

APRIL - 2001

[KD 701]

Sub. Code : 4161

FIRST B.Pharmacy DEGREE EXAMINATION,

(Revised Regulations)

Paper 1 — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours
Two and a half hours
for Sec. A and Sec. B

Maximum : 90 marks
Sec A & Sec. B : 60 marks
Section C : 30 marks

Answer Section A and Section B in the
same Answer Book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are the sources of Impurities. Explain with examples?
(b) Explain the Lead Dithizone Limit test. (7 + 8)
2. Explain the method of Assay of the following compounds :
 - (a) Oxygen
 - (b) Titanium Dioxide
 - (c) Calcium Gluconate. (5 + 5 + 5)

3. Give the preparation and uses of the following compounds :

- (a) Precipitated sulphur
- (b) Phosphoric acid
- (c) Lead monoxide
- (d) Nitrous oxide
- (e) Boric acid. (5 × 3 = 15)

4. (a) Explain the theory of indicators.
(b) Give the principle of Gravimetric analysis and explain the assay of any one official compound by Gravimetric analysis. (7 + 8)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Explain the principle of Red-Ox titrations.
6. Give in detail the pharmaceutical applications of Radiopharmaceuticals.
7. How will you test the following :
 - (a) CO₂ and CO in oxygen
 - (b) Oxidising substances in Oxygen?

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8. How are the following impurities tested :
- (a) Iodides and Bromides in sodium chloride
 - (b) Iron in sodium metabisulphite?
9. How are the following reagents prepared :
- (a) Karl Fischer Reagent
 - (b) Benedicts Reagent.
10. How is Sodium Edetate purified and Assayed?
11. How is 0.1 N sodiumthiosulphate solution prepared and standardised by using a primary standard?
12. What happens when
- (a) Boric acid is heated
 - (b) Arsine gas is passed through mercuric chloride paper
 - (c) Carbondioxide is passed through lime water
 - (d) Ferrous ion is treated with thioglycollic acid
 - (e) Alum is added to Plaster of Paris.
13. Give the reason for the following :
- (a) Potassium iodide is added in the limit test of Arsenic
 - (b) Nitrobenzene is added in the Volhard's method of assay of chlorides

(c) Traces of potassium sulphate and alcohol are added in the preparation of Barium Sulphate Reagent.

(d) Sublimed sulphur is used for the preparation of sulphur ointment.

(e) Microbial limit is prescribed in Milk of Magnesia.

NOVEMBER - 2001

[KE 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours
Two and a half hour
for Sec. A and Sec. B

Maximum : 90 marks
Sec. A & Sec. B : 60 marks
Section C : 30 marks

Answer Sections A and B in same Answer Books.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Write briefly on the titrimetric methods involving neutralisation, oxidation-reduction and precipitation reactions. Discuss the theory and choice of neutralisation indicators. (4 + 6)

(b) Write notes on the limit test for Iron. (5)

2. (a) What is Karl-Fischer reagent? How is it standardised? Write the applications and its limitations? (9)

(b) Write preparation and uses of Lithium Aluminium Hydride. (6)

3. (a) List the official compounds of sodium and give their molecular formula. Write the preparation and uses of Sodium Bicarbonate.

Explain how the total alkalinity (calculated as NaOH) and Na_2CO_3 content is estimated in the pharmacopoeial assay of sodium hydroxide. (4 + 3 + 4)

(b) Give the method of preparation of Milk of Magnesia and write on the microbial limit. (4)

4. (a) Write preparation and assay of

(i) Potassium Permanganate

(ii) Nitrous Oxide. (10)

(b) Write notes on the periodic classification of elements. (5)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions :

5. Comment on the following : (5)

(a) In the assay of calcium gluconate 5 ml of 0.05 M magnesium sulphate is added.

(b) Ferroin solution is employed in the assay of ferrous sulphate.

(c) A test on 'loss on drying' is included in the monograph of sodium salicylate.

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(d) In the test for ferric iron in ferrous gluconate, potassium iodide is added.

(e) Sodium metabisulphite is employed as a pharmaceutical aid.

6. Write the method of preparation and uses of volumetric solutions of Titanous chloride. (5)

7. Discuss the different parts of a pharmacopoeial monograph. (5)

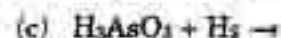
8. (a) Write on the test for

(i) Iodide and

(ii) Bromide in sodium chloride.

