

FACULTY OF SCIENCE  
B.Sc. II-Semester (CBCS) Examination, May / June 2018

Subject : Biotechnology

Paper – II : Nucleic Acids and Bioinformatics

Time : 3 Hours

Max. Marks: 80

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

Note : Answer any FIVE of the following questions.

- 1 Describe Tobacco Mosaic Virus (TMV).
- 2 Write in brief about transposable elements.
- 3 Distinguish between transition and transversion.
- 4 Discuss mismatch repair mechanism.
- 5 What are UNIPROT and PIR? Write about their utilization.
- 6 Distinguish between pBLAST and nBLAST.
- 7 Define gap and gap penalty.
- 8 What is genome annotation? Write about gene identification tools.

PART – B (1 x 15 = 15 Marks)  
(Essay Answer Type)

Note: Answer any one of the questions.

- 9 (a) Describe in detail about Griffith's experiment on transformation.  
OR  
(b) Write in detail about the organization of eukaryotic genes.
- 10 (a) Explain in detail about semi-conservative mode of DNA replication.  
(b) What is mutagen? Explain in detail about spontaneous and induced mutations.
- 11 (a) Define Bioinformatics. Discuss the scope of Bioinformatics.  
OR  
(b) Explain in detail about biological databases and their importance with examples.
- 12 (a) Write in detail about the protein structure prediction.  
(b) Describe the role of bioinformatics in identification drug targets and drug designing.