22BCU310

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(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 Which of the following mixture is an example for buffer?
(i) Weak Acid and Strong Base
(ii) Strong Acid and Weak Base
(iii) Strong Acid and its conjugate base
(iv) Weak Acid and its conjugate base

2 Which technique is used for functional group identification?
(i) FTIR (ii) NMR
(iii) Electronic spectroscopy (iv) Fluorimetry

3 Find out the most suitable gas to use as carrier gas in GLC.
(i) Hydrogen (ii) Methane
(iii) Helium (iv) Nitrogen

4 Identify the following factor used for the separation in SDS-PAGE.
(i) Size (ii) Molecular Weight
(iii) Shape (iv) All of the above

5 Choose the Quencher used in GM counter from the followings
(i) Argon (ii) Alcohol
(iii) Metal chloride (iv) Thin mica

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a How will you prepare Normality, Molarity and percentage solution?
OR
b Prepare a note on pH indicators.

7 a Show the working mechanism of single cell photoelectric colorimeter.
OR
b State on the applications of IR spectroscopy.

8 a Explain in brief about affinity chromatography.
OR
b Outline about column chromatography.

9 a Highlight the basic principles of centrifugation.
OR
b Develop the step for the separation of cell organelles using centrifugation technique.

10 a Summarize the units of radioactivity.
OR
b Explain in brief about GM counter.

Cont...

SECTION -C (30 Marks)

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

11 a Discuss about Henderson–Hasselbalch equation.

OR

b Summarize the various buffer systems of blood.

12 a Explain the principles, components and applications of UV spectrometry.

OR

b Discuss about the principle, instrumentation and application of fluorimetry.

13 a Explain in detail about Paper chromatography.

OR

b Elucidate on the principle, procedure and application of GLC.

14 a Explain the principle and procedure for separation of protein using SDS - PAGE.

OR

b Infer how analytical centrifugation is used for molecular weight determination. Explain.

15 a Enumerate an essay on detection of radioisotopes with reference to scintillation counter.

OR

b Elucidate the process and application of autoradiography.

Z-Z-Z END