

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

(Regulations 2008-2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Describe the various sources of impurities in pharmaceutical substances.
b) What is cerimetry? Explain its advantage over other oxidizing agents.
c) List out various volumetric methods and explain back titration with example.
2. a) What is complexometric titrations. Explain its principle with suitable examples.
b) Explain the various theories of indicators.
c) Describe the principle and procedure involved in the limit test for Iron.

II. Write notes on:

(6 x 5 = 30)

1. What are antacid?
Classify them with examples.
Give the method of preparation of any one of them.
2. Explain the role of fluorides as anti caries agent.
3. Define the following terms:
 - a) Cathartics.
 - b) Disinfectant.
 - c) Aantiseptic.
 - d) Astringent.
 - e) Dentritrices.
4. Write the composition of Ringer's solution. Explain its importance.
5. Describe the principle involved in modified volhard's method with example.
6. Write short notes on pharmaceutical aid.

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Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Describe the principle and procedure involved in conducting limit test for arsenic with neat diagram.
b) List out various volumetric methods. Explain redox titration with suitable example.
c) What are cathartics? Give examples.
Give the method of preparation of any one of them.
2. a) What is gravimetric method?
Explain the various steps involved in it with example.
b) What is non aqueous titration?
Explain its principle with suitable example.
c) What are antimicrobials? List out various official preparation.
Explain the assay of any one of them.

II. Write notes on:

(6 x 5 = 30)

1. Write any one method to measure radio activity.
2. Write short notes on masking and demasking agents.
3. What are dentritrices? List out the official compounds.
4. List out various official compounds of iodine.
Give the principle involved in the assay of weak iodine solution.
5. Give the principle and reaction involved in the preparation of boric acid and magnesium sulphate.
6. Write a note pharmaceutical importance of medicinal gases.

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Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Write in detail the preparation, properties assay, identification test and uses of oxygen.
- b) Write the preparation, acid consuming capacity and assay of aluminium hydroxide gel.
2. a) Write the principle involved in the non aqueous titration.
- b) Preparation and Standardisation of perchloric acid.
- c) Explain the experimental techniques of gravimetric analysis.

II. Write notes on:

(6 x 5 = 30)

1. Explain the theory of Indicators.
2. Write a note on the preparation assay and uses of Boric acid.
3. Write the Medicinal uses of the following compounds
 - a) Potassium Bromide.
 - b) Sodium Nitrate.
 - c) Ferrous Sulphate.
 - d) Carbon dioxide.
 - e) Hydrogen Peroxide.
4. Define error and write its types.
5. Write about the Pm indicator used in complexometric titration.
6. Write any five radio pharmaceuticals and their uses.

[KY 805]

MAY 2011

Sub. Code: 3805

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

(Regulations 2008-2009)

(Candidates admitted from 2008-2009 onwards)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Describe the sources of impurities in pharmaceutical substances.
b) Explain the principle and procedure involved in the limit test for arsenic with neat labeled diagram of the apparatus.
2. a) What are the various errors that occurs during analysis?
b) Write briefly about Complexometric titrations.

II. Write notes on:

(6 x 5 = 30)

1. Explain the principle of Redox titrations with suitable examples.
2. Give the preparation, assay and uses of calcium gluconate.
3. Explain the theory of precipitation titrations.
4. What are antidotes? Explain about any one antidote used for cyanide poisoning.
5. Write a note on various pharmaceutical aids with examples.
6. Clinical applications of Radio-Pharmaceuticals.

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**FIRST YEAR****PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY****Q.P. Code: 383805****Time: Three Hours****Maximum: 100 marks****Answer ALL questions in the same order.****I. Elaborate on :**

Pages (Max.)	Time (Max.)	Marks (Max.)
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1. a) What is gravimetric analysis?

