8/7/22 M

Roll Number ---------- **(Total Number of Questions 13)** **(Total number of Printed Pages 01)**

Programme	B. Pharmacy
Semester	1st
Subject	Pharmaceutical Analysis-I
Subject Code	BP102T
Paper ID	74645
Time	3Hours
Maximum Marks	75

Instructions to Candidates: *No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.*
Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL.*
***Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO**.*
**** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.*

Section A (10 X2 = 20)

1. Give very short answers to the followings (2 marks each):

i.	Define Relative Error.
ii.	What is Precision and Accuracy in assay?
iii.	What is Levelling Effect?
iv.	What are Adsorption Indicators? Give examples.
v.	How will you prepare 0.2 M HCl? Give calculations.
vi.	Define Peptization.
vii.	What is Ohm's Law?
viii.	What is Redox Potential?
ix.	What is the difference between Iodometry and Iodimetry?
x.	Define Lewis acid and Lewis base.

Section B (2 X 10 = 20)

2.	Define Limit Test? Explain the procedure and principle involved in Limit test for Chloride.
3.	What is Gravimetric Analysis? Discuss Principle and steps involved in gravimetric analysis.
4.	What is Polarography? Describe working, constructions and applications of Dropping Mercury Electrode (DME).

Section C (7 X 5 = 35)

5.	Explain Ostwald's theory of indicator.
6.	Write Preparation and Standardization of 0.1 N Perchloric acid.
7.	Explain the Principle and Theory of Diazotisation titration.
8.	Write a note on different types of current.
9.	Write a note on dichromate titration.
10.	What are the sources of impurities in medicinal agents?
11.	Write the Principle and Procedure of Sodium Chloride by Mohr's Method.
12.	Give standardization procedure for 0.05 EDTA solution.
13.	What are the factors affecting the conductivity measurements?

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Note: Disclosure of identity by writing mobile number or making request for passing on any page of answer-sheet will lead to UMC against the candidate.

Roll No. | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 22

B.Pharma (2017 & Onwards) (Sem.–1)

PHARMACEUTICAL ANALYSIS-I

Subject Code : BP-102T

M.Code : 74645

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and students have to attempt any SEVEN questions.

SECTION-A

Explain briefly :

Q1. Give the primary and secondary standards for: sodium thiosulphate and NaOH.

Q2. What is specific conductance? How is it related to observed conductance?

Q3. What is pK_a? What is its importance?

Q4. Give chemical reactions for standardization of sodium nitrite.

Q5. Explain glass electrode in brief.

Q6. What is specific conductance?

Q7. Calculate and express the result to correct number of significant figures : $[(205.0 + 10.025) \times 0.0500] + 10.0124$

Q8. Give pH range of phenolphthalein and methyl orange.

Q9. Define Chelating Agent and sequestering agent.

Q10. Why is water boiled before preparing sodium thiosulphate solution?

SECTION-B

Q11. Give a detailed account of titrants, solvents, indicators and chemistry involved in titration of any weakly basic drug by non-aqueous titrimetry.

Q12. Classify argentimetric titrations. Discuss the chemical equations, titration conditions and applications of Mohr's method.

Q13. What are potentiometric titrations? Discuss in detail various types of potentiometric titration curves.

SECTION-C

Q14. Explain calibration of conductance cell.

Q15. What is a dropping mercury electrode? Explain its construction and working.

Q16. Explain the working of a calomel electrode.

Q17. How can you minimize errors in pharmaceutical analysis?

Q18. What type of conductometric titration curve is obtained for NaOH *vs* HCl?

Q19. Discuss the concept and chemistry involved in permanganate titrations.

Q20. Draw a polarographic wave and explain its various components.

Q21. Discuss in brief the factors affecting the solubility of precipitates.

Q22. Taking appropriate examples, explain masking and demasking agents.

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06 DEC 2019

Roll No. | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 13

B.Pharma (2017 & Onwards) (Sem.–1)

PHARMACEUTICAL ANALYSIS-I

Subject Code : BP-102T

M.Code : 74645

Time : 3 Hrs. Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. **Explain briefly :**

   (a) What are primary standards in analysis?

   (b) What is the purpose of limit test?

   (c) Give examples of two self indicating titrants.

   (d) Which indicator will you prefer for titration of acetic acid against sodium hydroxide?

   (e) What are molar and normal solutions?

   (f) What special treatment is given to water while preparing sodium thiosulphate solution?

   (g) Define masking and demasking reagent.

   (h) How precision of an experiment can be increased?

   (i) Define conductometry.

   (j) Differentiate between Iodimetry and Iodometry.

SECTION-B

2. What is gravimetric analysis? Discuss principle and steps involved in gravimetric analysis.

3. Enumerate different sources and types of error. How do we minimize systematic errors?

4. Explain the concepts of oxidation and reduction. Write detailed note on redox titrations.

SECTION-C

5. Discuss various sources of impurities in medicinal agents.

6. What are neutralization curves? Explain giving examples of each type.

7. Describe Modified Volhard's method in precipitation titrations.

8. Classify complexometric titrations. Write a note on estimation of Magnesium Sulphate.

9. Discuss co-precipitation versus post precipitation.

10. How do official estimation of Ephedrine hydrochloride was carried out?

11. Discuss basic principle and methods of diazotization titration.

12. Discuss in detail construction and working of indicator electrodes in potentiometry.

13. Define Polarography. Explain construction and working of dropping mercury electrode.

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Roll No. | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 13

B.Pharma (2017 & Onwards) (Sem.–1)

PHARMACEUTICAL ANALYSIS-I

Subject Code : BP-102T

M.Code : 74645

Time : 3 Hrs. Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
3. SECTION-C contains NINE questions carrying FIVE marks each and student has to attempt any SEVEN questions.