(b) Write on test for Neutralising capacity of Aluminium Hydroxide Gel. $(2\frac{1}{2} + 2\frac{1}{2})$

9. Complete the following reactions : (5)



10. Write the molecular formula of the following : (5)

(a) Sodium metabisulphite.

(b) Magnesium Trisilicate.

(c) Lithium Aluminium Hydride.

(d) Thionyl chloride.

(e) Perchloric acid.

11. Explain the Limit test for lead. (5)

12. Write on the preparation of volumetric solutions of sodium thiosulphate and sodium edetate and their applications in pharmaceutical analysis. (5)

13. What are coordination compounds? Write the structure and applications of E.D.T.A, Dimercaprol and Penicillamine. (5)

[KG 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A & Sec. B

Section C : 30 marks

Answer Sections A and B in same Answer Books.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are co-ordination compounds? Classify with suitable examples. Write the structure and applications of E.D.T.A., Dimercaprol and penicillamine. (2 + 9)

(b) What is Radioactivity? Write the applications of Radio Pharmaceuticals. (4)

2. (a) What is periodic acid? How is it prepared? Write the applications with suitable examples. (9)

(b) Write the preparation of volumetric solutions of titanous chloride. What are its applications? (6)

3. (a) Write the preparation and assay of
(i) Iron and Ammonium citrate
(ii) Sodium Aurothiomalate. (10)

(b) Write the preparation and assay of oxygen. (5)

4. (a) Write the preparation and assay of
(i) Sodium stibogluconate
(ii) Sodium thiosulphate. (10)

(b) Explain the limit test for Arsenic. (5)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Comment on the following :

(a) In the assay of Boric acid, neutralised glycerin is added.

(b) A test on 'water' content is included in the monograph of sodium phosphate.

(c) Phenolphthalein solution and also methyl orange solution indicators are employed in the assay of sodium hydroxide.

(d) Iodide free starch solution and sodium nitrite solution are added in the test for iodide in sodium chloride.

(e) Potassium cupri-tartrate solution is added in the test for reducing sugars in calcium gluconate.

6. Write the method of preparation and uses of Lithium Aluminium Hydride.
7. Discuss briefly the different methods employed in the limit test for heavy metals.
8. Write on the test for :
(a) Carbon dioxide and
(b) Carbon monoxide in oxygen.
9. Complete the following :
(a) $\text{Ca}(\text{OH})_2 + \text{Na}_2\text{CO}_3 \rightarrow$
(b) $\text{HF} + \text{Na}_2\text{CO}_3 \rightarrow$
(c) $\text{Fe}^{++} + \text{CH}_2\text{SHCOOH} \rightarrow$
(d) $\text{AgNO}_3 + \text{NH}_4\text{SCN} \rightarrow$
(e) $\text{ZnO} + \text{H}_2\text{SO}_4 \rightarrow$
10. Write the structural formula of the following :
(a) E.D.T.A.
(b) Calcium gluconate
(c) Dimercaprol
(d) Penicillamine
(e) Ferrous Fumarate.
11. Discuss the four quantum numbers. What is Aufbau process?
12. Write the preparation and uses of Nessler's reagent and Mayer's reagent.
13. Discuss the different sources of impurities in pharmaceuticals.
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SEPTEMBER - 2002

[KH 701]

Sub Code : 4161

FIRST B.Pharmacy DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B Section C : 30 marks

Answer Section A and Section B in the SAME
Answer Books.

Answer Section C in the Answer Sheet provided.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) Explain the details about the typical
Monograph of Drugs in I.P.

(b) Give a monograph of IP of any one compound.
(10 + 5)

2. (a) Explain the Theory of Indicators.

(b) Explain the principle of gravimetric method of
analysis. (8 + 7)

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3. (a) What are the sources of Impurities in pharmaceutical substances? Explain with examples.

(b) Explain the Limit test for Arsenic. (7 + 8)

4. Explain the pharmaceutical applications of Radio pharmaceuticals

(a) Cyanocobalamin (Co^{58})

(b) Sodium Iodide (I^{131})

(c) Ferric Citrate (Fe^{59})

(d) Sodium Phosphate (P^{32}) (4 + 4 + 4 + 3)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Explain the principle of Red-Ox titrations with suitable example.

6. Give the preparation, assay and uses of Calcium Gluconate.

7. How will you test the following :

(a) Acidity and stability in Hydrogen peroxide

(b) Magnesium and alkali metals in Calcium Chloride.

