

2023

M. Sc.

4th Semester Examination

**BIOMEDICAL LABORATORY SCIENCE
AND MANAGEMENT**

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.*

Illustrate the answers wherever necessary.

*Answer from **all** the Groups as directed.*

GROUP—A

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

2×4=8

1. What is isoelectric pH? 2

(2)

2. Define preparative chromatography. 2
3. Define Einthoven's triangle. 2
4. Why is formaldehyde used in northern blot? 2
5. Why are ddNTPs used in Sanger sequencing? 2
6. What is pluripotent stem cell? 2

GROUP—B

Answer *any four* questions from the following :

4×4=16

7. State the use of skim milk powder and SDS in western blot and PAGE with justification. 4
8. Explain the equation $k = \frac{tR'}{tM} = \frac{(tR - tM)}{tM}$

where k = retention factor

tR = retention time

tM = column hold up time

tR' = adjusted retention time

4

(3)

9. What are meant by the melting and annealing temperature of nucleic acid? Which elements emit violet and yellow colour wavelengths in flame photometry? 2+1+1
10. Write a brief note on 16S rRNA sequencing. 4
11. Write briefly about density gradient centrifugation. 4
12. Compare between double beam and single beam spectrophotometers in terms of working principles, advantages and disadvantages. 4

GROUP—C

Answer *any two* questions from the following :

8×2=16

13. Discuss briefly about different EEG waves. Write the applications of EEG. Name the unipolar limb leads of ECG. 4+2+2
14. Write the basic working principle of paper chromatography with its application. 4+4=8

(4)

15. Elaborate the chemistry used in probe-based real-time PCR. Write the principle of operation of autoanalyzer. Write one application of it.

4+3+1

16. Write the three unique properties of stem cells. Briefly discuss about the stem cell therapy.

3+5

[Internal Assessment : 10 Marks]

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