Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – June / July 2021
II Semester

Class : I UG **Time : 3 Hours**
Major : Biochemistry and Biotechnology **Max. Marks : 100**

18BBCC03 Techniques in Biochemistry

Part A **10 x 1 = 10**
Choose the Correct Answer

1. Which of the following is NOT a type of centrifugation? CO1 K1
   a. hydrocyclone b. tubular centrifuge
   c. microfltration d. disk stack separator

2. At what speed do you centrifuge blood? CO1 K1
   a. 2200-2500 rpm b. 3000-3200 rpm
   c.1000-1500rpm d. 4000rpm

3. Chromatography is a physical method that is used to separate and analyse. CO2 K2
   a. simple mixture b. complex mixture
   c. viscous mixture d. Metals

4. In which type of chromatography phase held in a narrow tube and the mobile phase is forced through it under pressure? CO2 K2
   a. column chromatography b. planar chromatography
   c. liquid chromatography d. gas chromatography

5. Which technique separates charged particles using electric field? CO3 K2
   a. hydrolysis b. electrophoresis
   c. protein synthesis d. protein denaturing

6. When is electrophoresis not used? CO3 K3
   a. separation of proteins b. separation of aminoacids
   c. separation of lipids d. separation of nucleic acids

7. Beer Lamberts law gives the relationship between which of the following: CO4 K2
   a. reflected radiation and concentration
   b. scattered radiation and concentration
   c. energy absorption and concentration
   d. energy absorption and reflected radiation

8. Lamberts law states that the intensity of light decreases with respect to CO4 K2
   a. concentration b. distance
   c. composition d. volume

9. Particles having the same atomic number but different mass number are called CO5 K1
   a. beta particles b. neutrons
   c. isotope d. isomer

10. One atomic mass unit is equivalent to CO5 K1
   a. 91.4 MeV b. 251.2 MeV
   c. 120.4 MeV d. 892.4 MeVl

Part B **5 x 6 = 30**

Answer ALL questions

Each answer should not exceed 400 words or two pages

11.a. What are buffers? Discuss the importance of buffer systems of body fluids. CO1 K1

(or)

11.b. Derive Henderson Hasselbach equation. CO1 K1

12.a. What is chromatography? Explain is types with principle. CO2 K2

(or)

12.b. How are phospholipids separated using thin layer chromatography? CO2 K2

13.a. State the principle and applications of HPLC. CO3 K1

(or)

13.b. How enzymes are separated using affinity chromatography? CO3 K2

14.a. Brief out the importance of isoelectric focusing. CO4 K3

(or)

14.b. Write a note on immunoelectrophoresis. List out its applications. CO4 K3

15.a. List out the precautions to be taken in handling radioisotopes. CO5 K4

(or)

15.b. List out the uses of radioactive isotopes in clinical diagnosis. CO5 K2

Part C **5 x 12 = 60**

Answer ALL questions

Each answer should not exceed 800 words or four pages

16.a. Describe how the cell organelles can be separated by differential centrifugation. CO1 K2

(or)

16.b. Explain how pH can be determined using glass electrode. CO1 K2

17.a. Explain the separation of amino acids by ion exchange chromatography. CO2 K2

(or)

17.b. Distinguish between the cation and anion exchangers with diagram. CO2 K2

18.a. Discuss the principle, technique and applications of gelfiltration chromatography. CO3 K3

(or)

18.b. Explain the principle and separation of fatty acids by gas chromatography. CO3 K2

19.a. How the proteins are separated by SDS PAGE? CO4 K2

(or)

19.b. Explain the principle and types of agarose gel electrophoresis. CO4 K1

20.a. Explain the principle, applications and description of UV visible spectroscopy. CO5 K3

(or)

20.b. Describe the principle, instrumentation ,technique and applications of atomic absorption spectroscopy. CO5 K3

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