8. How the following impurities are detected :

(a) Iodides and Bromides in Chlorides

(b) Iodides and Chlorides in Bromides.

9. List the official compounds of Iron and Aluminium.

10. Give the preparation, assay and uses of leadmonoxide.

11. How the following reagents are prepared and give its uses :

(a) Karl Fischer's Reagent

(b) Perchloric acid.

12. Explain the Dithizone Limit test for Lead.

13. Explain the applications of co-ordination compounds.

APRIL - 2003

[KI 701]

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FIRST B.Pharm. DEGREE EXAMINATION.

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Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

Section C : 30 marks

Half an hour : Section C

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Write the official compounds of Magnesium and give their molecular formula. Write the method of preparation, assay and uses of magnesium sulphate and magnesium carbonate. (10)

(b) Write notes on limit test for sulphates. (5)

2. (a) What are co-ordinated compounds? Write the structure and applications of E.D.T.A., Dimercaprol and Penicillamine. (8)

(b) Write preparation and uses of Boron Trifluoride. (7)

3. (a) Write preparation, assay and uses of calcium compounds. (10)

(b) Write a note on Radioactivity. (5)

4. (a) Write briefly on alloys involving oxidation and precipitation reactions. (10)

(b) Write the preparation and assay of zinc sulphate. (5)

SECTION B — (6 × 5 = 30 marks)

Answer any SIX questions.

5. Explain the limit test for Arsenic. (5)

6. Write briefly on sources of Impurities in pharmaceutical substances. (5)

7. Write the preparation, assay and uses of copper sulphate. (5)

8. (a) Write the test for

(i) Lead in zinc chloride

(ii) Neutralising capacity of aluminium hydroxide.

(b) Write a note on the test for cyanides in potassium permanganate. (2 + 2 + 2)

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9. Complete the following reactions : (5)
- (a) $\text{HgO} + \text{HNO}_3 \rightarrow$
 - (b) $\text{KHC}_4\text{H}_4\text{O}_6 + \text{Sb}_2\text{O}_3 \rightarrow$
 - (c) $\text{KIO}_3 + \text{KI} + \text{HCl} \rightarrow$
 - (d) $\text{NaF} + \text{Pb}(\text{NO}_3)_2 \rightarrow$
 - (e) $\text{Ca}(\text{OH})_2 + \text{Na}_2\text{CO}_3 \rightarrow$
10. Write the method of preparation and uses of silicon compounds. (5)
11. Write briefly on Radio active isotopes and its pharmaceutical applications. (5)
12. Discuss the periodic table on the modern concept of atomic structure. (5)
13. Write the preparation and uses of perchloric acid. (5)
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OCTOBER - 2003

[KJ 701]

Sub. Code : 4161

First B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Two hours and forty minutes Sec. A & Sec. B : 70 marks
for Sec. A and Sec. B Section C : 20 marks

Twenty minutes : Section C

Answer Sections A and B in the **SAME** Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) What are the sources of impurities in pharmaceuticals? (7)
(b) Describe in detail the limit test for iron and write the chemical reactions. (8)
2. (a) What are the different theories of indicators? Explain. (7)
(b) Write the principle and procedure involved in the assay of halides by Fajan's method of precipitation titrations. (8)

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3. (a) Explain the preparation, storage and assay of oxygen gas. (8)

(b) Write a note on Radio pharmaceuticals. (7)

SECTION B — (8 × 5 = 40 marks)

Answer any EIGHT questions.

4. Write the method of preparation and uses of the following :

(a) Karl-Fischer Reagent

(b) Benedicts Reagent.

5. Write the principle and procedure involved in the limit test of Arsenic.

6. Explain the preparation and assay of Hydrogen peroxide.

7. Explain the terms

(a) Nuclei

(b) Isotopes

(c) Isobars

(d) Curie

(e) Half life.

8. Write the chemistry involved in the purity test of the following :

(a) Carbon dioxide and Carbon monoxide in oxygen

(b) Sucrose and reducing sugars in calcium gluconate.

9. How do you prepare Boric acid from Borax. Write the principle involved in the assay of Boric acid.

10. Write the procedure involved in the gravimetric assay of calcium.

11. Write the method of preparation, assay and uses of sodium meta bisulphite.

12. Write a note on EDTA.

13. Describe the method of preparation of sublimed sulphur.

[KK 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours Maximum : 90 marks

Sec. A & B : Two hours and Sec. A & B : 70 marks
forty minutes

M.C.Q. : Twenty minutes M.C.Q. : 20 marks

Answer Section A and B in the SAME Answer Book.

