BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: B.Pharm. **SEMESTER: 1st**
BRANCH: PHARMACY **SESSION: MO'24**

SUBJECT: BP102T PHARMACEUTICAL ANALYSIS-I

TIME: 3.00 Hours **FULL MARK: 75**

INSTRUCTIONS:

1. **The missing data, if any, may be assumed suitably.**
2. **Before attempting the question paper, be sure that you have got the correct question paper.**
3. **Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.**
4. **This question paper consists of (03) three parts. Read the part wise instructions before attempting the questions.**

PART-I
Objective types questions (Instruction: Answer all questions)

Q1. (10 x 2 = 20 Marks)

A. Calculate the volume (mL) of 2.5 N sodium hydroxide required to neutralize 250 mL of 1 N hydrochloric acid.

B. Calculate the amount (g) of sodium bicarbonate required to prepare 500 mL of 1 N solution.

C. Calculate the amount (g) of potassium permanganate required to prepare 100 mL of 0.1 N solution.

D. Write the names of two indicators used in acid-base titration.

E. Direct titration with iodine is known as _____, and indirect titration with iodine is known as _____.

F. Define masking and demasking agents with examples.

G. 200 mg of sodium hydroxide is dissolved in 25ml of distilled water. Find out the normality and molarity of the solution.

H. Define accuracy and precision.

I. Define monodentate, bidentate and multidentate ligands with examples.

J. Find out the average deviation and % relative average deviation of 12.20; 12.00; 12.10

PART-II
Short Answers
(Instruction: Answer seven out of nine questions)

(7 x 5 = 35 Marks)

Q2. Discuss the titration curves of Conductometric titration with respect to acid-base titration.
Q3. Discuss theories of acid-base indicators.
Q4. Write notes on the Levelling Effect in Non-Aqueous Titration.
Q5. Enumerate the types of redox titration with suitable reactions.
Q6. Write notes on Dichrometry.
Q7. Discuss various factors affecting stability of complexes in complexometric titrations.
Q8. Classify errors in pharmaceutical analysis and discuss each type of errors.
Q9. Write a note on the metal ion indicators.
Q10. Estimate sulphate as barium sulphate through gravimetric titration.

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PART-III
Long Answers
(Instruction: Answer two out of three questions)

(2 x 10 = 20 marks)

Q11. Differentiate between the Titration Curves of Hydrochloric acid vs Sodium hydroxide with Acetic acid vs Sodium hydroxide with suitable diagrams along with the choice of indicators.

Q12. (a) Describe various steps involved in the gravimetric titration process. (6)
(b) Discuss the limitations of the gravimetric titration. (4)

Q13. Write a note on the following methods of precipitation titrations:
(a) Volhard and modified Volhard method; (b) Fajan's method. (5+5)

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