2022

M.Sc.

4th Semester Examination

BIOMEDICAL LABORATORY SCIENCE AND MANAGEMENT

PAPER—BML-401

ADVANCE TECHNIQUES IN LABORATORY SCIENCE

Full Marks : 50

Time : 2 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers wherever necessary.

Group—A

Answer any *four* questions. 4×2

1. Why is formaldehyde uses in 'Northern blot'?

2. Write the use of sonicator.

3. Give example of one stationary and one mobile phase used in TLC.

4. What are progenitor cells ?

5. Write the principle of flame photometry.

6. What is autoradiography ?

Group—B

Answer any *four* questions. 4×4

7. Classify different types of electrophoresis with its application.

8. Define retention time ? How do you calculate it for column chromatography ? 2+2

9. Write the application of lyophilizer. Differentiate between sandwich ELISA and competitive ELISA. 2+2

10. Write briefly about 'unipolar and Bipolar' ECG leads.

11. Discuss in brief about density gradient centrifugation.

12. What are the advantages of using sequence-based identification of pathogen in clinical microbiology laboratory ?

Group—C

Answer any *two* questions. 2×8

13. How do you detect HIV-1 by Western blot technique — discuss briefly. Why is blocking step essential for this technique ? 6+2

14. Discuss the basic principle of GLC with the help of a diagram. Differentiate normal phase and reverse phase HPLC. 5+3

15. Why are adult stem cells preferred over embryonic stem cells ? Discuss briefly about stem cell therapy. 3+5

16. Elaborate the chemistry used in probe based and non-probe based real-time PCR.

[Internal assessment – 10]

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