



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

Master's Degree Examination – June 2021
IV Semester

Class : II M.Sc.
Major : Botany

Time: 3 Hours
Max. Marks: 100

17MBOC21- Bioinstrumentation and Biostatistics

PART A

10 x 1 = 10

Choose the Correct Answer

- Resolving power of a microscope is a function of CO1K1
 - Wavelength of light used
 - Numerical aperture of lens system
 - Refractive index
 - Wavelength of light used and numerical aperture of lens system
- Who discovered freeze drying? CO1K1
 - Jacques-Arsened'Arsonval
 - Charles Chamberland
 - Willis Carrier
 - Clarence Birdseye
- Liquid chromatography can be performed in which of the following ways? CO1K1
 - Only in columns
 - Only on plane surfaces
 - Either in columns or on plane surfaces
 - Neither in columns nor on plane surface
- Northern hybridization is CO1K2
 - used to identify a specific protein
 - used to identify a specific DNA
 - used to identify a specific RNA
 - used to identify both DNA and RNA
- Beer's Law states that CO1K2
 - Absorbance is proportional to both the path length and concentration of the absorbing species
 - Absorbance is proportional to the log of the concentration of the absorbing species
 - Absorbance is equal to P_0 / P
 - None of the above
- X-rays are generated by CO2K2
 - Geiger tube
 - Goniometer
 - Coolidge tube
 - Rotameter
- A Frequency Polygon is: CO2K2
 - A statistical indicator that shows the scattering of a series of values
 - A graph representing by a broken line the absolute frequencies of classes of a data series
 - A graph that contains less information than the corresponding histogram
 - None of the above
- Of the following sampling methods, which is a probability method? CO3K2
 - Judgement
 - Quota
 - Simple random
 - Convenience
- The median of a series of numerical values is: CO4K1
 - Equal to the average
 - A graph or chart
 - A number
 - A frequency table
- Correlation coefficient is a number between CO4K1
 - +1 and +2
 - 0 and +1
 - 1 and 0
 - 1 and +1

Part B
Answer ALL questions
Each answer should not exceed 400 words or two pages

5 x 6 = 30

- | | |
|--|-------|
| 11.a. Explain about light microscopy. | CO1K1 |
| (or) | |
| 11.b. Write the mechanism and applications of Rotary evaporator. | CO1K1 |
| 12.a. Differentiate Paper chromatography and TLC. | CO2K1 |
| (or) | |
| 12.b. With illustration explain Western blotting. | CO2K2 |
| 13.a. List out the thermal and optical properties. | CO2K2 |
| (or) | |
| 13.b. Write an account on UV spectrophotometer. | CO2K3 |
| 14.a. List the scope and limitations of Biostatistics. | CO3K2 |
| (or) | |
| 14.b. Explain briefly about frequency distribution. | CO3K2 |
| 15.a. What are the similarities and differences between mean, median and mode? | CO4K2 |
| (or) | |
| 15.b. Define i) Standard deviation and ii) Standard error. | CO4K1 |

Part C
Answer ALL questions
Each answer should not exceed 800 words or four pages

5 x 12 = 60

- | | |
|--|-------|
| 16.a. Write the mechanism involved in electron microscopy. | CO1K1 |
| (or) | |
| 16.b. Discuss in detail about Lyophilisation. | CO1K1 |
| 17.a. Differentiate HPLC and GLC. | CO1K3 |
| (or) | |
| 17.b. Explain about Northern and Southern blotting techniques. | CO2K2 |
| 18.a. Discuss about Beer-Lambert Law. | CO2K2 |
| (or) | |
| 18.b. Compare NMR and X-ray crystallography. | CO3K3 |
| 19.a. Explain the types of diagram. | CO3K2 |
| (or) | |
| 19.b. Classify the data and write its tabulations. | CO3K2 |
| 20.a. Explain in detail about correlation and regression. | CO4K2 |
| (or) | |
| 20.b. Differentiate t- test, F-test and Chi-square test. | CO4K4 |
