

B.Sc. Semester - 6 (CBCS) Examination**April/May-2022 (NEW COURSE)****Analytical Techniques and Bioinformatics (Core (New))****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

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- Q.1A. Give specific answers. (04)
1. Define: Radioisotope
 2. Define: Spectroscopy
 3. Wavelength of visible light is _____ to _____ nm.
 4. Full form of AAS.
- B. Answer in Brief. (Any one out of two) (03)
1. Different between colorimeter and spectrophotometer.
 2. Principle of flame photometry.
- C. Write a Note on. (Any one out of two) (07)
1. IR – Principle and applications.
 2. Discuss in detail: Mass Spectroscopy.
- Q.2A. Give specific answers. (04)
1. Define: Stationary phase
 2. Explain: Effective distribution coefficient
 3. Flame ionisation detection is commonly used in AAS. (True/False)
 4. Write the any two types of detector in chromatography
- B. Answer in Brief. (Any one out of two) (03)
1. Principles and application of paper chromatography
 2. Short note on partition chromatography
- C. Write a Note on. (Any one out of two) (07)
1. Detail note on GC-MS chromatography.
 2. Explain in brief: Size exclusion chromatography.
- Q.3A. Give specific answers. (04)
1. Lipid is also separated by electrophoresis. (True/False)
 2. The polymerization of the gel used in PAGE occurs between acrylamide and _____.
 3. Write full form of 2D-PAGE.
 4. Define: Isoelectric point.
- B. Answer in Brief. (Any one out of two) (03)
1. Describe in short: PFGE
 2. Write the overview of biosensor technology.
- C. Write a Note on. (Any one out of two) (07)
1. SDS-PAGEs.
 2. Explain principles and theory of agarose gel electrophoresis
- Q.4A. Give specific answers. (04)
1. Write full form of VNTR.
 2. Who discovered the PCR technique?
 3. How many DNA duplexes are obtained from one DNA duplex after 5 cycles of PCR?
 4. Explain: Melting temperature in PCR

- B. Answer in Brief. (Any one out of two) (03)
1. Short note on: RFLP.
 2. Over view of primer design in PCR.
- C. Write a Note on. (Any one out of two) (07)
1. Blotting techniques for RNA identification.
 2. Principle and theory of PCR.
- Q.5A. Give specific answers. (04)
1. Define: Database
 2. Write full name of NCBI.
 3. _____ is an example of phylogenetic tree construction tool? (Photoshop / Cluster W / BLAST)
 4. In which year human genome project was started?
- B. Answer in Brief. (Any one out of two) (03)
1. Short not on: Structural Databases
 2. Write the short note on ENTREZ and SRS.
- C. Write a Note on. (Any one out of two) (07)
1. Write the various application of Bioinformatics in area of research
 2. Explain: BLAST and FASTA.
