

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 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 Calomel electrode is
 

(i) silver electrode	(ii) mercury electrode
(iii) iron electrode	(iv) copper electrode
- 2 Principle involved in centrifugation is
 

(i) gravitational force	(ii) inertial force
(iii) both	(iv) none
- 3 Stationary phase in paper chromatography
 

(i) Cellulose	(ii) agarose
(iii) silica	(iv) all
- 4 Who coined the term immunoelectrophoresis?
 

(i) Pasteur	(ii) Graber and William
(iii) Jenner	(iv) All
- 5 Geiger Muller Counter is used to detect
 

(i) alpha particles	(ii) beta particles
(iii) gamma rays	(iv) all

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a What is a Biosensor? Explain about it.  
OR
- b Summarize the applications of Colorimeter.
- 7 a Differentiate between preparative and analytical centrifuges.  
OR
- b State the principle of ultracentrifugation.
- 8 a Outline the principle of Paper chromatography.  
OR
- b List out the applications of chromatography.

Cont...

- 9 a Sketch about the various factors affect gel electrophoresis.  
OR  
b Differentiate between stacking and separating gel.
- 10 a State the significance of quenching agents.  
OR  
b What is 3 types of radioactivity? Explain about it.

**SECTION -C (30 Marks)**

Answer ALL questions  
ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Outline the principle and instrumentation of colorimeter.  
OR  
b State the principle and instrumentation of UV –Visible spectrophotometer.
- 12 a Outline the principle and instrumentation of differential centrifugation.  
OR  
b Summarize different types of centrifuges and their applications.
- 13 a What is column chromatography? Explain its principle and applications.  
OR  
b State the significance of ion exchange chromatography.
- 14 a Summarize the steps for running a gel in Agarose gel electrophoresis.  
OR  
b Explain about the principle of SDS-PAGE.
- 15 a Outline the principle of Geiger Mueller Counter.  
OR  
b Differentiate between solid and liquid scintillation counter.

Z-Z-Z

END