Discuss the steps involved in gravimetric analysis. **(12)**

17 40 min. 20

b) Discuss about organic precipitants. **(8)**2. a) What are antacids? Give the classification of antacids. **(3)**b) What are the qualities of an ideal antacid? **(3)**

17 40 min. 20

c) Give the preparation, identification test, assay and medicinal uses of aluminium hydroxide gel and magnesium carbonate. **(12)****II. Write notes on :**

1. Define acidifier. Discuss the preparation, assay and medicinal uses of ammonium chloride.

4 10 min. 6

2. Write notes on non-aqueous solvents.

4 10 min. 6

3. Explain the role of fluorides as anticaries agents.

4 10 min. 6

4. Write a note on respiratory stimulants with an example.

4 10 min. 6

5. Explain the physiological role of Iron and copper.

4 10 min. 6

6. What are cathartics? Give an example.

4 10 min. 6

7. How do you minimize errors in pharmaceutical analysis?

4 10 min. 6

8. Discuss oral rehydration therapy.

4 10 min. 6

9. Describe the principle involved in Modified Volhard's method with an example.

4 10 min. 6

10. What are the fundamentals of volumetric analysis?

4 10 min. 6

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION**FIRST YEAR****PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY****Q.P. Code: 383805****Time: Three Hours****Maximum: 100 marks****Answer ALL questions in the same order.****I. Elaborate on :**

Pages (Max.)	Time (Max.)	Marks (Max.)
-----------------	----------------	-----------------

- | | | | |
|---|----|---------|----|
| 1. Explain the sources of impurities with examples.
Discuss on the principle involved in the limit test for iron and lead | 17 | 40 min. | 20 |
| 2. Explain on physiological acid – base balance and its importance. Briefly discuss on any five electrolytes used in acid – base imbalance. | 17 | 40 min. | 20 |

II. Write notes on :

- | | | | |
|---|---|---------|---|
| 1. Any one preparation and Assay of boric acid. | 4 | 10 min. | 6 |
| 2. Theory and solvents used in non- - aqueous titration. | 4 | 10 min. | 6 |
| 3. What is EDTA? write its structure and importance in complexometric titration | 4 | 10 min. | 6 |
| 4. Role of copper as an essential element | 4 | 10 min. | 6 |
| 5. Co-precipitation and post precipitation | 4 | 10 min. | 6 |
| 6. Use of adsorption indicators in precipitation titration | 4 | 10 min. | 6 |
| 7. Labeling of radiopharmaceuticals, handling and storage of radioactive materials | 4 | 10 min. | 6 |
| 8. Determinate and indeterminate errors | 4 | 10 min. | 6 |
| 9. What is antidote? Classify them. Explain the action of sodium nitrite as an antidote in cyanide poisoning. | 4 | 10 min. | 6 |
| 10. Medicinal uses of carbon dioxide and nitrous oxide. | 4 | 10 min. | 6 |

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Pages (Max.)	Time (Max.)	Marks (Max.)
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- | | | | |
|--|----|---------|----|
| 1. a) Explain about the dental products that have studied? | | | |
| b) Give the preparation, Identification tests, assay and medicinal uses of any two antacids. | 17 | 40 min. | 20 |
| 2. a) Explain the principle involved in nonaqueous titrations. | | | |
| b) Write the preparation and standardisation of perchloric acid. | 17 | 40 min. | 20 |
| c) Types of errors in quality control. | | | |

II. Write notes on :

- | | | | |
|---|---|---------|---|
| 1. Write the various steps involved in Gravimetry analysis. | 4 | 10 min. | 6 |
| 2. Explain about the Expectorants. | 4 | 10 min. | 6 |
| 3. Describe the theory of indicators. | 4 | 10 min. | 6 |
| 4. Write about the Cathartics. | 4 | 10 min. | 6 |
| 5. What is Ceriometry and mention about its advantages? | 4 | 10 min. | 6 |
| 6. Write the Clinical applications of radiopharmaceuticals with examples. | 4 | 10 min. | 6 |
| 7. Explain about the Masking and Demasking agents. | 4 | 10 min. | 6 |
| 8. Write the preparation, assay and uses of chlorinated lime. | 4 | 10 min. | 6 |
| 9. Give the principle involved in Modified Volhard's method. | 4 | 10 min. | 6 |
| 10. Write a note on Dentifrices. | 4 | 10 min. | 6 |

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FIRST YEAR

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Q.P. Code: 383805

Time: Three Hours

Maximum: 100 marks

Answer All questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Explain about the dental products that have studied?
b) Give the preparation, Identification tests, assay and medicinal uses of any two antacids.
2. a) Explain the theory of indicators.
b) Write the principle and methods involved in the precipitation titration.