Answer M.C.Q. in the Answer Sheet provided.

SECTION A

Answer any TWO questions : (2 × 15 = 30)

Each question carries 15 marks.

1. Write the sources of the impurities in pharmaceuticals? Describe how you perform the limits tests for lead and iron.

2. Give the methods of assays of the following compounds :

- (a) Strong solution of ammonia
- (b) Sodium carbonate
- (c) Boron
- (d) Titanium.

3. Give the method of preparation and uses of the following chemical agents :

- (a) Silica gel
- (b) Sodium edetate
- (c) Hydrogen peroxide
- (d) Lithium aluminium hydride
- (e) Perchloric acid.

4. Write a note on the test for

- (a) Neutralising capacity of aluminium hydride
- (b) Cyanides in potassium permanganate
- (c) Iodides and bromides in sodium chloride
- (d) Microbial limit in milk of magnesia.

SECTION B

Answer any EIGHT of the following : (8 × 5 = 40)

Each question carries 5 marks only.

Short notes :

5. Write a note on the test for

- (a) Setting property of plaster of paris
- (b) Magnesium and alkali metals in calcium chloride.

6. Write a note on the applications of following radio pharmaceuticals in pharmacy.

- (a) Cyanocobalamine
- (b) Ferric citrate.

7. Write a note on coordination compounds and give the method of preparation and uses of Pencillamine.

8. Give the examples each of the following category of compounds :

- (a) Astringents
- (b) Dentrifriles
- (c) Acidifying agents
- (d) Protectives and Adsorbents
- (e) Antacids.

9. Write the principle involved in limit test for chloride and how determination of chloride in sodium sulphate.

10. Comment on the following :

- (a) NH_4Cl is added in the assay of boric acid
- (b) Potassium thiocyanate is added at the beginning in the assay of copper sulphate
- (c) Thioglycolic acid is added in the limit test for iron.
- (d) Sodium thiosulphate is prepared only in boiled water.
- (e) Silver compounds should be stored away from light.

11. Give the formula and uses of the following :

- (a) Bleaching powder
- (b) Alumina
- (c) Borotrifluoride
- (d) Magnesium trisilicate
- (e) Potassium permanganate.

12. Complete the following reactions :

- (a) $\text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + 2\text{SO}_2 \rightleftharpoons$
- (b) $\text{NaHC}_2\text{O}_4 + \text{NaOH} \rightleftharpoons$
- (c) $\text{H}_2\text{SO}_4 + \text{Na}_2\text{CO}_3 \rightleftharpoons$
- (d) $\text{NaOH} + \text{HCl} \rightleftharpoons$
- (e)  + $\text{CH}_3\text{O K} \longrightarrow$

13. (a) What is the hydronium ion concentration of a solution of hydrochloric acid having a pH of 4.52.

(b) An acid having $\text{PK}_a = 4$ was present in a solution having $\text{pH} = 3$, what is the percent ionization of the acid.

14. Explain the limit test for arsenic.

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CHEMISTRY

Time : Three hours

Maximum : 90 marks

Two hours and forty minutes Sec. A & Sec. B : 70 marks
for Sec. A and Sec. B

Twenty minutes for M.C.Q.

M.C.Q. : 20 marks

Answer Sections A and B in the **SAME** Answer Book.

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) What are radio-pharmaceuticals? Discuss important radio pharmaceutical used in therapy and diagnosis. (6 + 4)

(b) In brief discuss the theory of Valency. (5)

2. (a) What is purity and test for purity? Explain the principle and procedure for the limit test for Arsenic with necessary diagram and chemical reactions. (2 + 6 + 2)

(b) How do you detect chloride and sulphate in potassium permanganate? (5)

3. (a) Define Gravimetry. Explain the terms co-precipitation and post-precipitation with examples. How do you estimate calcium by gravimetry. (2 + 2 + 4 + 2)

(b) How do you determine the neutralising capacity of aluminium hydroxide gel. (5)

4. (a) List the official compounds of iron and give their molecular formulae. How do you prepare and carry out the assay of ferrous gluconate. (6 + 4)

(b) Write a note on sources of impurities in pharmacopoeial substances.

SECTION B — ($8 \times 5 = 40$ marks)

Answer any EIGHT questions.