SECTION-A

1. **Explain briefly :**

   (a) Define accuracy and precision.

   (b) What is a significant figure?

   (c) What is a mixed indicator? Give an example.

   (d) Define formal potential.

   (e) What is common ion effect?

   (f) What is co-precipitation? How it can be minimized?

   (g) What is the pH of 0.01 M solution of HCl?

   (h) Why an aqueous solution of sodium acetate in alkaline?

   (i) Write balanced chemical equation for reaction between $Ce(SO_4)_2$ and Oxalic acid.

   (j) Differentiate between iodimtery and iodometry.

SECTION-B

2. Explain in detail the theories of indicator action. How do you select an appropriate indicator for a titration?

3. Write about principle, balanced chemical equations and general calculations for standardization of $Na_2S_2O_3$. Give application of $Na_2S_2O_3$ in estimation of $CUSO_4$.

4. (a) Differentiate between co-precipitation and post-precipitation. How these can be minimized?

   (b) Explain the principle involved, chemical reactions, procedure and general calculations for gravimetric estimation of barium as $BaSO_4$.

SECTION-C

5. Define a buffer solution. How it works? Derive the equation to calculate its pH.

6. Explain Mohr's method in detail.

7. Write an account on various internal indicators used in redox titrations.

8. How do you prepare a 0.1M solution of Ceric ammonium sulfate? Explain its standardization giving balanced chemical equations and general calculation.

9. Explain the concept of masking and demasking with examples and one application.

10. Give a detailed account on assay of ephedrine hydrochloride.

11. What is the principle of conductometric titrations? Explain their applications.

12. Give the construction and working of calomel electrode with the help of neat diagram.

13. Define error. Discuss various types of errors and methods to minimize these.

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20 DEC 2018

Roll No. Total No. of Pages : 02

Total No. of Questions : 10

B.Pharma (2017 & Onwards) (Sem.–1)

PHARMACEUTICAL ANALYSIS-I

Subject Code : BP-102T

Paper ID : [74645]

Time : 3 Hrs. Max. Marks : 80

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of FIFTEEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains FOUR questions carrying TEN marks each and students have to attempt any THREE questions.

SECTION-A

1. **Explain briefly :**

   a. Reduction Potential.

   b. Primary standards.

   c. Equivalent weight of potassium permanganate on acid and alkaline medium.

   d. What do you understand by digestion of precipitates? Give its advantages.

   e. Starch is added near to the end point of titration, why?

   f. Name four different end point determination methods for precipitation titrations.

   g. Werner Coordination number.

   h. Masking agents.

   i. Relation of pH to potential.

   j. Chelation.

   k. Cell constant.

   l. Define and give units of Specific conductance.

   m. Give one name of reference and standard electrode each.

   n. Difference between Iodimetry and Iodometry titrations.

   o. Name two metal ion indicators.

SECTION-B

2. Factors affecting stability of complexes.
3. Co-precipitation and Post-precipitation.
4. Derive the Handerson-Hasselbalch equation.
5. Taking a suitable example, explain the titration of weak bases by non-aqueous titrations.
6. Give a schematic diagram of assembly used in Arsenic limit test.

SECTION-C

7. Various types of electrochemical method of analysis, giving advantages and disadvantages.
8. Give the principle detailed procedure, reactions and use of each reagent used in Iron limit test.
9. Give a detailed account of sources and type of errors in pharmaceutical analysis.
10. Explain the constructions and working of dropping mercury electrode.

Roll No. | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 13

B.Pharma (2017 Batch) (Sem.–1)

PHARMACEUTICAL ANALYSIS-I

Subject Code : BP-102T

Paper ID : [74645]

Time : 3 Hrs. Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains THREE questions carrying TEN marks each and student has to attempt any TWO questions.
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SECTION-A

1. **Explain briefly :**

   a. Reduction Potential.

   b. Primary standards.

   c. Equivalent weight of potassium permanganate on acid and alkaline medium.

   d. Starch is added near to the end point of titration, why?

   e. Name four different end point determination methods for precipitation titrations.

   f. Werner Coordination number.

   g. Masking agents.

   h. Relation of pH to potential.

   i. Define and give units of Specific conductance.

   j. Give one name of reference and standard electrode each.

SECTION-B

2. Factors affecting stability of complexes.
3. Co-precipitation and Post-precipitation.
4. Derive the Handerson-Hasselbalch equation.

SECTION-C

5. Taking a suitable example, explain the titration of weak bases by non-aqueous titrations.
6. Give a schematic diagram of assembly used in Arsenic limit test.
7. Various types of electrochemical method of analysis, giving advantages and disadvantages.
8. Give the principle detailed procedure, reactions and use of each reagent used in Iron limit test.
9. Give a detailed account of sources and type of errors in pharmaceutical analysis.
10. Explain the constructions and working of dropping mercury electrode.
11. Discuss the concept and chemistry involved in diazotization titration.
12. Explain the working of Calomel electrode.
13. What type of conductometric titration curve is obtained for NaOH vs. HCl?