II. Write notes on:

(10 x 6 = 60)

1. Define the term antidote and write about any one antidote used for cyanide poisoning.
2. Write the Preparation and standardisation of perchloric acid.
3. What is complexometric titration and explain its principle.
4. Explain about the Electrolyte combination therapy.
5. What are the various experimental techniques of gravimetric analysis
6. Write the preparation and assay of Boric acid.
7. Describe the theory of redox titration.
8. Give the storage condition for oxygen, carbondioxide and nitrous oxide.
9. Explain the various types of errors in quality control.
10. Give an account on Dentifrices.

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer All questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Describe the principle and procedure involved in the limit test for Iron.
b) Explain the procedure for the assay of oxygen and carbon dioxide.
2. a) Explain the theory of redox titration.
b) Explain the various concepts of Acid-base.
c) Give an account on Neutralization curve.

II. Write notes on:

(10 x 3 = 30)

1. How will you prepare and standardize 0.05 M disodium EDTA.
2. Explain types of solvent used in non aqueous titration.
3. Describe the principle involved in Mohr's method.
4. What are the applications of buffer solution in pharmacy.
5. Write a note on the assay and uses of aluminium hydroxide gel.
6. Explain the physiological role of copper & selenium.
7. What are cathartics? Give an example.
8. Explain Geiger-Muller counter
9. What are antacids? Classify them with examples.
10. Write molecular formula and uses of the following:
 - a) Potassium Iodide.
 - b) Sodium Fluoride.
 - c) Ferrous fumarate.

DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer All questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Explain the various steps involved in Gravimetric analysis.
b) Explain the theory of acid-base indicators.
2. a) Explain the principle and procedure involved in the limit test for Arsenic with neat labeled diagram of the apparatus.
b) Write notes on Non-aqueous titration.

II. Write notes on:

(10 x 3 = 30)

1. How will you prepare and standardize 0.1 N Sodium hydroxide.
2. Explain the different types of Complex metric titration.
3. Describe in detail about Henderson-Hasselbalch equation.
4. Write a note on the assay and uses of calcium gluconate.
5. Describe the principle involved in volhard's method.
6. What are antacids? Classify them with examples.
7. Explain the physiological role of zinc.
8. What are antidotes? Explain about any one antidote.
9. Write a note on purified water & water for injection.
10. Write molecular formula and uses of the following:
 - a) Hydrogen peroxide.
 - b) Ferric sulphate.
 - c) Potassium citrate.

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION
(2009-2010 Regulation)**

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer All questions

I. Elaborate on:

(4 x 10 = 40)

1. What are Expectorants? How do they act?
Discuss the role of Ammonium chloride as respiratory stimulants.
2. What is Gravimetric titration?
Explain the various steps involved in it with example.
3. What is Complexometric titration? What are its application?
Explain about the masking and demasking agents.
4. Discuss about Electrolyte replenishers and composition of ORS.

II. Write notes on:

(6 x 5 = 30)

1. Explain the theory of indicator.
2. What are antacids? Classify them. What are the factors for choice ideal antacids?
3. What are antimicrobial? Write its mechanism of action with suitable example.
4. Define the following terms with one inorganic compound as in use.
 - a) Disinfectant.
 - b) Anti neoplastic agent.
 - c) Sedatives.
 - d) Anti rheumatics.
 - e) Emetics.
5. Medicinal gases uses and storages.
6. Write note on Radio pharmaceuticals.

**DOCTOR OF PHARMACY (PHARM. D) DEGREE EXAMINATION
(2009-2010 Regulation)**

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code: 383805

Time: Three Hours

Maximum: 70 marks

Answer All questions

I. Elaborate on:

(4 x 10 = 40)

1. Explain the physiological role of iron and iodine with the related disease condition.
2. How will you classify antimicrobials?
Write the mechanism of action and assay of boric acid and silver nitrate.
3. What are antidotes? How do they act during cyanide poisoning?
Write the preparation and assay of sodium thiosulphate.
4. Write a note on oral rehydration salt and electrolyte combination therapy.

II. Write notes on:

(6 x 5 = 30)

1. Explain about direct and indirect titrations involving potassium permanganate and iodine with any one example each.
2. Define the term sedative and expectorant.
Write the preparation of potassium bromide and potassium citrate.
3. What are the compounds used under acid base therapy?
Write the uses for any five compounds.
4. Write the physiological role of copper and sulphur.
5. Write a note on non aqueous titration and elaborate on the indicators used.
6. Explain Mohr's method and Volhard's methods of titrations.

