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School of Biological and Life sciences

Bachelor of Science Honours in Biomedical Science

Mid Term Examination - May 2024

Duration : 90 Minutes

Max Marks : 50

Sem IV - P1UC401T - Bioinstrumentation and BiotechniquesGeneral Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Define pH. K2 (2)
- 2) State Beer Lamberts Law. K1 (3)
- 3) Compare and contrast bright-field microscopy and phase-contrast microscopy. K2 (4)
- 4) How does the use of immersion oil in microscopy contribute to improved resolution? K2 (6)
- 5) Explore the applications of fluorescence microscopy in cell biology and molecular biology research. K3 (6)
- 6) What is the fundamental principle of dark field microscopy, and how does it differ from bright-field microscopy in terms of illumination and image formation? K3 (9)
- 7) Explain the concept of fluorescence microscopy. What are fluorophores, and how are they used to label specific structures within a cell or tissue? K4 (8)
- 8) Discuss the principles of ion exchange chromatography and affinity chromatography. How does the charge of analytes influence their interaction with the stationary phase in ion-exchange chromatography? K4 (12)

OR

Examine the principles of affinity chromatography and size exclusion chromatograph. How does affinity chromatography technique exploit specific interactions between biomolecules for purification and isolation? K4 (12)