

PRACTICE SET
End Semester Examination, May 2026

Program: BMRIT
Semester: II

Subject: Basics of Biochemistry
Subject Code: 42BBMRIT011

Course Outcome:

After the successful completion of the course, the students will be able to:

Course Outcomes	Description
CO1	Understand the Nutritional importance of carbohydrate, lipids, proteins, vitamins and minerals.
CO2	To study about Acid–Base Balance, Water & Electrolyte balance.
CO3	Understand the fundamental chemistry and the different functional tests like LFT (Liver function test), RFT (Renal function test).
CO4	Understand the applications of radioisotopes.

- 1. Section A : 10 Marks Question covering All units (Total No. of questions 30)**
- 2. Section B : 20 Marks Question covering All units (Total No. of questions 10)**

UNIT- I

Section - A (10 marks)

1. Define calorific value and nitrogen balance.
(CO1, LOT, Remember)
2. Explain Respiratory Quotient (RQ) and Basal Metabolic Rate (BMR).
(CO1, LOT, Understand)
3. Describe the nutritional importance of carbohydrates and proteins.
(CO1, LOT, Remember)
4. Apply the concept of balanced diet in maintaining human health.
(CO1, LOT, Apply)
5. Analyze the role of lipids and vitamins in metabolic disorders.
(CO1, HOT, Analyze)
6. Evaluate the advantages and limitations of parenteral nutrition.
(CO1, HOT, Evaluate)

Section - B (20 marks)

7. Analyze the relationship between calorific value, BMR, and energy balance in maintaining body weight.
(CO1, HOT, Analyze)
8. Evaluate the impact of deficiency and excess of vitamins and minerals on human health with suitable examples.
(CO1, HOT, Evaluate)

UNIT- II

Section - A (10 marks)

9. Define pH and buffers of body fluids.
(CO₂, LOT, Remember)
10. Explain Henderson-Hasselbalch equation.
(CO₂, LOT, Understand)
11. Describe acid-base regulation in the human body.
(CO₂, LOT, Remember)
12. Apply the concept of electrolyte balance in clinical conditions.
(CO₂, LOT, Apply)
13. Analyze acid-base disturbances (acidosis and alkalosis) with examples.
(CO₂, HOT, Analyze)
14. Evaluate the clinical significance of anion gap in diagnosis.
(CO₂, HOT, Evaluate)

Section - B (20 marks)

15. Analyze the role of buffer systems in maintaining blood pH under normal and abnormal conditions.
(CO₂, HOT, Analyze)
16. Evaluate the effectiveness of Henderson-Hassel Balch equation in clinical diagnosis of acid-base disorders.
(CO₂, HOT, Evaluate)

UNIT- III

Section - A (10 marks)

17. Define Liver Function Test (LFT) and Renal Function Test (RFT).
(CO₃, LOT, Remember)
18. Explain the principles of diagnostic enzymology.
(CO₃, LOT, Understand)
19. Describe lipid profile and blood glucose estimation.
(CO₃, LOT, Remember)
20. Apply the interpretation of urine analysis in clinical diagnosis.
(CO₃, LOT, Apply)
21. Analyze the clinical importance of cardiac and tumor markers.
(CO₃, HOT, Analyze)
22. Evaluate the diagnostic significance of GTT and abnormal biochemical values.
(CO₃, HOT, Evaluate)

Section - B (20 marks)

23. Analyze the interpretation of Liver Function Tests (LFT) in diagnosing hepatic disorders.
(CO₃, HOT, Analyze)
24. Evaluate the diagnostic significance of Renal Function Tests (RFT) in kidney diseases.
(CO₃, HOT, Evaluate)

UNIT- IV

Section - A (10 marks)

25. Define radioisotopes and their properties.
(CO₄, LOT, Remember)
26. Explain the basic principles of radioisotopes in medicine.
(CO₄, LOT, Understand)
27. Describe applications of radioisotopes in diagnosis and therapy.
(CO₄, LOT, Remember)

28. Apply safety precautions in handling radioactive materials.
(CO4, LOT, Apply)
29. Analyze the hazards of radiation exposure on human health.
(CO4, HOT, Analyze)
30. Create a clinical chart showing applications of radioisotopes in LFT, RFT, and enzymology.
(CO4, HOT, Create)

Section - B (20 marks)

31. Analyze the biological effects and hazards of radiation exposure on different body systems.
(CO4, HOT, Analyze)
32. Design a safety protocol for handling radioisotopes in a clinical laboratory setup.
(CO4, HOT, Create)

Summary Sheet

CO Wise

CO	Q. No	Marks
CO1	1,2,3,4,5,6,7,8	100
CO2	9,10,11,12,13,14,15,16	100
CO3	17,18,19,20,21,22,23,24	100
CO4	25,26,27,28,29,30,31,32	100
Total		400

Unit Wise

Unit	Q. No	Marks
Unit 1	1,2,3,4,5,6,7,8	100
Unit 2	9,10,11,12,13,14,15,16	100
Unit 3	17,18,19,20,21,22,23,24	100
Unit 4	25,26,27,28,29,30,31,32	100
Total		400

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No	Marks
LOT	1,2,3,4,9,10,11,12,17,18,19,20,25,26,27,28	160
HOT	5,6,7,8,13,14,15,16,21,22,23,24,29,30,31,32	240
Total		400

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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.