

**DEPARTMENT OF BOTANY**

**CLASS-B.Sc. Part-II (Biotech)**

**SESSION: 2019-20**

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**PAPER –I**

**MOLECULAR BIOLOGY & BIOPHYSICS**

MAXIMUM MARKS: 50

NUMBER OF UNIT :V

MINIMUM MARKS: 17

**Unit-I**

1. Nucleic Acid: Bases, Nucleosides and Nucleotides; DNA and RNA Structure
2. Plasmids
3. Transposons: Repetative elements, LINEs & SINEs, Structure of Gene.

**Unit-II**

1. DNA replication: Enzymes involved in Mechanism of DNA replication in Prokaryotes.
2. Mutation: Molecular level of Mutation, Types of Mutagens, Spontaneous and induced Mutation.
3. DNA Repair : NER, BER and Mismatch Repair.

**Unit-III**

1. Genetic code: Features, Codon Assignment, Wobble hypothesis.
2. Transcription: Initiation, Elongation and Termination in Prokaryotes.
3. Translation: Initiation, Elongation and Termination Translation machinery in Prokaryotes. Operon – Concept of Operator, Regulator, Promoter Gene, Inducer and Co-repressor

**Unit-IV**

- 1 Biophysics introduction, scope and Application
- 2 Principle, structure, function of the following :
  - a. Microscopy
  - b. Colorimeter and Spectroscopy
  - c. . Electrophoresis
  - d. Centrifugation
  - e. Chromatography

## Unit-V

1. Radioisotopes techniques: Measurement of radioactivity, Ionization Chambers Geiger Muller and Scintillaion Counter.
2. Autoradiography and DNA Fingerprinting.
3. Biosensor

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Mrs. Deepa Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. V. Acharya	MEMBER OF THE DEPARTMENT	
Dr. B.M.Lall	MEMBER OF THE DEPARTMENT	
Dr. Neetu Harmukh	MEMBER OF THE DEPARTMENT	
Mrs. Vinita Sahu	MEMBER OF THE DEPARTMENT	

**PRACTICAL SCHEME**  
**B.Sc. Part-II (Biotech) 2020-21**

**Time : 4 hrs**

**M.M. : 50**

<b>S.NO.</b>	<b>TITLE</b>	<b>MARKS</b>
1.	Experiments based on DNA/RNA	10
2.	Experiments based on instruments	10
3.	Experiments based on Bioinformatics	10
4.	Spotting	10
5.	Viva-voce	05
6.	Record / Sessional	05

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