JHARKHAND Rai University
RANCHI

PRACTICE SET FOR SUBJECTIVE QUESTIONS
End Semester (Semester I) Examination, Dec-2025

Program: B. Pharm
Subject: Pharmaceutical Analysis-I
Subject Code: BP102T

Unit I			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
1	Define primary and secondary standards with examples.	CO1	Understand
2	What are significant figures? How are they important in analysis?	CO1	Remember
3	Write short notes on the scope of pharmaceutical analysis.	CO1	Understand
4	List sources of impurities in medicinal agents and methods of their detection.	CO1	Apply
5	What is a limit test? Explain its purpose in pharmaceutical analysis.	CO1	Understand
6	What is the role of pharmacopoeia in quality control of drugs?	CO1	Apply
Section III			**Questions for 10 marks**
7	Explain the principles and applications of different analytical techniques used in pharmaceutical analysis.	CO1	Evaluate
8	Discuss various methods of expressing concentration and their significance in analytical chemistry.	CO1	Analyze
9	Describe the procedure for preparation and standardization of molar and normal solutions of sodium hydroxide and oxalic acid	CO1	Evaluate
10	Explain the types, sources, and minimization of errors in pharmaceutical analysis.	CO1	Analyze
Unit II			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
11	What are the criteria for selection of an indicator in acid-base titration?	CO2	Apply
12	What is meant by non-aqueous titration? Give its advantages.	CO2	Understand
13	Give the principle of acidimetry and alkalimetry.	CO2	Remember
14	Briefly describe the classification of acids and bases based on strength.	CO2	Remember

15	How is the endpoint determined in acid-base titrations?	CO2	Understand
16	What are solvents used in non-aqueous titration?	CO2	Apply
Section III			**Questions for 10 marks**
17	Write in detail about the estimation of sodium benzoate and Ephedrine HCl by non-aqueous titration.	CO2	Analyze
18	Explain the theories of acid-base indicators and neutralization curves.	CO2	Evaluate
19	Classify acid-base titrations and discuss strong, weak, and very weak acids and bases.	CO2	Analyze
20	Describe the principle and procedure of non-aqueous acidimetry and alkalimetry with examples.	CO2	Evaluate
Unit III			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
21	Define precipitation titration with examples.	CO3	Understand
22	What are masking and demasking reagents? State their application.	CO3	Remember
23	Write short notes on metal ion indicators.	CO3	Understand
24	What is co-precipitation and post-precipitation?	CO3	Remember
25	Describe the estimation of sodium chloride by precipitation titration.	CO3	Apply
26	Basic principles and application of diazotisation titration.	CO3	Remember
Section III			**Questions for 10 marks**
27	Explain Mohr's, Volhard's, and Fajans' methods for precipitation titrations.	CO3	Evaluate
28	Discuss classification, metal ion indicators, masking and demasking reagents used in complexometric titrations.	CO3	Analyze
29	Describe the principle, steps, and purification process involved in gravimetric analysis.	CO3	Evaluate
30	Write in detail about the estimation of magnesium sulphate and calcium gluconate by complexometric titration.	CO3	Evaluate
Unit IV			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
31	Define redox titration. Differentiate between self-indicator and external indicator with examples	CO4	Remember
32	List and explain types of redox titrations commonly employed in pharmaceutical analysis (potassium permanganate, iodine, cerium).	CO4	Apply
33	Write a short note on the use and examples of redox indicators in titrations.	CO4	Apply
34	Give the principle and applications of iodimetric and iodometric titrations.	CO4	Understand
35	Discuss the role of potassium dichromate as a titrant in redox analysis and its advantages	CO4	Understand
36	Briefly explain the procedure and calculations involved in the	CO4	Apply

	standardization of sodium thiosulphate solution.		
Section III			**Questions for 10 marks**
37	Explain in detail the principle, types and importance of redox titrations in pharmaceutical analysis. Discuss their applications and limitations.	CO4	Evaluate
38	Elaborate the complete procedure for the estimation of iron using potassium permanganate titration, including reactions, indicators, and calculation steps.	CO4	Evaluate
39	Discuss the concept, principle, and stepwise procedure of iodometry in pharmaceutical assay. Include reactions, indicators, and examples of drugs estimated by this method.	CO4	Evaluate
40	Describe different types of electrodes and potentiometric methods used to detect endpoints in redox titrations. Evaluate their significance in pharmaceutical practice.	CO4	Evaluate
Unit V			
S No.	**Questions**	**CO**	**Bloom's Taxonomy Level**
Section II			**Questions for 5 marks**
41	What are the advantages of conductometric over visual titrations?	CO5	Apply
42	Write a note on electrodes used in potentiometric titrations.	CO5	Apply
43	How is normality determined using conductometric methods?	CO5	Remember
44	List the types of indicators used in potentiometric titrations.	CO5	Understand
45	What is the role of reference electrode in electrochemical analysis?	CO5	Understand
46	Differentiate between conductometric and potentiometric titration.	CO5	Understand
Section III			**Questions for 10 marks**
47	Discuss the principle and procedure of conductometric titrations.	CO5	Evaluate
48	Explain potentiometric titrations and their importance in pharmaceutical analysis.	CO5	Evaluate
49	Describe the types and applications of electrochemical methods used in drug analysis.	CO5	Analyze
50	Explain instrumentation, types, and applications of pH meters in pharmaceutical analysis.	CO5	Evaluate

Course Outcomes (CO): On the successful completion of the Course, students will be able to: -

CO1: Understood the fundamental concepts, scope, and importance of pharmaceutical analysis, including error analysis and the use of standards.

CO2: Understood the principles of acid-base and non-aqueous titrations, including indicator theory and their application in drug estimation.

CO3: Understood the basic principles and applications of precipitation titrations, specifically the

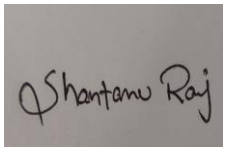
Mohr's, Volhard's, and Fajans' methods.

CO4: Understood principles of redox reactions and their application in quantitative analysis, including different types of titrations like cerimetry and iodometry.

CO5: Understood the fundamental principles and applications of conductometry, potentiometry, and polarography in pharmaceutical analysis.

Summary Sheet

CO Wise		
CO	Q. No	Marks
CO1:	1, 2, 3, 4, 5, 6, 7, 8, 9,10	70
CO2:	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	70
CO3:	21,22, 23, 24, 25, 26, 27, 28, 29, 30	70
CO4:	31,32,33,34, 35, 36, 37, 38, 39, 40	70
CO5:	41,42,43, 44, 45, 46, 47, 48, 49, 50	70
Total Marks: 350		
Unit Wise		
Unit	Q. No	Marks
Unit 1:	1, 2, 3, 4, 5, 6, 7, 8, 9,10	70
Unit 2:	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	70
Unit 3:	21,22, 23, 24, 25, 26, 27, 28, 29, 30	70
Unit 4:	31, 32, 33,34, 35, 36, 37, 38, 39, 40	70
Unit 5:	41,42,43, 44, 45, 46, 47, 48, 49, 50	70
Total Marks: 350		
Blooms Taxonomy Level (BTL) Wise		
BTL	Q. No	Marks
LOT = 1, 2, 3, 4, 5, 11,12,13,14,15,22,23,24,25,26,27,32,33,34,35,42,43,44,45		150
HOT = 6,7,8,9,10,16,17,18,19,20,21,28,29,30,31,36,37,38,39,40,41,46,47,48,49,50		200
Total Marks: 350		



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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.