

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

**BSc DEGREE EXAMINATION MAY 2023**  
(Third Semester)

**Branch – BIOCHEMISTRY**  
**BIOCHEMICAL TECHNIQUES**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. What is the full form of pH?  
i) Positive hydrogen                          ii) Potential Hydrogen  
iii) Positron                                      iv) Proton of hydrogen
  
2. Which of the following is a source used in spectroscopy?  
i) LASER    ii) Tube light  
iii) Sodium vapour lamp                        iv) Tungsten lamp
  
3. In chromatography, the stationary phase can be \_\_\_\_\_ supported on a solid.  
i) Solid or liquid                                      ii) Liquid or gas  
iii) Solid only    iv) Liquid only
  
4. Which technique separates charged particles using electric field?  
i) Hydrolysis    ii) Electrophoresis  
iii) Protein synthesis                                    iv) Protein denaturing
  
5. Liquid scintillation spectrometry is a method of detecting \_\_\_\_\_  
i) X-rays    ii)  $\alpha$ -emitters  
iii)  $\beta$ -emitters     iv) Gamma-rays

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. a. Outline the pH meter.  
OR  
b. Describe the calomel electrode.
  
7. a. Explain the light spectrum and its wave length region.  
OR  
b. Summarize the molar extinction co efficient.
  
8. a. Explain the principle of HPLC.  
OR  
b. State the method of paper chromatography.
  
9. a. Summarize the factors affecting electrophoretic mobility.  
OR  
b. Describe the relation between rpm and g.
  
10. a. Bring out the applications radio isotopes in medical sciences.  
OR  
b. Narrate the radioactive decay.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

**ALL questions carry EQUAL Marks** (5 x 6 = 30)

11. a. Discuss the relationship between pKa and pH.

OR

b. Highlight the glass electrode.

12. a. Outline the instrumentation of fluorimetry.

OR

b. Point out the applications of flame photometer.

13. a. Trace the method of molecular sieve chromatography.

OR

b. Discuss the applications of column chromatography.

14. a. Discuss the principle and instrumentation of agarose gel electrophoresis.

OR

b. Highlight the differential centrifugation.

15. a. Point out the detection and measurement of radioactivity by liquid scintillation counter.

OR

b. Elucidate the autoradiography.

Z-Z-Z

END