

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

**BSc DEGREE EXAMINATION DECEMBER 2024**  
(Fourth Semester)

**Branch – MICROBIOLOGY**

**BIOINSTRUMENTATION**

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 wavelength of UV
 

(i) 100-500 nm	(ii) 200-400 nm
(iii) 500-600 nm	(iv) none
- 2 Isopycnic centrifugation is also known as
 

(i) Preparative centrifugation	(ii) ultra centrifugation
(iii) Density gradient centrifugation	(iv) Analytical centrifugation
- 3 Solvents used in thin layer chromatography
 

(i) BAW	(ii) CAW
(iii) CAVE	(iv) none
- 4 Ammonium per sulphate is an ----- agent
 

(i) reducing	(ii) oxidising
(iii) chelating	(iv) none
- 5 Scintillation detector is
 

(i) Sodium iodide with thallium	(ii) Sodium iodide with mercury
(iii) Potassium iodide with silver	(iv) none

**SECTION - B (15 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks

(5 x 3 = 15)

- 6 a What is Beer- Lamberts Law? Explain about it.  
OR
- b Explain about calomel electrodes in pH meter.
- 7 a Outline the basic principle of centrifugation.  
OR
- b Describe the instrumentation of Analytical centrifuge.
- 8 a Outline the principle of thin layer chromatography.  
OR
- b Outline the applications of gas chromatography.

**Cont...**

- 9 a Describe the significance of iso electric point in electrophoresis.  
OR  
b Outline the applications of Agarose gel electrophoresis.
- 10 a What happens during radioactive Decay? Explain about it.  
OR  
b Explain about nuclear transformation.

**SECTION -C (30 Marks)**

Answer ALL questions

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

- 11 a Discuss about the significance of electrochemical biosensors.  
OR  
b Elucidate the working principle of pH meter with a neat diagram.
- 12 a Outline the principle and instrumentation of density gradient centrifugation.  
OR  
b Sketch the principle and instrumentation of preparative centrifugation.
- 13 a Outline about Gas chromatography. Add its applications.  
OR  
b State how biomolecules are separated in HPLC.
- 14 a Summarize about various factors affect the movement of molecules in electrophoresis.  
OR  
b State the principle and applications of immune electrophoresis.
- 15 a Summarize the applications of radioisotopes in Biology.  
OR  
b Explain about scintillation counter.

Z-Z-Z

END