JHARKHAND Rai University
RANCHI

PRACTICE SET
End Semester Examination, Dec-2025

Program: BMLT
Semester: III
Course: Clinical Chemistry-II
Course Code: 42ABMT306

Course Outcomes	Description
CO1	Understand about 'Diabetes', their types, various methods involve to diagnose. Diabetes and their clinical significance.
CO2	Understand 'Liver Function Test', types of investigation involve, methods to diagnose with their clinical significance.
CO3	Illustrate and discuss about 'Renal Function Test', method involves diagnosing different types of tests and their clinical significance.
CO4	Discuss the 'Cardiac Function Test', types of investigation involve, methods to diagnose with their clinical significance.
CO5	Illustrate and understand about different types of Electrolytes and Enzymes, various methods involve to diagnose the level and their clinical significance.

Section- A: **(30 x5 = 150)**

1. Define Diabetes Mellitus. **[Module- I, CO1, Remember, LOT]**
2. Classify types of Diabetes with short explanation. **[Module- I, CO1,Analyze, HOT]**
3. Describe the principle of Fasting Blood Glucose Estimation. **[Module- I, CO1, Understand, LOT]**
4. Interpret a graphical Glucose Tolerance Test (GTT) curve. **[Module- I, CO1, Understand, LOT]**
5. Explain the clinical significance of HbA1c in diabetes monitoring.**[Module-I, CO1, Understand, LOT]**
6. Justify the need for early diagnosis of diabetes.**[Module- I, CO1, Evaluate, HOT]**
7. Define Liver Function Test.**[Module- II, CO2, Remember, LOT]**
8. Explain the role of serum bilirubin in liver disorder diagnosis.**[Module- II, CO2, Understand, LOT]**
9. Describe the enzymatic assay for SGPT/ALT.**[Module-II, CO2,Remember, LOT]**
10. Compare obstructive jaundice and hemolytic jaundice based on biochemical markers. **[Module- II, CO2, Analyze, HOT]**
11. Evaluate the significance of serum protein ratio in liver disease.**[Module- II, CO2, Evaluate, HOT]**
12. Discuss the clinical implications of elevated ALP levels.**[Module- II, CO2, Understand, LOT]**
13. Define renal function test.**[Module-III, CO3, Remember, LOT]**
14. Explain the principle of serum creatinine estimation.**[Module- III, CO3, Understand, LOT]**
15. Describe the urea clearance test procedure.**[Module- III, CO3, Remember,LOT]**
16. Analyze changes in blood urea levels in renal failure. **[Module- III, CO3, Analyze, HOT]**
17. Justify the clinical importance of serum electrolytes in kidney disorders.**[Module- III, CO3, Evaluate, HOT]**
18. Compare prerenal, renal, and postrenal azotemia.**[Module- III, CO3, Analyze, HOT]**
19. Define cardiac markers.**[Module- IV, CO4, Remember, LOT]**
20. Explain the clinical role of CK-MB in myocardial infarction.**[Module- IV, CO4, Understand, LOT]**
21. Describe the principle of Troponin assay.**[Module- IV, CO4, Remember, LOT]**
22. Analyze ECG patterns associated with myocardial infarction.**[Module- IV, CO4, Analyze, HOT]**

23. Evaluate the importance of early cardiac marker testing in emergency care.**[Module-IV, CO4, Evaluate, HOT]**
24. Justify the significance of lipid profile in cardiovascular risk analysis.**[Module- IV, CO4, Evaluate, HOT]**
25. Define electrolytes with examples.**[Module- V, CO5, Remember, LOT]**
26. Explain the biological function of sodium and potassium.**[Module- V, CO5, Understand, LOT]**
27. Describe the flame photometry method for electrolyte estimation.**[Module- V, CO5, Remember, LOT]**
28. Compare metabolic acidosis and alkalosis based on electrolyte levels.**[Module- V, CO5, Analyze, HOT]**
29. Evaluate enzyme assay results in liver and cardiac disorders.**[Module- V, CO5, Evaluate, HOT]**
30. Justify the clinical significance of serum calcium and magnesium.**[Module- V, CO5, Evaluate, HOT]**

Section B : **(15 x 10 = 150)**

31. Explain the types, causes, and pathophysiology of Diabetes Mellitus.**[Module-I, CO1, Understand, LOT]**
32. Describe the procedure and interpretation of GTT with chart. **[Module- I, CO1, Remember, LOT]**
33. Evaluate the role of biochemical markers in diabetic monitoring.**[Module- I, CO1, Evaluate, HOT]**
34. Explain the principle and procedures of LFT parameters.**[Module- I, CO1,Understand, LOT]**
35. Describe bilirubin metabolism and disorders associated with jaundice.**[Module-II, CO2, Remember, LOT]**
36. Analyze changes in serum proteins in different liver diseases.**[Module- II,CO2, Analyze, HOT]**
37. Discuss the importance of creatinine clearance test and its clinical relevance.**[Module- III, CO3, Understand, LOT]**
38. Explain biochemical tests used in diagnosing renal failure.**[Module- III, CO3, Understand,LOT]**
39. Evaluate the biochemical abnormalities in acute vs chronic kidney disease.**[Module- III, CO3,Evaluate, HOT]**
40. Describe cardiac function tests and their clinical significance.**[Module- IV, CO4, Remember, LOT]**
41. Explain the biochemical basis of lipid profile analysis.**[Module-IV, CO4, Understand, LOT]**
42. Analyze biochemical markers used in acute myocardial infarction.**[Module- IV, CO4, Analyze, HOT]**
43. Discuss major electrolytes and their physiological importance.**[Module- V, CO5, Understand, LOT]**
44. Explain methods used for enzymatic assay in clinical laboratories.**[Module- V, CO5, Understand, LOT]**
45. Evaluate the role of electrolyte imbalance in disease progression.**[Module- V, CO5, Evaluate, HOT]**

Section C: **(10 x 20 = 200)**

46. Write a detailed note on diabetes diagnosis profile with biochemical significance.**[Module- I, CO1, Create, HOT]**
47. Critically evaluate modern laboratory methods in diabetes monitoring.**[Module-I, CO1, Evaluate, HOT]**
48. Discuss Liver Function Tests in detail with interpretation patterns.**[Module-II, CO2, Understand, LOT]**
49. Analyze biochemical markers in hepatic failure with case examples.**[Module-II, CO2, Analyze, HOT]**
50. Describe all the major renal function tests with procedures and evaluation.**[Module- III, CO3, Remember, LOT]**
51. Evaluate biochemical change patterns in glomerular vs tubular disorders.**[Module- III, CO3, Evaluate, HOT]**
52. Explain the biochemical basis and clinical applications of cardiac markers.**[Module- IV, CO4, Understand, LOT]**
53. Analyze combined lipid profile and cardiac enzyme test results in coronary artery disease.**[Module-IV, CO4, Analyze, HOT]**
54. Describe electrolyte balance mechanism and clinical disorders due to imbalance.**[Module- V, CO5, Remember, LOT]**
55. Evaluate the diagnostic importance of enzyme assays in organ-specific diseases. **[Module-V, CO5, Evaluate, HOT]**

Summary Sheet

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
Total		**500**

Module Wise

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

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No.	Marks
LOT	1,3,4,5,7,8,9,12,13,14,15,19,20,21,25,26,27,31,32,34, 35, 37, 38, 40, 41, 43, 44, 48,50, 52, 54	265
HOT	2,6, 9,10, 11,16, 17, 18, 22, 23, 24, 28, 29, 30, 33, 36, 39, 42, 45,46, 47, 49, 51, 53, 55	235
Total		**500**

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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.