THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LM 2003) MARCH 2018 **Sub. Code: 2003**

B.PHARM. DEGREE EXAMINATION
PCI Regulation SEMESTER – I
PAPER II – PHARMACEUTICAL ANALYSIS – I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Explain various types of argentimetric titrations with example.
2. With the help of a neat diagram, explain the construction and working of dropping mercury electrode.
3. a) Describe on types of errors and methods of minimizing errors.
   b) Briefly discuss on the limit test for iron.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Briefly explain the theories of acid-base indicators.
2. Discuss on Diazotization titration.
3. Explain the general applications of conductometric titration.
4. Explain the principle involved in the estimation of sodium benzoate.
5. Describe on various steps involved in gravimetric analysis.
6. Write the reactions with equation for the estimation of magnesium sulphate.
7. Explain the principle and applications of cerimetry.
8. Write the construction and working of calomel electrode.
9. Explain on various solvents used in non aqueous titration.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. What is masking agent? Give an example.
2. Distinguish between iodimetry and iodometry.
3. Define titration curve.
4. What is meant by half-wave potential? Write its significance.
5. Give any two important applications of potentiometry.
6. What is dichrometry?
7. Define primary and secondary standards with example.
8. Classify complexometric titrations with example.
9. Write the Ilkovic equation and explain on each term.
10. Mention the types of redox titrations.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LN 2003) SEPTEMBER 2018 **Sub. Code: 2003**

B.PHARM. DEGREE EXAMINATION
PCI Regulation SEMESTER – I
FIRST YEAR
PAPER II – PHARMACEUTICAL ANALYSIS – I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Explain the masking and de-masking agents in complexometric titrations.
2. Write the principle of redox titration and give a note on indicators used in redox titration.
3. Write in detail about the acid base concepts and buffer solutions with examples.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Describe the construction and working of dropping mercury electrode with a diagram.
2. Write a note on standardization of perchloric acid.
3. Write a note on diazotization titrations.
4. Explain choice of indicators in acid – base titrations.
5. Give an account on the preparation and standardization of cerric ammonium sulphate.
6. Write notes on pM indicators.
7. Explain how you will determine calcium by gravimetric analysis.
8. Explain neutralization curves with examples.
9. Write the preparation and standardization of potassium permanganate.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. What is gravimetric analysis?
2. What are chelating agents?
3. What is co-precipitation and post precipitation?
4. Werner's co-ordination number.
5. Define precision.
6. What is the advantage of modified Volhard's method?
7. Define accuracy.
8. What is primary standard? Explain with examples.
9. Write the different techniques of analysis.
10. What is permanganometry and Bromometry?

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LO 2003) MARCH 2019 **Sub. Code: 2003**

B.PHARM. DEGREE EXAMINATION
PCI Regulation SEMESTER – I
PAPER II – PHARMACEUTICAL ANALYSIS – I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Explain the principle and procedure involved in the assay of calcium gluconate.
2. What is a neutralization curve? Explain the titration curves of strong acid with strong base and weak base.
3. Explain in detail the construction and working of silver silver chloride electrode.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Explain the principle of sulphate limit test.
2. Preparation and standardization of 0.1M sodium hydroxide solution.
3. Note on Mohr's method.
4. Discuss the theory of redox titrations.
5. What is masking? Write its significance in analysis.
6. Explain the various types of currents of polarographic method.
7. Preparation and standardization of 0.1N sodium thiosulphate solution.
8. Explain the estimation of Barium sulphate by gravimetry.
9. Write the basic concept of conductometric titrations.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. Write about quantitative and qualitative analysis.
2. Explain the principle of back titration.
3. What is a primary standard? Mention one e.g. and its ideal property.
4. Define Amphiprotic solvents with e.g.
5. Write two application of polarography.
6. Nernst Equation.
7. Preparation of 0.1N Oxalic acid.
8. Write about personal errors.
9. Mention the indicator electrode used in Potentiometry.
10. Define Metal ion indicators with e.g.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

(LP 2003) SEPTEMBER 2019 **Sub. Code: 2003**

B.PHARM. DEGREE EXAMINATION
PCI Regulation SEMESTER – I
PAPER II – PHARMACEUTICAL ANALYSIS – I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Write the principle and different types of titration involved in Conductometric titrations.
2. Explain the concept of iodometry and iodimetry. Give the procedure for the Standardization of sodium thiosulphate solution using potassium iodate.
3. Discuss the principle and application of : a) Redox titration b) Polarography

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Define complex. Give theory of complexometric titrations.
2. Preparation and standardization of 0.05M Potassium permanganate.
3. Explain in detail Cerimetry.
4. Estimation of sodium chloride.
5. Discuss the construction and working of rotating platinum electrode.
6. Explain in detail sources of impurities in medicinal agents.
7. Write the principle involved in limit test for lead.
8. Discuss various steps involved in gravimetric analysis.
9. Write short notes on significant figure.

