

B.Sc. Semester - 4 (CBCS) Examination
March/April-2023 [NEW COURSE]
BioChemistry-BC401(Core)

Time: 2:30 Hours**Marks: 70****Instructions:**

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

Q.1(A) Answer the following questions. (Any One) (07)

1. Principles and working of double beam spectrophotometer.
2. Write the applications of UV-Visible spectrophotometry.

Q.1(B) Answer the following question. (Any One) (04)

1. Extinction coefficients.
2. Discuss: Electromagnetic radiation and spectra.

Q.1(C) Answer the following question. (Any Three) (03)

1. Define: Spectroscopy.
2. Write the Principle of Beer – Lambert's law.
3. Explain: Absorption.
4. Which of the instrument is used for absorbance determination of colour chemical?
5. Wavelength of uv is _____ to _____ nm.

Q.2(A) Answer the following questions. (Any One) (07)

1. Write short note on types and techniques of centrifugation.
2. Discuss in detail: Various application centrifugation.

Q.2(B) Answer the following question. (Any One) (04)

1. Write the basic concepts of Centrifugal force.
2. Describe in short: RCF.

Q.2(C) Answer the following question. (Any Three) (03)

1. The centrifugation is based on the principle of when a force is less than the gravity desired. (True/False)
2. Write Full form of RCF.
3. Define: Centrifugal force.
4. Explain: Sedimentation.
5. _____ is used as a media for density gradient? (Ficoll/ Nutrient agar)

Q.3(A) Answer the following questions. (Any One) (07)

1. Biological applications of radioisotopes.
2. Techniques for measurement of radioactivity.

Q.3(B) Answer the following question. (Any One) (04)

1. Biological hazards of radiation and safety measures in handling radioisotopes.
2. Types of radioisotopes used in biochemistry.

- Q.3(C) Answer the following question. (Any Three) (03)**
1. Define: Radioisotope.
 2. Explain: Radioactivity.
 3. Isotopes have the same number of protons. (True/False)
 4. _____ is radioactive compound. (Tritium / Vimentin)
 5. What is the half-life of a radioisotope?
- Q.4(A) Answer the following questions. (Any One) (07)**
1. Detailed note on: High performance liquid chromatography.
 2. Give in brief: Affinity chromatography.
- Q.4(B) Answer the following question. (Any One) (04)**
1. Give basic information on Ion exchange chromatography.
 2. Write overview of Molecular sieve chromatography.
- Q.4(C) Answer the following question. (Any Three) (03)**
1. Define: Chromatography.
 2. Full form of GLC.
 3. Chromatography is a physical method that is used to separate and analyse _____ mixture. (Complex / Viscous)
 4. In chromatography, the stationary phase can be gases only. (True/False)
 5. Explain: Mobile Phase.
- Q.5(A) Answer the following questions. (Any One) (07)**
1. Discuss: SDS-PAGE.
 2. Write detailed note on 2-D Gel electrophoresis.
- Q.5(B) Answer the following question. (Any One) (04)**
1. Give the Basic principles of electrophoresis.
 2. Explain: Factors affecting electrophoretic mobility.
- Q.5(C) Answer the following question. (Any Three) (03)**
1. Define: Electrophoresis.
 2. Full name of PAGE.
 3. _____ technique separates charged particles using electric field.
 4. Electrophoresis not used for separation of lipids. (True / False)
 5. Explain: Isoelectric point.