PHARM. D DEGREE EXAMINATION

(2009-2010 Regulation)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time: Three Hours

Maximum: 70 marks

Answer ALL questions

I. Elaborate on :

(4 x 10 = 40)

1. Define the term Pharmaceutical Aids with suitable examples.
2. What is Non - Aqueous titration? Explain its principle with suitable example.
List out solvent used in the Non-Aqueous titration.
How will you prepare and standardize the 0.1N Perchloric acid?
3. Explain the theory of precipitation titrations.
Describe the principle involved in modified Volhard's method with example.
4. What are Electrolytes? Write its essential function in the body.
Give note on acid-base regulators.

II. Write notes on :

(6 x 5 = 30)

1. What is Ceriometry? Explain its advantages over other oxidizing agents.
2. Henderson - Hasselbalch equation.
3. Limit test for arsenic.
4. What is acidifiers and antacid? Give examples.
5. Note on Radio Pharmaceuticals.
6. Name the titration for the following compounds:
 - (a) Ammonium chloride.
 - (b) Copper sulphate.
 - (c) Barium sulphate
 - (d) Sodium benzoate.
 - (e) Calcium gluconate.

[LI 805]

APRIL 2016

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION
(2009-2010 Regulation)
FIRST YEAR
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on : **(4 x 10 = 40)**

1. What are Acid-base titrations? Explain its principle with suitable examples.
2. Explain the principle and procedure involved in the limit test for Iron.
3. What are Antimicrobials? List out various Official Preparation. Explain.
4. What are Expectorants? Give the preparation, identification test, assay of any one Expectorant.

II. Write notes on : **(6 x 5 = 30)**

1. Write any five Radio Pharmaceuticals and their uses.
2. What are Antidotes? Explain about any one Antidote used for cyanide poisoning.
3. Explain the theory of Indicators.
4. Write the various steps involved in Gravimetric Analysis.
5. Give the principle involved in the assay of Sodium Chloride.
6. Write a note on Dentifrices.

[LJ 805]

OCTOBER 2016

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION
(2009-2010 Regulation)
FIRST YEAR
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. List out various Volumetric methods. Explain Redox titration with suitable example.
2. Explain the principle and procedure involved in the limit test for arsenic with the help of a neat diagram.
3. Give the preparation, identification tests, assay and medicinal uses of any two Antacids.
4. What is Complexometric titration? Explain its principle with suitable examples.

II. Write notes on:

(6 x 5 = 30)

1. Describe the principle involved in modified Volhard's method with example.
2. Define error and write its types.
3. Write a note on various Pharmaceutical Aids with examples.
4. What are Cathartics? Give an example.
5. Role of Zinc as essential elements.
6. Explain about the Masking and Damasking agents.

[LK 805]

MAY 2017

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION
(2009-2010 Regulation)
FIRST YEAR
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Write in detail about the sources of impurities in pharmaceutical substances. Explain the method and principle involved in the limit test for sulphate.
2. Define radioactivity. Explain the types of radiation. List out various method for detecting and measuring radioactive radiation. Describe any one method.
3. Define antacid, classify it with examples. What are the qualities of an ideal antacid? Write about the combinations of an antacid with suitable examples. Explain the acid neutralizing capacity of antacid.
4. What is non-aqueous titration? Explain the various solvents involved in non-aqueous titration with examples.

II. Write notes on:

(6 x 5 = 30)

1. Write the storage and medicinal uses of oxygen, nitrous oxide and helium.
2. Write a note on iodine solutions and povidone - iodine.
3. Explain the assay of calcium gluconate and give any one identification test.
4. a) Name the inorganic compounds used as antidote for cyanide poisoning. Justify your answer.
b) Define expectorant, sedative and hypnotics.
5. Discuss on official preparations of sodium chloride.
6. Write a note on silicone polymers and simethicone.

[LL 805]

OCTOBER 2017

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION
(2009-2010 Regulation)
FIRST YEAR
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Explain on various types of Argentimetric titrations with examples.
2. Explain the principle and procedure for limit test for iron including the reason for the addition of various reagents.
3. Describe the principle involved in the assay of Magnesium Sulphate and Ammonium Chloride.
4. Define primary and secondary standards. What are the requirements of primary standard? Add a note on Arrhenius concept of acid - base and its limitations.