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. What are self indicators? Give examples.
2. Solubility product.
3. What are mixed indicators?
4. What are primary and secondary standard substances? Give examples.
5. Define standard deviation and give its formula.
6. Explain Bronsted acid-base theory.
7. Differentiate between internal and external redox indicators.
8. Define Errors.
9. Nernst equation.
10. Define ligands.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LR 0121] JANUARY 2021 Sub. Code: 2003

(MARCH 2020 EXAM SESSION)

B. PHARMACY DEGREE EXAMINATION

PCI Regulation SEMESTER – I

PAPER II – PHARMACEUTICAL ANALYSIS - I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Define Diazotisation titration. Explain the basic principle, methods and applications of Diazotisation titration.
2. What is Complexometric titration? Discuss in detail about various types of Complexometric titration with suitable examples.
3. What are Reference Electrodes? Describe the construction, working, advantages and disadvantages of Standard Hydrogen Electrode and Calomel Electrode.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Discuss the principle and procedure involved in Mohr's method.
2. Write a brief note on pM indicators.
3. Define Titration. Explain the choice of indicators in Acid-base titration.
4. With the help of a neat diagram, explain the construction and working of Rotating Platinum Electrode.
5. Define Gravimetric analysis. Write a note on Co-precipitation and Post precipitation.
6. Explain the various types of solvents used in Non aqueous titration.
7. Define Pharmaceutical analysis. What are the different methods of Expressing Concentration?
8. Discuss the sources of impurities in medicinal agents.
9. Write briefly about the preparation and standardisation of Potassium permanganate.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What is Iodimetry?
2. Define Buffer with examples.
3. Define Error. Classify them.
4. Write the principle of Polarography.
5. Classify Redox indicator.
6. Define Conductometric titration.
7. What is Bromatometry?
8. Define Limit test.
9. What do you mean by Adsorption indicators? Give examples.
10. Define Significant figure.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0921] SEPTEMBER 2021 Sub. Code: 2003
(SEPTEMBER 2020 EXAM SESSION)

B.PHARM. DEGREE EXAMINATION
PCI Regulation 2017 – SEMESTER I
PAPER II – PHARMACEUTICAL ANALYSIS - I
Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Explain in detail about the following
   a) Sources of Impurities in Medicinal agents.
   b) Estimation of Sodium chloride by Mohr's method.
2. What is Gravimetry? Explain the steps involved in Gravimetry.
3. Write the principle of Complexometric titration. How will you estimate Magnesium sulphate and Calcium gluconate by Complexometry?

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Define Acids and Bases. Explain Neutralization curves in Acid-base titration.
2. How will you estimate Barium sulphate?
3. What are the various applications of Polarography?
4. Discuss in detail about Modified Volhard's method.
5. What are Non aqueous solvents? Explain the principle and procedure involved in the estimation of Sodium benzoate by Non aqueous titration.
6. Write briefly about Diazotisation titration.
7. Write a detailed note on the preparation and standardisation of Ceric ammonium sulphate.
8. Describe the principle, reaction and procedure involved in the Limit test for Chloride.
9. Explain the construction and working of Glass Electrode.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define Accuracy.
2. Write any two applications of Potentiometry.
3. Explain the principle of Redox titration.
4. Define Half wave potential.
5. What do you mean by Co-precipitation?
6. Define Primary standard. Give example.
7. Define Normality.
8. What is Ilkovic equation?
9. Define Indicators.
10. What are Chelating agents?

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0122] JANUARY 2022 Sub. Code: 2003
(MARCH 2021 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER I
PAPER II – PHARMACEUTICAL ANALYSIS - I
Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. What are the different indicators used in Complexometric titration? Describe the use of Masking and Demasking agents in Complexometry.
2. Describe in detail about the following
   a) Volhard's method b) Fajan's method
3. Discuss the construction, working, advantages and disadvantages of Dropping Mercury Electrode.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write briefly about the different types of Errors and methods to minimize the Errors.
2. Explain the various steps involved in Gravimetric analysis.
3. Write the principle, reaction and procedure involved in the Limit test for Iron.
4. Describe in detail about the theories of Acid-base indicators.
5. Discuss in detail about the applications of Conductometric titrations.
6. Give an account on the preparation and standardization of Hydrochloric acid.
7. Explain the principle and applications of Dichrometry and Iodimetry.
8. Define Potentiometry. Discuss the construction and working of any one Indicator Electrode.
9. How will you estimate Ephedrine HCl by Non aqueous titration?

