



**Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University) Coimbatore-641 043**

Bachelor's Degree Examination – April/May - 2019

Semester II

Class : I UG

Time : 3 hours

Major: Biochemistry and Biotechnology

Max Marks: 100

18BBCC03- Techniques in Biochemistry

PART- A

(10X1= 10)

Choose the correct answer

1. A substance that yields protons is _____
a. Acid b. Base c. Neutral solution d. Suspension
2. Centrifuge used in the characterization of macromolecule and operates at high gravitational force is _____.
a. Desk top centrifuge b. Ultra centrifuge
c. High speed centrifuge d. Analytical centrifuge
3. In paper chromatography, the paper commonly used consists of highly purified _____.
a. Cellulose b. Collagen c. Lectin d. Starch
4. Which one has highest adsorbing power _____?
a. Starch b. Powdered cellulose c. Silica gel d. Alumina
5. Which of the following chromatography is called molecular sieving?
a. Ion exchange b. Gel filtration c. Affinity d. Adsorption
6. Type of chromatography which uses a column of ligands is _____.
a. Affinity chromatography b. Adsorption chromatograph
c. Ion exchange chromatography d. Gel fractionation chromatography
7. The migration of charged particles through the solution under the influence of an electric field is called as _____.
a. Ion exchange chromatography b. Electrophoresis
c. Colorimetry d. Autoradiography
8. The technique used in determination of DNA sequences _____.
a. TLC b. Gel electrophoresis c. HPLC d. PCR
9. The emission of radiation is known as _____.
a. A radioactive decay b. Negative emission
c. Positive emission d. proton emission
10. Phenomenon of fluorescence due to excitation by radioactivity is known as _____.
a. Photo activation b. Scintillation
c. Radioactivity decay d. Autoradiography

Part -B

5x6=30

Answer the following

(Answer should not exceed 400 words or two pages)

11. a) Define buffer. Describe the buffer system of body fluids.
(Or)
11. b) Give an account of analytical ultracentrifugation and its applications.
12. a) Define paper Chromatography. Illustrate the separation of amino acids by paper chromatography.
(Or)
12. b) Define adsorption Chromatography. Write short notes on paper adsorption chromatography.
- 13 a) Give a detailed note on Gel filtration Chromatography and its applications
(Or)
- 13 b) Explain the purification of enzyme by affinity chromatography.
- 14 a) Describe electrophoresis. Write a short note on the types of electrophoresis.
(Or)
- 14 b) Explain the separation of proteins by paper electrophoresis.
- 15 a) Describe the principle of colorimeter- Beer and Lambert's law.
(Or)
- 15 b) Demonstrate the principle and applications of absorption spectrophotometer.

Part -C

5x12=60

Answer the following

(Answer should not exceed 800 words or four pages)

16. a) Define pH_o . Derive the Henderson – Hasselbalch equation and give its significance.
(Or)
16. b) Define centrifugation . Explain the basic principle of sedimentation. Differentiate between desktop and large capacity refrigerated centrifuges.
- 17.a) Illustrate the principle, mechanism, advantage and application of Thin Layer Chromatography.(TLC).
(Or)
17. b) Explain in detail, the principle and applications of ion exchange chromatography.
- 18.a) Discuss in detail, Gas chromatography and its applications.
(Or)
18. b) Explain the principle and elementary concepts of HPLC.
19. a) Explain the principle and applications of Poly Acrylamide Gel Electrophoresis.
(Or)
19. b) Explain the immune electrophoresis . Discuss how it is performed for antigen identification in disease diagnosis.
20. a) Explain the principle and applications of fluorimetry techniques.
(Or)
20. b) Define radioactive isotopes. Explain the role of radio isotopes in clinical diagnosis and therapy.
