

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2023
(Fifth Semester)

Branch – BIOTECHNOLOGY

ANALYTICAL TECHNIQUES

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- Find the pH of 0.1N NaOH solution.
(i) 13 (ii) 10 (iii) 12 (iv) 11
- Chromatography is a physical method that is used to separate _____.
(i) Simple Mixture (ii) Complex Mixture
(iii) Viscous Mixture (iv) Metals
- Differential centrifugation is based on the differences in _____ of biological particles of different _____.
(i) Size, density (ii) Sedimentation rate, sizes and density
(iii) Size, structure (iv) Mass, size
- Beer's law states that the intensity of light decreases with respect to _____.
(i) Concentration (ii) Distance (iii) Composition (iv) Volume
- Isotopes of an element have a different number of _____.
(i) Proton (ii) Neutron (iii) Electron (iv) Atom

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- a. Classify types of buffer used in biological science.
OR
b. State the use biosensors for glucose estimation.
- a. Explain about column chromatography.
OR
b. Compare gas and high pressure liquid chromatography.
- a. Describe about ultracentrifugation.
OR
b. Explain about freeze drying.
- a. Explain about absorptiometry.
OR
b. State the importance fluorescence spectroscopy in biology.
- a. Explain about GM counter.
OR
b. Enlist use of radioisotopes in biological research.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a. Explain in detail about principle and application of ph meter.

OR

b. Discuss the types of buffers and their importance.

12. a. Discuss the principle and applications of immuno electrophoresis.

OR

b. Discuss about eletrodialysis.

13. a. Explain about analytical centrifuge.

OR

b. Discuss the method for preparation of high quality water.

14. a. Explain the concept of spectrophotometry. State its principle and applications.

OR

b. Describe about principle of atomic absorption spectrophotometry and highlights its applications.

15. a. Discuss about units for measuring radioactivity.

OR

b. Differentiate between raman and IR spectroscopy.