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What do you mean by Molarity?
2. Define Precipitation titration.
3. What is Nernst equation?
4. Define Migration current.
5. What is Pharmacopoeia?
6. Define Precision.
7. What is Iodometry?
8. List out types of solvents used in Non-aqueous titrations.
9. Define Cerimetry.
10. What are the advantages of Conductometric titrations?

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 0522] **MAY 2022** **Sub. Code: 2003**

(SEPTEMBER 2021 EXAM SESSION)

B.PHARM. DEGREE EXAMINATION

PCI Regulation 2017 – SEMESTER I

PAPER II – PHARMACEUTICAL ANALYSIS - I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. **(2 x 10 = 20)**

1. Briefly explain in detail about the construction of conductivity cell and applications of conductometry.
2. Define Complexometric titration. Explain the Different types in detail.
3. Discuss about the various steps involved in gravimetric analysis.

II. Write notes on: Answer any SEVEN questions. **(7 x 5 = 35)**

1. Discuss about Silver –silver chloride electrode in potentiometry.
2. Write the preparation and standardization of 0.02M Potassium permanganate.
3. Describe about Neutralization curves.
4. Write the applications of Polarography.
5. Briefly describe about Mohr's method with limitation
6. Write the principle and procedure involved in the assay of Sodium benzoate.
7. Ex plain the theory of Redox titration and add a note about redox indicators.
8. Discuss the principle and the procedure in the Limit test for Iron.
9. Explain with the neat diagram of dropping mercury electrode (DME)

III. Short answers on: Answer ALL questions. **(10 x 2 = 20)**

1. Define Secondary standard with example.
2. Write the preparation of 0.1M Perchloric acid
3. What is Gravimetric Analysis?
4. Define Precision.
5. What is Bromatometry?
6. What is Post-Precipitation?
7. Write the importance of buffer in complexometric titration.
8. Define Non-Aqueous titration with example.
9. What are the sources of Error?
10. Significant Figure.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[BPHARM 1022] OCTOBER 2022 Sub. Code: 2003
(MARCH 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER I
PAPER II – PHARMACEUTICAL ANALYSIS I
Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. What is Diazotization titration? Explain in detail about the methods and applications of Diazotization titration.
2. Define Polarography. Explain in detail about the Rotating platinum electrode.
3. a. Discuss about the construction and working of calomel electrode.
   b. Describe about the Theory of Acid base indicators.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Discuss about Pharmacopoeia.
2. Explain about Ceriometry.
3. What are Masking and Demasking agent?
4. Explain about the Alkalimetry titration in Non-Aqueous titration.
5. Briefly describe about Volhard's method.
6. Write the principle and procedure involved in the assay of Ephedrine Hydrochloride.
7. Explain about the Assay of Calcium gluconate with reaction.
8. Discuss the principle and the procedure in the Limit test for chloride
9. Write the principle and procedure involved in Estimation of Barium sulphate.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define Iodimetry with example.
2. Write the preparation of 0.1M Oxalic acid.
3. What is primary standard? Give examples.
4. Define Accuracy.
5. What is Dichrometry?
6. What is co-precipitation?
7. Nernst equation.
8. Define Argentometric titration with example.
9. What is Sequestering agent?
10. Write the principle involved in Non-Aqueous titration.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[B.PHARM 0323] MARCH 2023 Sub. Code: 2003
(SEPTEMBER 2022 EXAM SESSION)

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER I
PAPER II – PHARMACEUTICAL ANALYSIS I

Q.P. Code: 562003

Time: Three hours **Maximum: 75 Marks**

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Define Errors. Discuss the types and methods of minimization of errors in detail.
2. Write the methods to determine the endpoint of Potentiometric Titrations. Write the Applications of potentimetry.
3. Briefly explain the principle and the procedure in the Limit test for Arsenic.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Discuss the different techniques of Analysis.
2. Write about Indicator electrode in Potentiometry.
3. Discuss about Potassium Iodate titration.
4. Explain the different types of solvents in Non-Aqueous titration.
5. Briefly describe about Fajan's method.
6. Write the principle and procedure involved in the assay of Magnesium sulphate.
7. Define Indicator and write the different types of Acid Base indicator.
8. Discuss the principle of Polarography. Write the Ilkonic equation.
9. Explain about Electrochemical methods of analysis.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Define Primary standard with example.
2. Write the preparation of 0.1M Sulphuric acid.
3. What is masking agent?
4. Define Neutralization curve.
5. What is Iodometry?
6. Leveling effect.
7. What is Co-Precipitation?
8. Write about Self-indicator with examples.
9. Diffusion current.
10. PM Indicators.

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