Jan./Feb. 2021
Genomics and Proteomics

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. What is polymorphism? Explain different types of polymorphism with suitable example. **(10 Marks)**

b. Explain Sanger's dideoxy method for DNA sequencing. **(10 Marks)**

OR

2 a. Explain with principle any one method of Next Generation Sequencing [NGS]. **(10 Marks)**

b. Give a brief note on the databases and tools used for genome studies. **(10 Marks)**

Module-2

3 a. Explain in detail human genome project. **(10 Marks)**

b. Write critical note on : i) DNA chip ii) Single Nucleotide Polymorphism [SNP]. **(10 Marks)**

OR

4 a. Write detailed account on Expressed Sequence Tags [ESTS] : Generation and Applications. **(10 Marks)**

b. Write short note on : i) Gene disease association ii) Genetic mapping. **(10 Marks)**

Module-3

5 a. Explain architecture of eukaryotic genome. **(10 Marks)**

b. What are genome editing? Write a note on CRISPR –Cas 9. **(10 Marks)**

OR

6 a. Explain the organization of genome within mitochondria and chloroplast. **(10 Marks)**

b. Illustrate the regulation of transcription. **(10 Marks)**

Module-4

7 a. What are genetic and physical maps in genome mapping? Explain how RFLP can be used as a molecular marker in mapping. **(10 Marks)**

b. Write short note on i) Micro-array in functional genomics ii) Transposon tagging. **(10 Marks)**

OR

8 a. Describe FISH as a means of physical mapping approach. **(10 Marks)**

b. Discuss about : i) DD – RT PCR ii) Microsatellite as molecular Marqker. **(10 Marks)**

Module-5

9 a. Explain in detail two hybrid interaction screens. **(10 Marks)**

b. Explain 2D SDS – PAGE for detection of proteins. **(10 Marks)**

OR

10 a. Discuss the important methods in isolation, purification and quantification of proteins. **(10 Marks)**

b. Explain mass spectrometry based analysis of protein expression. **(10 Marks)**

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fImportant 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.