DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)
(For Candidates admitted from 2019-2020 onwards)
PG DEGREE EXAMINATIONS APRIL - 2021
M.Sc., - BIOTECHNOLOGY
ADVANCED INSTRUMENTATION FOR BIOTECHNOLOGY

Time: 3 Hrs   Max.Marks: 75

PART - A

CHOOSE THE CORRECT ANSWER   (10X1=10)

1. Who had inverted the pH scale?

   a) S.P.L.Soreson   b) Benjamin Franklin c) Henry Moseley   d)Wilhelm Rontgen

2. Molar absorbtivities of compounds exhibiting charge transfer absorption are.........

   a) Small   b) Moderate   c) Large   d) None of these

3. Which of the following relationships between absorbance and %transmittance is incorrect?

   a) $A=\log_{10} 100/\% T$ b) $A=2-\log_{10} \% T$ c) $A=\log_{10} 1/ T$ d) All are correct

4. In the past,IR spectra had to be acquired one wavelength at a time,which took a long time.today quick spectra is due to the ....

   a) The fourier transfer algorithm allows us to scan all frequencies at once

   b) Light is faster today that it used to be

   c) Absence of broad spectrum of wavelength

   d) None of the above

5. In the equation,$A=\varepsilon bc$, what quantity is represented by "ε"?

   a) Absorbtivity   b) Molor absorbtivity   c) Path length   d) None of these

6. Driving force in case of filtration by a centrifuge is the..........

   a) Speed of the centrifuge.   b) Centrifugal pressure exerted by liquid.

   c) Narrow diameter of the vessel.   d) Formation of highly porous cake.

7. The speed of migration of ions in electric field depends upon

   a) Shape and size of molecule

   b) Magnitude of charge and shape of molecule

   c) Magnitude of charge shape and mass of molecule

   d) Magnitude of charge and mass of molecule

8. Agarose can be extracted from which of following?

   a) Lycazusican esculentum   b) Ficum benghalensis

   c) Gracilaria esculentus   d) Agrostis stolonifera

9. Thin layer chromatography is

    a) Partition chromatography   b) Electrical mobility of ionic species

    c) Adsorption chromatography   d) None of the above

10. In reverse phase chromatography, the stationary phase is made

    a) Non-polar   b) Polar   c) Either non-polar or polar   d) None of these

PART- B

ANSWER ALL THE QUESTIONS   **(5X7=35)**

11. a) Write about preparation of buffers and titration of acids.

        (OR)

   b) Explain about pH indicators.

12. a) Difference between spectrophotometer and colorimeter.

        (OR)

   b) Write short notes on thermagravimetric analysis.

13. a) Explain about ultracentrifugation and its applications.

        (OR)

   b) An account on analytical centrifugation.

14. a) Explain about Iso electrifocusing.

        (OR)

   b) List out the merits and demerits of electrophoresis.

15. a) Explain about the hydrophobic interaction.

        (OR)

   b) Explain about HP-TLC and its applications.

PART-C

ANSWER ANY THREE QUESTIONS   **(3X10=30)**

16. Define macromolecules. Estimation of carbohydrates.

17. Define Beer's Lambert's. Explain about UV-Spectroscopy and atomic spectroscopy.

18. Determination of molecular weight by sedimentation velocity.

19. Explain about the electrophoresis.

20. Explain about the HPLC and its applications.