

**S.No. 3530**

**P 16 BC 12**

(For candidates admitted from 2016–2017 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2021.

Biochemistry

ANALYTICAL TECHNIQUES

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20)

Answer ALL the questions.

1. What is buffer?
2. Signify reference electrode?
3. Write any two ligands used in affinity chromatography.
4. Define the concept partition coefficient.
5. Define Svedberg unit.
6. Define radioactive decay.
7. Signify slab gel electrophoresis.
8. Give the role of buffers in electrophoresis.
9. Define absorption spectrum.
10. What is Maldi-Tof?

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

11. (a) Calculate the pH of the following solutions :
  - (i) 0.35M Hydrochloric acid
  - (ii) 0.35M Acetic acid.

Or

- (b) Give a short note on Ion selective electrode.
12. (a) Outline the principle and applications of HPTLC.
- Or
- (b) Briefly discuss about exclusion chromatography.
13. (a) Discuss about density gradient centrifuge.
- Or
- (b) List out the applications of radioisotopes in biological studies.
14. (a) Give a short note on isotachopheresis.
- Or
- (b) Write an account on the factors affecting electrophoretic mobility.
15. (a) Explain the working principle of luminometer and its uses.
- Or
- (b) State and explain Beer-Lambert's law.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

16. Give an account on the different homogenization and cell disruption techniques.
17. Detail the principle, procedure and applications of affinity chromatography
18. Elaborate on GM counter and its applications.
19. Discuss in detail about types of paper electrophoresis.
20. Explain the principle, mechanism and applications of UV-visible spectroscopy.
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