

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION DECEMBER 2018
(Fourth Semester)**

Branch - BIOTECHNOLOGY

ANALYTICAL TECHNIQUES

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 2 = 20)

- 1 Define Molarity.
- 2 Define Biosensor.
- 3 What is meant by R₇ value?
- 4 Define electrophoresis.
- 5 What is meant by partition coefficient?
- 6 State the principle of Reverse osmosis.
- 7 State the principle of Beer's law.
- 8 Write any two applications of Atomic absorption spectroscopy.
- 9 Name any two radio isotopes used in biological research.
- 10 Define Autoradiography.

SECTION - B (25 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a Brief about any two buffers used in biological sciences.
OR
b Discuss shortly about biosensors.
- 12 a Write a short note on ion exchange chromatography.
OR
b Brief on isoelectric focusing.
- 13 a Give short notes on the process of Demineralization of water.
OR
b Write the principle of centrifugation. And add a note on analytical centrifugation.
- 14 a Illustrate with the principle of UV-visible spectrophotometer.
OR
b Discuss shortly about the applications of fluorescence spectrophotometry.
- 15 a What are the potential risks of handling radio isotope? Add the note on their safety measures.
OR
b Brief the process of solid liquid scintillation counter.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 Explain the working mechanism of pH meter.
- 17 How does Gas liquid chromatography separate the compounds? Explain.
- 18 Explain in detail about density gradient centrifugation.
- 19 Describe in detail about Infra Red Spectrophotometer.
- 20 Explain the principles and application of Auto radiography.