

M.Sc. 4th Semester Examination, 2024

**BIO-MEDICAL LABORATORY SCIENCE
AND MANAGEMENT**

(Advanced Techniques on Laboratory Science)

PAPER – BML-401

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

*Candidates are required to give their answers in
their own words as far as practicable*

GROUP – A

Answer any **four** questions from the following :

2 × 4

1. Write two uses of semi-auto-analyzer in bio-medical science.
2. What are the augmented leads of ECG ?

3. Write the general properties of stem cell.
4. Violet and yellow coloured flame is produced from which element in flame photometry ?
5. Distinguish between primer and probe.
6. Write the diagnostic application of ELISA reader.

GROUP—B

Answer any **four** questions from the following : 4 × 4

7. Write a short note about differential centrifugation technique. 4
8. Write the principle and applications of flame photometry. 2 + 2
9. Why is adult stem cell preferable to embryonic stem cell ? 4

10. What are the advantages and disadvantages of double-beam spectrophotometer ? 2 + 2
11. Why is real-time PCR called quantitative ? Schematically present the TaqMan probe. 2 + 2
12. Discuss about the diagnostic application of PCR. What is multiplex PCR ? 2 + 2

GROUP – C

Answer any **two** questions from the following : 8 × 2

13. State the placement of six different chest leads in ECG. Briefly discuss impulse conductance through the heart. 4 + 4
14. Discuss about the different components of auto analyzer with block diagram. What are the differences between totipotent pluripotent and multipotent stem cells ? 4 + 4

15. Diagrammatically represent the working principle of FACS. How do molecular weight of nucleic acids correlate with migration through agarose gel electrophoretic condition? 4 + 4
16. Write the principle of Western blot technique. Discuss about the different components of UV-spectro-photometer. 4 + 4

[Internal Assessment — 10 Marks]
