

B.Sc. Semester - 6 (CBCS) Examination**May/June-2021 (OLD COURSE)****ANALYTICAL TECHNIQUES AND BIOINFORMATICS(CORE)****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Q.1(A) Answer the following. (Any one Out of Two) (07)

1. Write detail note on mass spectroscopy
2. Explain in detail: Nuclear magnetic resonance.

Q.1(B) Attempt any one. (Out of Two) (04)

1. Write basic idea about good laboratory practices.
2. Discuss: Infrared Spectroscopy.

Q.1(C) Attempt any three. (Out of Five) (03)

1. Define: Radioisotope.
2. Write wavelength range are associated with UV-visible light (nm).
3. Limitation of Beer – Lambert's law.
4. Full form of AES.
5. Define: Spectroscopy.

Q.2(A) Answer the following. (Any one Out of two) (07)

1. Ion Exchange chromatography with applications.
2. Justify: How GC-MS widely used for volatile compound?

Q.2(B) Attempt any one. (Out of two) (04)

1. Partition chromatography - mechanism an application.
2. Describe in short: Paper chromatography.

Q.2(C) Attempt any three. (Out of Five) (03)

1. Flame ionisation detector is commonly used in HPLC. (True/False)
2. In chromatography, the stationary phase can be _____ or _____ supported on a solid.
3. Which types of chromatography involves the separation of substances in a mixture over a 0.2 mm thick layer of an adsorbent?
4. Write the role of guard column in chromatography.
5. Define: Chromatography.

Q.3(A) Answer the following. (Any one Out of two) (07)

1. Detail note on: Agarose gel electrophoresis.
2. SDS PAGE.

Q.3(B) Attempt any one. (Out of two) (04)

1. Biosensor Technology: types and Applications.
2. Write short note on paper electrophoresis.

- Q.3(C) Attempt any three. (Out of Five) (03)
1. _____ is the technique that separates charged particles using electric field.
 2. Give the full form PFGE.
 3. Enlist the factor affecting on electrophoresis.
 4. Protein can detect by using Ethidium Bromide dye in gel electrophoresis? (True/False)
 5. Write the use for APS in PAGE.
- Q.4(A) Answer the following. (Any one Out of two) (07)
1. Explain Sanger's method in detail.
 2. Mechanisms and method of PCR Technology.
- Q.4(B) Attempt any one. (Out of two) (04)
1. Explain the mechanism of FISH.
 2. Short note on RFLP.
- Q.4(C) Attempt any three. (Out of Five) (03)
1. Difference between Probe and Primer
 2. The PCR technique was developed by_____.
 3. How many DNA duplexes are obtained from one DNA duplex after 4 cycles of PCR?
 4. Write the full form of RAPD
 5. Southern blotting is a laboratory technique used to detect a specific DNA sequence. (True/False)
- Q.5(A) Answer the following. (Any one Out of two) (07)
1. Importance of Bioinformatics in field of various science.
 2. Justify: BLAST and FASTA is key Sequence Alignment tools.
- Q.5(B) Attempt any one. (Out of two) (04)
1. Primary and Secondary Biological Databases.
 2. Write short note on ENTREZ and SRS.
- Q.5(C) Attempt any three. (Out of Five) (03)
1. Explain: Bioinformatics.
 2. Give the full form of NCBI.
 3. _____ tool widely used for construction of phylogenetic tree.
 4. Define: Database
 5. BLAST is an algorithm and program for comparing mathematical database. (True/False)
