

**PRACTICE SET**  
**End Semester Examination, December-2025**

**Program:** BMLT

**Semester:** I

**Course:** Laboratory Equipment & Glassware

**Course Code:** 42ABMT002

<b>Course Outcomes</b>	<b>Description</b>
<b>CO1</b>	Understanding for applications of commonly used laboratory glassware's and equipment.
<b>CO2</b>	Concept of basic laboratory safety and code of conduct for medical laboratory personnel.
<b>CO3</b>	Knowledge of hazardous reagents and precautions in handling these chemicals.
<b>CO4</b>	Awareness of recording of various physiological parameters and their analysis.
<b>CO5</b>	Techniques for collection of various types of specimens.

**SECTION – A**

**[30 X 05=150]**

1. Define laboratory glassware and mention two common types. [Unit-I, CO1, Remember, LOT]
2. Explain the importance of proper labeling in laboratories. [Unit-I, CO1, Understand, LOT]
3. Describe three types of laboratories with examples. [Unit-I, CO1, Remember, LOT]
4. List essential personal protective equipment (PPE) used in labs. [Unit-I, CO1, Remember, LOT]
5. Analyze how IKS (Indian Knowledge System) contributes to lab discipline. [Unit-I, CO1, Analyze, HOT]
6. Suggest improvements for minimizing accidents in laboratories. [Unit-I, CO1, Create, HOT]
7. Differentiate between analytical and top-loading balances. [Unit-II, CO2, Analyze, HOT]
8. Explain the principle and working of a micropipette. [Unit-II, CO2, Understand, LOT]
9. Identify common errors in volumetric measurement. [Unit-II, CO2, Remember, LOT]
10. Illustrate the process of calibration in pipettes. [Unit-II, CO2, Understand, LOT]
11. Analyze how measurement errors affect laboratory accuracy. [Unit-II, CO2, Analyze, HOT]
12. Design a simple checklist to ensure correct use of measuring instruments. [Unit-II, CO2, Create, HOT]
13. Define biomedical waste and list its categories. [Unit-III, CO3, Remember, LOT]
14. Explain the protocol for handling chemical spills. [Unit-III, CO3, Understand, LOT]
15. Describe the segregation system used in biomedical waste management. [Unit-III, CO3, Remember, LOT]
16. Identify major hazards related to laboratory glass breakage. [Unit-III, CO3, Remember, LOT]
17. Evaluate the effectiveness of current biomedical waste rules in India. [Unit-III, CO3, Evaluate, HOT]
18. Propose an eco-friendly waste management plan using IKS principles. [Unit-III, CO3, Create, HOT]

19. Define pulse rate and its clinical importance. [Unit-IV, CO4, Remember, LOT]
20. Explain the method to record respiratory rate. [Unit-IV, CO4, Understand, LOT]
21. Describe the process of auscultation for heart sounds. [Unit-IV, CO4, Remember, LOT]
22. State the normal ranges of body temperature and respiration. [Unit-IV, CO4, Remember, LOT]
23. Analyze the relationship between pulse rate and body temperature during fever. [Unit-IV, CO4, Analyze, HOT]
24. Create a tabular chart to record physiological parameters efficiently. [Unit-IV, CO4, Create, HOT]
25. Define phlebotomy and its objectives. [Unit-V, CO5, Remember, LOT]
26. Explain the difference between serum and plasma. [Unit-V, CO5, Understand, LOT]
27. Illustrate the steps of blood collection using venipuncture. [Unit-V, CO5, Apply, LOT]
28. Identify the types of vials used for different tests. [Unit-V, CO5, Remember, LOT]
29. Evaluate potential errors during specimen collection. [Unit-V, CO5, Evaluate, HOT]
30. Design a checklist for safe phlebotomy practice. [Unit-V, CO5, Create, HOT]