II. Write notes on:

(6 x 5 = 30)

1. Define antidote, sclerosing agents and expectorants with examples. Add a note on antimicrobial agents.
2. Write the clinical application, hazards and precautions of radiopharmaceuticals.
3. Describe the electrolytes used for replacement therapy with an example.
4. Give the preparation, medicinal uses and storage condition of oxygen and nitrous oxide.
5. List the sources of impurities in pharmaceutical substances and explain on any two.
6. Write the principle involved in the titration of very weak bases by non aqueous titration.

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

[LM 805]

MAY 2018

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION

(2009-2010 Regulation)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. What is Non-Aqueous Titration? Write the types of solvents used in Non-Aqueous Titration with examples.
2. Explain in detail about different types of Complexometric titrations with examples.
3. Explain the properties of Alpha, Beta and Gamma Rays. What are the clinical applications of Radio isotopes?
4. Explain on physiological acid-base balance and its importance. Discuss briefly on any five electrolytes used in acid-base imbalance.

II. Write notes on:

(6 x 5 = 30)

1. Explain the role of fluorides as anti caries agent.
2. What are respiratory stimulant? Give the preparation and uses of Ammonium carbonate.
3. Write note on pharmaceutical importance of medicinal gases.
4. Write about acid neutralizing capacity of antacids.
5. Explain the principle and procedure involved in the limit test for Arsenic with a neat labelled diagram.
6. Define antidote and write a note on Sodium nitrite.

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

[LN 805]

AUGUST 2018

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION

(2009-2010 Regulation)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Define Acidifiers and explain the term “Achlorhydria”. Give the preparation, assay and medicinal uses of Ammonium chloride.
2. List out various volumetric methods and explain back titration with example.
3. What are Antimicrobials? Write the preparation and assay of chlorinated lime and Boric acid.
4. Write in detail the preparation, properties, identification tests, assay and uses of Oxygen.

II. Write notes on:

(6 x 5 = 30)

1. What is Ceriometry? Explain its advantage over other oxidizing agents.
2. Write the principle involved in the limit test for Iron.
3. Explain the physiological role of Calcium and Potassium.
4. Write notes on masking and demasking agents.
5. Write notes on radio opaque contrast media.
6. Define Sedatives. Write the preparation and assay of Potassium bromide.

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

[LN 805]

OCTOBER 2018

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION

(2009-2010 Regulation)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Write in detail about the sources of impurities in pharmaceutical substances. Explain the method and principle involved in the limit test for sulphate.
2. Define radioactivity? Explain the types of radiation. List out various method for detecting and measuring radioactive radiation. Describe any one method.
3. Define Antacid, classify it with examples. What are the qualities of an ideal antacid? Write about the combinations of an antacid with suitable examples and acid neutralizing capacity.
4. What are Essential and Trace ions. Write about the physiological role of Iron, Copper and Zinc.

II. Write notes on:

(6 x 5 = 30)

1. List out the Official preparations of Sodium chloride. Write the composition, storage and medicinal uses of any two of it.
2. Explain about the steps involved in the Gravimetric analysis.
3. Define the terms which were given below with suitable examples.

a. Cathartics	b. Expectorant	c. Acidifiers
d. Antimicrobials	e. Complexation	
4. Write a note on Silicone polymers and Simethicone.
5. Write about the Magnesium hydroxide oral suspension. Mention its synonym.
6. Write the preparation of Boric acid. Discuss the principle involved in the assay of Boric acid.

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

[LO 805]

MAY 2019

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION

(2009-2010 Regulation)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Explain in detail about acid-base balance in blood. What are the electrolytes used for maintaining the physiological acid-base balance? Discuss in detail about any two of it.
2. Write the assay with principle, storage and medicinal uses of:
a) Ammonium chloride b) Hydrogen peroxide
3. Briefly discuss about Antimicrobials. Explain in detail about the preparation, properties with suitable reactions and medicinal uses KMnO_4 .
4. a) What is EDTA? Write its structure and role in Complexometric titration.
b) Briefly discuss on Redox titrations.

