

# CBCS SCHEME

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Fifth Semester B.E. Degree Examination, Jan./Feb. 2023

## 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. Define Polymorphism. Explain the different types. (10 Marks)  
b. i) Write a short note on Database Subscriptions. (05 Marks)  
ii) Elaborate methods of preparing DNA for sequencing. (05 Marks)

OR

- 2 a. Describe Maxam and Gilbert method of sequencing in detail. (10 Marks)  
b. i) Write a short note on Shot gun approach of sequencing. (05 Marks)  
ii) Elaborate on NGS. (05 Marks)

### Module-2

- 3 a. Explain Inheritance pattern in Eukaryotes. (10 Marks)  
b. i) Write a short note on SNPs. (05 Marks)  
ii) Expressed Sequence tags (ESTs) (05 Marks)

OR

- 4 a. Explain Genome project on Ecoli in detail. (10 Marks)  
b. Describe Human Genome Project. (10 Marks)

### Module-3

- 5 a. Describe Cell – differentiation and Gene regulation in detail. (10 Marks)  
b. Explain General architecture of Prokaryotic and Eukaryotic genome. (10 Marks)

OR

- 6 a. Explain : i) Interference RNA (05 Marks)  
ii) Write applications in functional genomics. (05 Marks)  
b. Explain Gene Knockdown technology in detail. (10 Marks)

### Module-4

- 7 a. What are Molecular Markers? Explain RFLP as Bio markers. (10 Marks)  
b. Explain the Marker assisted selection in crop development. (10 Marks)

OR

- 8 a. Explain the methods of Molecular mapping. (10 Marks)  
b. Describe : i) FISH ii) STS mapping. (10 Marks)

### Module-5

- 9 a. Write a note on Large scale preparation of proteins and peptides. (10 Marks)  
b. Describe Protein chip – interactions and detection techniques. (10 Marks)

OR

- 10 a. Write the SDS method of detection of proteins. (10 Marks)  
b. Write a note on :  
i) Write the applications of Proteome analyse to drug discovery. (05 Marks)  
ii) Phase antibodies. (05 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.