



PG (CBCS)  
M.Sc. Semester-I Examination, 2022

MLT  
PAPER: MLT 104  
(ADVANCE MEDICAL LABORATORY TECHNIQUES)

Full Marks: 40

Time: 2 Hours

**Group-A**

Answer any Four questions out of following:

4X2=8

1. What is meant by isocratic state?
2. What is nested PCR?
3. What is the NA value of oil immersion objective lens?
4. State the basic difference between rate zonal and isopycnic centrifugation.
5. Define resolving power of a microscope.
6. Write the function of  $\beta$ -mercapto ethanol on protein structure.
7. Can you electrophorese DNA in poly-acrylamide gel? Justify as per your answer.
8. Define electrophoretic mobility.

**Group-B**

Answer any Four questions out of following:

4X4=16

9. What is limit of resolution? State the importance of oil immersion lens?  
1+3
10. How does sonicator work?
11. Briefly describe the Lambert's and Beer's law.
12. What is relative centrifugal field? Why rcf is more important than rpm?  
1+3
13. Why two wavelength of light is used in ELISA reader? State the name of four enzymes used in labelling purpose of antibody. 2+2
14. Write the process of Southern blotting with diagrammatic representation.
15. Differentiate TrueNAT and CBNAAT test mentioning its significance.
16. How does the autoanalyzer work?

**GROUP-C**

Answer any Two questions out of following:

8X2=16

17. State the sample preparation process for 'Scanning Electron Microscope'. Discuss the principle of 'Transmission Electron Microscope'.  
4+4

P.T.O.

(2)

18. Briefly describe the Maxam and Gilbert's chemical degradation method of DNA sequencing. How is the DNA library prepared for next generation sequencing? 5+3
19. Differentiate between normal phase and reverse phase HPLC. State the application of HPLC in Biomedical science. Does gradient elution give any advantages over isocratic elution in HPLC? Justify as per your answer. 2+3+3
20. Describe the reaction cycle of a PCR reaction where the  $T_m$  value of primers are 62 °C. Why TaqMan probe method is considered more accurate compared to SyBr green dye method? 4+4



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