5. Comment on the following : (5)

(a) throglycollic acid is used in iron limit test

(b) nitric acid is used in chloride limit test

(c) glycerol in the assay of boric acid

(d) methyl orange and not phenolphthalein indicator is used in the assay of Sodium Carbonate

(e) 5 ml of 0.05 M magnesium sulphate is added in the assay of Calcium gluconate.

6. Write the method of preparations and uses of the following compounds :

(a) Perchloric acid

(b) Lithium aluminium hydride. ($2\frac{1}{2} + 2\frac{1}{2}$)

7. Define the terms :

- (a) pharmacopoeia
- (b) assay
- (c) monograph
- (d) official compound
- (e) equivalent weight.

8. Write the molecular formula and uses of the following :

- (a) Alumina
- (b) Titanous chloride
- (c) Hydrogen peroxide
- (d) Periodic acid
- (e) Thionyl chloride.

9. (a) Write the principle and procedure involved in the limit test for heavy metals.

(b) Write a note on milk of magnesia. ($2\frac{1}{2} + 2\frac{1}{2}$)

10. (a) How do you standardise the given sodium hydroxide solution (approximate normality is 0.1 N).

(b) How do you standardise iodine solution (approximate normality is 0.05 N)? ($2\frac{1}{2} + 2\frac{1}{2}$)

(5) 11. Write the structure of uses of E.D.T.A., Dimercaprol Penicillamine, ferroin and Sodium thiosulphate. (5)

12. How do you carry out the test for purity of the following compounds? ($2\frac{1}{2} + 2\frac{1}{2}$)

- (a) Plaster of Paris
- (b) Calcium gluconate.

(5) 13. Write on the test for : ($2\frac{1}{2} + 2\frac{1}{2}$)

- (a) Iodides and bromides in sodium chloride
- (b) Carbondioxide and Carbon monoxide in oxygen.

14. Complete the following reactions :

- (a) $\text{Na}_2\text{CO}_3 + \text{Ca}(\text{OH})_2 \rightleftharpoons$
- (b) $\text{HCl} + \text{NaOH} \rightleftharpoons$
- (c) $\text{Ca}(\text{OH})_2 + 2 \text{HCl} \rightleftharpoons$
- (d) $\text{CO}_3^{2-} + \text{H}_2\text{O} \rightleftharpoons$
- (e) $\text{H}_2\text{PO}_4^- + \text{OH}^- \rightleftharpoons$

[KM 701]

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FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Sec. A & B : Two hours and
forty minutes

Sec. A & B : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

SECTION A — ($2 \times 15 = 30$ marks)

Answer any TWO questions.

1. (a) List out, with suitable examples, various sources of impurities. Describe in detail the limit test for lead. (6 + 4)

(b) Write a brief note on theory of acid base indicators. (5)

2. (a) What are coordination compounds? Discuss on the properties of ligands with suitable examples. (4 + 6)

(b) What are chelating agents? Explain with special reference to dimercaprol, dirod EDTA and penicillamine. (5)

3. (a) List the official compounds of calcium and give their molecular formula. How do you prepare and carry out the assay of calcium lactate? (6 + 4)

(b) Write the principle and procedure involved in the limit test for iron. Write chemical reactions. (5)

4. (a) Discuss the diagnostic and therapeutic applications of radio isotopes. (6 + 4)

(b) Write a note on :

(i) Setting property of plaster of Paris

(ii) Neutralising capacity of aluminium hydroxide.

SECTION B — ($8 \times 5 = 40$ marks)

Answer any EIGHT questions.

5. Write the functions of the following : (5)

(a) Potassium iodide in Arsenic Limit test

(b) Glycerol in the assay of boric acid

(c) Alcohol in the limit test for chlorides in potassium permanganate

(d) Ferrion solution in the assay of ferrous sulphate

(e) Ferric iron in the assay of sodium chloride.

