

B.Sc. Semester - 6 (CBCS) Examination**April/May-2022 (OLD COURSE)****ANALYTICAL TECHNIQUES AND BIOINFORMATICS(CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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- Q.1 A. Give specific answers. (04)
1. The results obtained by spectroscopic methods are reliable, reproducible and correct than classical methods (True/False)
 2. Write full form of GLP.
 3. Write wavelength range are associated with visible light.
 4. Beer – Lambert's law
- B. Answer in Brief. (Any one out of two) (03)
1. Full name of NMR, IR and AES.
 2. Application of Radioisotopes in field of bioscience.
- C. Write a Note on. (Any one out of two) (07)
1. Write the applications of UV-Visible spectrophotometry in research.
 2. Short note on Atomic Spectroscopy.
- Q.2 A. Give specific answers. (04)
1. Define: Mobile phase
 2. Define: Chromatography
 3. Write the full form of GC-MS
 4. _____ is commonly used for separation of volatile compound.
- B. Answer in Brief. (Any one out of two) (03)
1. Write three difference between affinity and ion exchange chromatography.
 2. Application of affinity chromatography in research.
- C. Write a Note on. (Any one out of two) (07)
1. Principles and theory of HPLC.
 2. Detail note on LC-MS Chromatography.
- Q.3 A. Give specific answers. (04)
1. Define: Electrophoresis
 2. Write full form of PFGE.
 3. Rate of migration of molecules is directly proportional to current. (True/False).
 4. Define: Buffer
- B. Answer in Brief. (Any one out of two) (03)
1. Write factor affecting in electrophoresis
 2. Write basic principles of capillary electrophoresis.
- C. Write a Note on. (Any one out of two) (07)
1. Describe in detail: 2D-PAGEs.
 2. Flow cytometry.

- Q.4 A. Give specific answers. (04)
1. Define: Primer
 2. Define: RNA
 3. Write full name of STR.
 4. Write any two method of DNA sequencing.
- B. Answer in Brief. (Any one out of two) (03)
1. Brief note on chemical synthesis of DNA.
 2. Short note on: FISH.
- C. Write a Note on. (Any one out of two) (07)
1. Explain: Automated DNA sequence analyser for DNA sequencing.
 2. Blotting techniques for protein identification.
- Q.5 A. Give specific answers. (04)
1. Define: Bioinformatics
 2. _____ is an example of Homology and similarity tool? (BLAST/Cluster W)
 3. Dayhoff scientist created the first Bioinformatics database. (True/False)
 4. Proteomics refers to the study of _____.
- B. Answer in Brief. (Any one out of two) (03)
1. Short not on : Miscellaneous databases
 2. Enlist the various biological database.
- C. Write a Note on. (Any one out of two) (07)
1. Primary and secondary databases
 2. Explain: BLAST and FASTA.