### **SECTION – B**

31. Discuss various types of laboratory glassware and their uses. [Unit-I, CO1, Understand, LOT]
32. Explain laboratory safety protocols and PPE with examples. [Unit-I, CO1, Understand, LOT]
33. Analyze how cultural practices under IKS enhance lab safety standards. [Unit-I, CO1, Analyze, HOT]
34. Describe the principles and use of pipettes, burettes, and dispensers. [Unit-II, CO2, Remember, LOT]
35. Explain calibration procedures for analytical balances and justify their necessity. [Unit-II, CO2, Understand, LOT]
36. Evaluate the influence of technological advancement on accuracy in lab measurement. [Unit-II, CO2, Evaluate, HOT]
37. Describe the steps for chemical waste segregation and disposal. [Unit-III, CO3, Remember, LOT]
38. Discuss biomedical waste management and its importance in healthcare settings. [Unit-III, CO3, Understand, LOT]
39. Analyze a real-world example of a lab accident and suggest preventive strategies. [Unit-III, CO3, Analyze, HOT]
40. Explain methods for recording body temperature, pulse, and respiration. [Unit-IV, CO4, Understand, LOT]
41. Apply the principles of artificial respiration and discuss its role in emergencies. [Unit-IV, CO4, Apply, LOT]
42. Evaluate the accuracy and limitations of manual vs. electronic recording systems. [Unit-IV, CO4, Evaluate, HOT]
43. Discuss the entire process of blood specimen collection and labeling. [Unit-V, Understand, LOT]
44. Apply standard precautions to prevent infection during phlebotomy. [Unit-V, CO5, Apply, LOT]
45. Evaluate errors in serum separation and propose corrective measures. [Unit-V, CO5, Evaluate, HOT]

### **SECTION – C**

46. Describe in detail the structure, use, and maintenance of laboratory glassware and equipment. [Unit-I, CO1, Remember, LOT]
47. Critically analyze the integration of Indian Knowledge System (IKS) in laboratory management and its modern relevance. [Unit-I, CO1, Analyze, HOT]
48. Discuss in detail various measuring and dispensing instruments used in laboratories and their calibration methods. [Unit-II, CO2, Understand, LOT]
49. Design an innovative measurement validation plan for quality assurance in clinical laboratories. [Unit-II, CO2, Create, HOT]

50. Summarise on safety rules, emergency response protocols, and waste segregation methods in detail. [Unit-III, CO3, Understand, LOT]
51. Evaluate current biomedical waste management systems in India and suggest improvements integrating traditional ecological wisdom. [Unit-III, CO3, Evaluate, HOT]
52. Describe the procedure, interpretation, and clinical importance of recording pulse, respiration, and heart sounds. [Unit-IV, CO4, Remember, LOT]
53. Analyze how technology has transformed the measurement and analysis of physiological parameters. [Unit-IV, CO4, Analyze, HOT]
54. Explain in detail the principles, precautions, and errors in phlebotomy procedures. [Unit-V, CO5, Understand, LOT]
55. Create a comprehensive Standard Operating Procedure (SOP) for specimen collection, separation, and storage. [Unit-V, CO5, Create, HOT]

**SummarySheet**

**CO Wise**

CO	Q.No	Marks
CO1	1,2,3,4,5,6,31,32,33,46,47	100
CO2	7,8,9,10,11,12,34,35,36,48,49	100
CO3	13,14,15,16,17,18,37,38,39,50,51	100
CO4	19,20,21,22,23,24,40,41,42,52,53	100
CO5	25,26,27,28,29,30,43,44,45,54,55	100
<b>Total</b>		<b>500</b>

**Unit Wise**

Unit	Q.No	Marks
Unit- I	1,2,3,4,5,6,31,32,33,46,47	100
Unit- II	7,8,9,10,11,12,34,35,36,48,49	100
Unit- III	13,14,15,16,17,18,37,38,39,50,51	100
Unit- IV	19,20,21,22,23,24,40,41,42,52,53	100
Unit- V	25,26,27,28,29,30,43,44,45,54,55	100
<b>Total</b>		<b>500</b>

**Blooms Taxonomy Level (BTL) Wise**

BTL	Q.No.	Marks
LOT	1,2,3,4,8,9,10,13,14,15,16,19,20,21,22,25,26,27,28,31,32,34,35,37,38,40,41,43,44,46,48,50,52,54	295
HOT	5,6,7,11,12,17,18,23,24,29,30,33,36,39,42,45,47,49,51,53,55	205
<b>Total</b>		<b>500</b>

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**Disclaimer:** - This is a Practice Set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.