

**FACULTY OF SCIENCE**  
B.Sc. II-Semester (CBCS) Examination, May / June 2019

Subject : Bio-Technology

Paper – II : Nucleic Acids & Bioinformatics

Max. Marks:

Time : 3 Hours

**PART – A** (5 x 4 = 20 Marks)  
(Short Answer Type)

Note : Answer any FIVE of the following questions.

- 1 DNA as genetic material
- 2 C-value paradox
- 3 Enzymes of DNA replication
- 4 Excision repair
- 5 BLAST
- 6 PDB
- 7 Pairwise and multiple sequence alignment
- 8 Pharmacogenomics

**PART – B** (4 x 15 = 60 Marks)  
(Essay Answer Type)

Note: Answer ALL from the questions.

- 9 (a) Compare structures of different forms of DNA with a neat labeled sketch.  
OR  
(b) Write a detailed note on types of DNA sequences in eukaryotic genome.
- 10 (a) What is DNA recombination? Explain homologous recombination with a diagram.  
OR  
(b) Define mutation. Illustrate different types of mutations with examples.
- 11 (a) Define Bioinformatics. Discuss the emergence of bioinformatics in detail.  
OR  
(b) What is a database? How are they useful in biological research?
- 12 (a) What is genome annotation? Explain the role of bioinformatics in gene identification.  
OR  
(b) What is drug designing? How does bioinformatics assist in drug target identification and validation?

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