II. Write notes on:

(6 x 5 = 30)

1. Give reasons:
a) Addition of alcohol in the limit test for Sulphate.
b) Use of lead acetate cotton wool in the limit test for Arsenic.
c) Addition of Ammonia in the limit test for Iron.
2. Explain the storage and labelling procedure of Oxygen, Carbon di-oxide and Nitrous oxide.
3. Explain Pharmaceutical aids. Give the various types of Pharmaceutical aids with suitable examples.
4. Write the preparation and standardisation of 0.1N Perchloric acid.
5. Differentiate between Iodimetry and Iodometry with suitable example.
6. Write briefly on Theory of indicators.

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

[LP 805]

OCTOBER 2019

Sub. Code: 3805

PHARM. D DEGREE EXAMINATION

(2009-2010 Regulation)

FIRST YEAR

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Define Limit test and classify it. Draw a neat diagram of Arsenic limit test apparatus & explain the method and principle behind it.
2. Define Non-aqueous titration. Describe the various solvents involved in Non-aqueous titration? How can you standardize of 0.1N Perchloric acid?
3. Write briefly on Electrolyte Balance and discuss on the Official Preparations of Sodium chloride as electrolyte.
4. Write the preparation, assay, storage and medicinal uses of Oxygen. Add a note on Storage and Labeling procedures for Carbon dioxide and Nitrous oxide.

II. Write notes on:

(6 x 5 = 30)

1. Write about the Anticaries agent and Dentifrices. Add a note on Sodium fluoride.
2. Define Expectorants with examples. Write a note on Ammonium chloride.
3. Write about the Milk of Magnesia and Magnesium sulphate.
4. Define Essential and Trace ions. Write about the physiological role of Iron and Copper.
5. Write a note on Theory of indicators.
6. Write the principle involved in the Precipitation titration.

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

[PHARMD 0321]

MARCH 2021

Sub. Code: 3805

(OCTOBER 2020 EXAM SESSION)

PHARM. 'D' DEGREE EXAMINATION

FIRST YEAR (2009-2010 Regulation)

PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 383805

Time : Three hours

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Explain the preparation and assay of
 - a) Aluminium hydroxide Gel.
 - b) Potassium permanganate.
2. Draw a neat diagram of Arsenic limit test apparatus & explain the procedure and principle behind it.
3. What are consumer Dental products? Explain dental carries and write the role of fluorides against it. Give the preparation, properties, assay, storage and medicinal uses of Sodium fluoride.
4. What is non-aqueous titration? Explain the types of solvents involved in non-aqueous titration with examples.

II. Write notes on:

(6 x 5 = 30)

1. a) Name the inorganic compounds used as antidote for Cyanide poisoning. Justify your answer.
 - b) Define Expectorant, Sedative and Hypnotics.
2. Explain the procedure and principle behind the limit test for Iron.
3. Write the method of preparation, properties, assay and medicinal uses of ZnCl_2 .
4. Define Essential and Trace ions. Write about the physiological role of Iron.
5. Write a detailed note on Povidone-Iodine as antimicrobials.
6. Explain the assay of Calcium gluconate with suitable reaction.

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[PHARMD 0122]

**JANUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY
Q.P. Code : 383805**

Time : Three hours

Answer ALL Questions

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Define primary and secondary standards. What are the requirements of primary standard? Add a note on law of mass action and Henderson-Hasselbalch equation.
2. Define Dentrifrices with examples. Explain on pM indictors.
3. a) What are saline cathartics and write the mechanism of action.
b) Discuss the preparation and uses of Magaldrate and magnesium carbonate.
4. Explain the clinical application, hazards and precautions of radiopharmaceuticals.

II. Write notes on:

(6 x 5 = 30)

1. Write a note on complexometric titrations.
2. Discuss the principle involved in the assay of sodium chloride by Mohr's method.
3. Explain on physiological role of copper and chromium.
4. Describe the limit test for chlorides and sulphates in potassium permanganate.
5. Explain the concept of Redox titration.
6. Briefly explain the preparation and uses of Nitrous oxide and Helium.

