

## FACULTY OF SCIENCE

B.Sc. II-Semester (CBCS) Examination, May / June 2017

Subject : Bio-Chemistry

Paper – II : Chemistry of Nucleic Acids and Biochemical Techniques

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/ Composition of nucleotides
- 2/ Action of nucleases
- 3/ Watson and Crick model of DNA
- 4/ Hyper chromic effect
- 5/ UV absorbance of biomolecules
- 6/ Principle and application of colorimetry
- 7/ Paper chromatography
- 8/ Affinity chromatography

PART – B (4 x 15 = 60 Marks)

(Essay Answer Type)

Note: Attempt ALL the questions.

- 9 (a) Write the structure of purines and pyrimidines and give an account of base pairing in DNA and RNA. Add a note on the spectral characteristics of nucleic acids.
- OR
- (b) Explain the formation of phosphodiester bond and its stability against chemical and enzymatic agents.
- 10 (a) Give an account of different types of RNA and their biological functions. Draw the structure of tRNA and label.
- OR
- (b) Write about:
- (i) Denaturation and reassociation kinetics of DNA
  - (ii) Different forms of DNA
- 11 (a) Explain the principle of Beer Lambert law to measure absorbance. Discuss the application of spectrophotometry.
- OR
- (b) Give an account of principle and applications of centrifugation techniques. Define relative centrifugal force.
- 12 (a) Explain the principle methodology and applications of gel filtration and ion exchange chromatography.
- OR
- (b) Write about:
- (i) TLC
  - (ii) Affinity chromatography

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