

Subject Title: Chemistry of Nucleic acids And Biochemical Techniques

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Year: I B.Sc

Semester: II

Updated on: 22-3-

**Unit - I: Composition Of Nucleic Acids****Essay Questions :**

1. Define Phosphodiester bond? Write about the factors affecting the stability of phosphodiester bond? (effect of acids, Bases, Enzymes)
2. Explain in detail about the Photochemical & spectral characteristics of Nucleic acids?

**Short Answer:**

3. Functions of Nucleotides
4. Structures of Purines & Pyrimidines
5. Differences between DNA & RNA

**Unit - II: Structure of Nucleic acids****Essay Questions :**

6. Write in detail about the structure of DNA proposed by Watson & Crick
7. Define Renaturation ? Explain about the Reassociation Kinetics of DNA
8. Define Cot? Explain about the Cot Half, Cot Curves & their Significance
9. Explain different types of RNA & their Functions

**Short Answers**

10. Denaturation of Nucleic Acids,  $T_m$  Values
11. Super Coiling of DNA
12. Hypochromic Effect
13. Renaturation of DNA
14. Define  $T_m$  value & its Significance

**Unit - III: Spectrophotometric and Centrifugation Technique****Essay Questions**

15. Describe the principle, instrumentation & applications of Spectrometer?

16. Write about the principle & application Centrifugation Technique?
17. Write in detail about the Differential Centrifugation?
18. Explain the principle & instrumentation of Ultracentrifugation?

**Short Answers:**

19. Limitations of Beer-Lamberts Law
20. Principle of Fluorimetry
21. Molar Extinction Coefficient
22. Beer-Lamberts law

**Unit - IV: Chromatography Techniques****Essay Questions**

23. Write about the principle applications of Affinity chromatography?
24. Write about the principle applications of Gel filtration chromatography?
25. Write about the principle applications of ion exchange chromatography?
26. Write about the principle applications of Paper chromatography?

**ShortAnswers**

27. Thin layer chromatography
28. Applications of Paper Chromatography
29. Cation Exchanger
30. Anion Exchanger