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[PHARMD 0522]

**MAY 2022
(APRIL 2022 EXAM SESSION)**

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY
Q.P. Code : 383805**

Time : Three hours

Answer ALL Questions

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Define Isotopes, Isobars and Radioisotopes with suitable examples. Describe the medicinal uses and precautions in the uses of Radioisotopes.
2. What are consumer Dental products? Explain dental carries and write the role of fluorides against it. Give the preparation, properties, assay, storage and medicinal uses of Sodium fluoride.
3. a) Iodine functions as an oxidizing agent and Reducing agent. Discuss with suitable examples.
b) Discuss briefly on Errors.
4. a) Explain volumetric analysis. What are its types? Explain the standardization of 0.1 N Sodium hydroxide solution.
b) Write about the physiological role of Zinc and Iodine.

II. Write notes on:

(6 x 5 = 30)

1. Explain the method and principle behind the limit test for Iron.
2. Give the preparation, properties, assay, storage and medicinal uses of Potassium citrate.
3. Write briefly on Sedative and Respiratory stimulant with suitable examples.
4. Discuss the preparation and properties of Calcium chlorohypochlorite.
5. Explain in detail about the assay of Calcium gluconate and give its medicinal uses.
6. Write a note on Magnesium hydroxide Oral suspension.

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[PHARMD 1122]

**NOVEMBER 2022
(OCTOBER 2022 EXAM SESSION)**

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY
Q.P. Code : 383805**

Time : Three hours

Answer ALL Questions

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Explain the theory of various Precipitation titrations. Illustrate the endpoint detection involved in Fajan's method.
2. Describe the Preparation, Assay, Storage container, labeling, handling precautions and uses of Oxygen.
3. Summarize the principle involved in Non-Aqueous titration and explain various solvents used in the non-aqueous titration.
4. Detail the ideal properties of Antacids and Significance of combination antacid therapy with examples.

II. Write notes on:

(6 x 5 = 30)

1. Write notes on masking and demasking agents.
2. Explain various Acid-Base concept and Buffer solutions.
3. Summarize the principle and procedure involved in limit test for Arsenic.
4. Explain the mechanism of action of antimicrobial agents. Write the preparation and assay of Boric acid.
5. Describe basic concepts of Gravimetry and mention its applications.
6. Define the terms with examples
 - i) Antacid
 - ii) Acidifier
 - iii) Saline Cathartics
 - iv) Expectorant
 - v) Sedatives.

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

[PHARMD 0423]

APRIL 2023

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Q.P. Code: 383805

Time : Three hours

Answer ALL Questions

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Explain the principle involved in Complexometric titration. Discuss about metallochromic indicators.
2. Summarize the principle and procedure involved in limit test for Arsenic with neat labeled diagram of Gutzeit apparatus.
3. Write in detail about the sources of impurities in Pharmaceutical substances. Explain the method and principle involved in the limit test for chloride.
4. Describe the functions of Electrolytes in physiological acid - base balance and in Electrolyte replacement therapy. List out the composition and uses of Oral rehydration salt.

II. Write notes on:

(6 x 5 = 30)

1. Explain the various steps involved in Gravimetric Analysis.
2. Explain various types of Errors and methods to minimize errors in quality control.
3. Discuss the monograph of any one antidote used for cyanide poisoning with its mechanism of action.
4. Describe about Pharmaceutical aids with suitable examples. Explain the monograph Magnesium Stearate.
5. Explain the preparation and assay of Hydrogen peroxide and Boric acid.
6. Discuss the preparation, properties, assay and uses of Ammonium chloride.

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

[PHARMD 1023]

OCTOBER 2023

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Q.P. Code: 383805

Time : Three hours

Answer ALL Questions

Maximum : 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. What are antimicrobial? Write its mechanism of action with suitable example. Explain the assay of any one of them.
2. What is Gravimetric titration? Explain the various steps involved in it with example.
3. Explain Pharmaceutical aids. Give the various types of Pharmaceutical aids with suitable examples.
4. Write the principle involved in the non aqueous titration. Preparation and Standardisation of perchloric acid.

II. Write notes on:

(6 x 5 = 30)

1. Define Sclerosing agent. Give examples.
2. Explain the various types of errors in quality control.
3. Write the preparation of primary and secondary standard solution.
4. What are medicinal gases? Write properties and assay of nitrous oxide.
5. Write the preparation, properties assay and uses of Potassium Permanganate.
6. Define Acidifier. Write the method of preparation Na_2HPO_4 .

