

M.Sc. 1st Semester Examination, 2024
BIOMEDICAL LABORATORY SCIENCE
AND MANAGEMENT

PAPER – BML-101

Full Marks : 50

Time : 2 hours

Answer **all** questions

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 : 2×4

1. What is PPE ?
2. Differentiate between interassay and intraassay for Elinical sample analysis.

(Turn Over)

(2)

3. Define quality assurance as per WHO recommendation.
4. Write any two causes of chemical hazards in the laboratory.
5. How do you calibrate your micropipette ?
6. What is the importance of animal welfare ?

GROUP – B

Answer any **four** questions : 4 × 4

7. Write the code of good laboratory practices in the laboratory. Draw the symbol of biohazard. 3 + 1
8. Elaborate your idea about 5Q Network.
9. A population for HIV screening diagnostic test showed True positive value of 5 whereas True negativity is 16 times more than True

positivity whereas False negativity is 40 times less than True negativity. If the population number is 1000 then calculate sensitivity, specificity and predictive values of the test.

10. Values of blood glucose (mg/dl) control in optimum conditions are 120, 122, 124, 121, 125, 119, 120, 122, 121, 123 whereas in routine conditions these values are 125, 127, 129, 128, 120, 124, 121, 123, 130, 132. Interpret your results for this retrospective phase of QC assessment.
11. Biomedical research proposals with less than minimal risk are exempted from review by IEC. Explain.
12. Name different categories of biomedical waste. What type of fire extinguisher is required to extinguish electrical fire. 3 + 1

GROUP – C

Answer any **two** questions : 8 × 2

13. Discuss briefly about proficiency testing rechecking in quality control. Name eight elements of TQM. What are the different types of errors generated in a laboratory ?
3 + 2 + 3
14. Draw the flow chart of Westgard rule. Plot a Levy Jenning chart of following cholesterol control samples (mg/dl) for 15 consecutive days : 180, 200, 210, 190, 200, 220, 190, 200, 220, 179, 230, 162, 210, 225, 220 and interpret your results. 2 + 6
15. Discuss about the '4R' concept in animal experiments. State the three major ethical principles of Belmont report. 5 + 3
16. Discuss briefly the BSL-2 and BSL-3 types of laboratory practices. What components are present in laboratory first-aid kit. 3 + 3 + 2

[Internal Assessment — 10 Marks]
