



**Shree H.N.Shukla College of Science Rajkot**  
**B.Sc. (Sem- 4) (CBCS)**  
**BIO-CHEMISTRY: C[401]**  
**Prelims test Paper-2018**

[Time: 2:30 Hour]  
Date: 14/03/2018

[Total Marks: 70]  
Time: 10:30 to 1:00

**Q1 (A) Write answers of following questions (4)**

- 1) Write the statement of Beer's law.
- 2) What is the range of wavelength of visible light?
- 3) For what are gratings used?
- 4) What is meant by absorption maxima?

**(B) Answer any one. (2)**

- 1) Which different types of light sources are used in spectrophotometers and colorimeters?
- 2) Explain molar extinction coefficient and state how it can be determined?

**(C) Answer any one. (3)**

- 1) Write a note on monochromators.
- 2) Write a note on single beam spectrophotometer.

**(D) Answer any one (5)**

- 1) What are the applications of spectroscopy?
- 2) Explain the principle construction and working of double beam spectrophotometer with figure?

**Q2 (A) Write answers of following question (4)**

- 1) What is a radioisotope?
- 2) Name the instruments used for measuring radioactivity.
- 3) Which rays do not get deflected in presence of electric field?
- 4) What do you mean by flours?

**(B) Answer any one.**

- 1) Explain all the units of measuring radioactivity.
- 2) What are the propertues of alpha rays?

**(C) Answer any one. (3)**

- 1) What are the biological hazards of radiation?
- 2) How is gas ionization useful in measuring radioactivity?

**(D) Answer any one (5)**

- 1) Give the applications of radioisotopes in biochemistry.
- 2) Write a note on liquid scintillation technique for measuring radioactivity?

**Q3 (A) Write answers of following question (4)**

- 1) Define RCF.
- 2) What is the aim of centrifugation technique?
- 3) Liquid A is a more dense liquid and liquid B is a less dense liquid. Both are immiscible. Which of the two would like to remain at bottom when filled in a centrifuge tube?

4) Write the principle of density gradient centrifugation?

**(B) Answer any one.** (2)

- 1) Explain the difference between preparative and analytical centrifugation techniques.
- 2) Differentiate between rate zonal and isopycnic centrifugation techniques.

**(C) Answer any one.** (3)

1. Explain with figure that how the organelles of the liver cells can be separated by differential centrifugation.
2. Write a short note on zonal rotors.

**(D) Answer any one** (5)

1. Write a note on analytical centrifugation technique.
2. Explain in the types of centrifuges.

**Q4 (A) Write answers of following questions** (4)

- 1) Define electrophoresis.
- 2) What is meant by electrophoretic mobility?
- 3) Name the compounds which can be used for making gel in gel electrophoresis.
- 4) On what basis does separation occur in electrophoretic technique?

**(B) Answer any one.** (2)

- 1) What should be the properties of the gel in electrophoresis?
- 2) Give an account of detection methods used for detecting biomolecules in gel.

**(C) Answer any one.** (3)

- 1) Write a note on isoelectric focusing?
- 2) Write a note on types of gel used in electrophoresis.

**(D) Answer any one** (5)

- 1) Write a note on 2D gel electrophoresis.
- 2) Write a note on SDS PAGE.

**Q5(A) Write answer of following question** (4)

- 1) What is retention factor?
- 2) What is meant by partition coefficient?
- 3) What are the examples of planar chromatography?
- 4) Give some examples of column chromatography?

**(B) Answer any one.** (2)

- 1) Write a short note on TLC?
- 2) Write the applications of ion exchange chromatography?

**(C) Answer any one.** (3)

- 1) Write a short note on ion exchange chromatography.
- 2) Write a short note on affinity chromatography.

**(D) Answer any one** (5)

- 1) Write a note on HPLC.
- 2) Write a note on Gas liquid chromatography.

**ALL THE BEST**