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[PHARMD 0424]

APRIL 2024

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Q.P. Code: 383805

Time: Three hours

Answer ALL Questions

Maximum: 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Explain the Preparation, Acid neutralising capacity and Assay of Aluminum hydroxide gel and Magnesium sulphate.
2. Describe about Cerimetry and Permanganometry titrations.
3. Summarize the sources, daily requirement, biological functions and deficiency manifestation of Iron, Copper, Zinc, Manganese and Selenium.
4. Illustrate the properties of α , β and γ radiations. Describe the applications of Radioisotopes in diagnosis and therapy.

II. Write notes on:

(6 x 5 = 30)

1. Explain the Principle and reaction involved in the limit test of Lead.
2. Detail about the official monograph of Iodine and composition of Iodine solutions.
3. Classify Acidifiers. Write the preparation and assay of Ammonium chloride.
4. (i) Reason for using lead acetate cotton wool in the limit test for Arsenic.
(ii) Reason for using ammonia in the limit test for Iron.
5. Describe the preparation, assay and uses of Carbon dioxide.
6. Explain the Theory and choice of Indicators.

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[PHARMD 1024]

OCTOBER 2024

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Q.P. Code: 383805

Time: Three hours

Answer ALL Questions

Maximum: 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Describe the principle and procedure involved in the limit test for Arsenic.
2. Define and explain the physiological role of copper and Zinc trace ions.
3. Write briefly about Redox titrations.
4. Define and classify antacids. Explain the method of preparation, assay and uses of calcium carbonate.

II. Write notes on:

(6 x 5 = 30)

1. Define antidote and write a note on sodium nitrite.
2. Discuss the composition and uses of ORS.
3. Write note on antimicrobials and mention the assay of boric acid.
4. Write about the Pm indicator used in complexometric titration.
5. Explain the theory of Mohr's method.
6. Explain the Theory of Indicators.

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

[PHARMD 0425]

APRIL 2025

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Q.P. Code: 383805

Time: Three hours

Answer ALL Questions

Maximum: 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Write the various types of Argentimetric titrations with examples.
2. Define primary and secondary standards. What are the requirements of primary standard? Add a note on Arrhenius concept of acid – base and its limitations.
3. What are antimicrobial? Write its mechanism of action with suitable example. Explain the assay of any one of them.
4. Define Dental products. Explain dental carries and write the role of fluorides against it. Give the preparation, properties, assay, storage and medicinal uses of sodium fluoride.

II. Write notes on:

(6 x 5 = 30)

1. Write a note on respiratory stimulants with an example.
2. Explain the acid neutralizing capacity of antacid.
3. Define the following terms with example: i) Cathartics ii) Antioxidants
iii) Antiseptic iv) Astringent v) Dentifrices.
4. Describe the limit test for chlorides and sulphates in potassium permanganate.
5. Define Essential and Trace ions. Write about the physiological role of Iron and Copper.
6. Preparation and Standardization of perchloric acid.

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[PHARMD 1025]

OCTOBER 2025

Sub. Code: 3805

**PHARM. 'D' DEGREE EXAMINATION
FIRST YEAR (2009-2010 Regulation)
PAPER V – PHARMACEUTICAL INORGANIC CHEMISTRY**

Q.P. Code: 383805

Time: Three hours

Answer ALL Questions

Maximum: 70 Marks

I. Elaborate on:

(4 x 10 = 40)

1. Write the preparation, assay, storage and medicinal uses of Oxygen. Add a note on Storage and Labeling procedures for Carbon dioxide and Nitrous oxide.
2. Define primary and secondary standards. What are the requirements of primary standard? Add a note on Arrhenius concept of acid – base and its limitations.
3. a) What EDTA? Write its structure and role in Complexometric titration.
b) Briefly discuss on Redox titrations.
4. Explain the theory of various Precipitation titrations. Illustrate the endpoint detection involved in Fajan's method.

II. Write notes on:

(6 x 5 = 30)

1. Write any one method to measure radio activity.
2. Write the composition of Ringer's solution. Explain its importance.
3. Give the preparation, assay and uses of calcium gluconate.
4. What are all various types of Non-aqueous solvents and explain Acidimetric Method with one example.
5. What are all various Essential trace ions and explain the physiological role of Chromium, Sulfur.
6. What are all the various types of Errors and explain minimization of error in pharmaceutical formulations.