6. Write the method of preparation and uses of the following compounds/reagents. (5)
- Nessler's reagent
 - Boron tri fluoride
 - Silica gel
 - Lithium aluminium hydride
 - Benedict's reagent.
7. (a) What is Karl-Fischer reagent? How it is prepared and standardised? (3 + 2)
- Define the terms :
 - Monograph
 - Pharmacopoeia.
8. How do you carry out the test for purity of the following compounds?
- Iodides and bromides in sodium chloride
 - Cyanides in potassium permanganate. (2½ + 2½)
9. What is precipitation titration? Explain Volhard's method of halide estimation. (5)
10. (a) Write a note on Redox indicators. (3 + 2)
- Write the preparation of milk of magnesia and its uses.
11. Explain the preparation, assay and uses of the following :
- Oxygen
 - Barium sulphate. (2½ + 2½)
12. Write the preparation and uses of the following :
- Potassium antimony tartarate
 - Sodium metabisulfite. (2½ + 2½)
13. Write the preparation and assay of the following :
- Nitrous oxide
 - Ammonium chloride. (2½ + 2½)
14. Explain the Dithizone limit test for lead.

AUGUST - 2005

[KN 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 15 = 30)

Answer any TWO questions.

1. (a) What are the sources of impurities in pharmaceutical substances? Explain with examples.

(b) Explain the limit test for Arsenic. (8 + 7 = 15)

2. (a) Explain the details about the typical monograph of drugs in I.P.

(b) Give a monograph of I. P. of lead compound.

(10 + 5 = 15)

3. (a) List the official compounds of Boron and give the preparation, properties and uses of any one compound.

(b) Describe the method of preparation and uses of sodium thiosulphate. (8 + 7 = 15)

4. (a) Explain the principle involved in the official limit test for Iron.

(b) Explain the principle involved in Redox-titration with suitable example. (8 + 7 = 15)

II. Short notes : (8 × 5 = 40)

Answer any EIGHT questions.

1. Give the preparation, assay and uses of copper sulphate.

2. How will you test the following?

(a) Sucrose and reducing sugar in calcium gluconate.

(b) Setting property of plaster of paris.

3. List the official compounds of Magnesium and Mercury.

4. How are the following impurities are detected?

(a) Iron in sodium metabisulphate

(b) Lead in Zinc chloride.

5. Give the preparation and assay of lead sub acetate solution.

6. Comments on the use of the following :

(a) Nitrobenzene in the assay of ammonium chloride.

(b) Glycerol/mannitol in assay Boric acid.

7. How are the following reagents prepared and give its uses?

(a) Nessler's reagent.

(b) Karl Fischer's reagent.

8. Explain pharmaceutical application of radiopharmaceutical, [cyanocobalamin(⁵⁸CO)]

9. Explain principle involved in the assay calcium chloride, based on complexometric titration.

10. Discuss the theory of valency in brief.

AUGUST - 2005

[KN 735]

Sub. Code : 4226

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer any TWO questions.

I. Long Essay : (2 × 15 = 30)

1. (a) What is the importance of limit test in the pharmaceutical preparations. Discuss the limit test of arsenic and write all chemical reactions. (7)

(b) Write a note on Indian pharmacopoeia and monograph. (8)

2. (a) Classify antacids. Explain the term Acid Neutralising Capacity. Write preparation and assay of Aluminium Hydroxide gel. (7)

(b) Explain one method of measuring radioactivity. What are the clinical applications of I^{131} , Co^{58} and Barium Sulphate. (8)

3. (a) Write a note on major intra and extra cellular electrolytes with reference to their important physiological role. (7)

(b) Mention Dental products used in dental care. What is the role of fluoride as anti caries? (8)

II. Short notes on : (8 × 5 = 40)

Answer any EIGHT questions.

1. How is Carbon dioxide obtained for medicinal use? How it is stored and what are its applications?

2. Explain the mechanism of action of antimicrobial astringent agents. How do you carry out assay of Chlorinated line?

3. What is an expectorant? Write the preparation and assay of Ammonium Chloride.

4. Write the applications of the following in pharmaceutical analysis :

(a) disod EDTA

(b) 1, 10 phenanthro line.

5. Write a note on Pharmaceutical Aids.

6. What is an antidote? How Sodium Nitrite and Charcoal are useful in some specific poisoning.

7. Write the method of preparation and uses of the following :

(a) Lithium Aluminium Hydride.

(b) Periodic acid.

8. What is the physiological importance of copper and Zinc in the body? How do you prepare ferrous gluconate?

9. Write mechanism of action of Saline Cathartics. Write the assay of Magnesium Sulphate.

10. Write a note on :

(a) Calamine

(b) Povidone iodine.

FEBRUARY - 2006

[KO 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 15 = 30)

Answer any TWO questions.

**1. (a) What is radio pharmaceuticals? Describe the
uses in pharmaceuticals.**

**(b) Write the applications of Ferric Citrate (⁵⁹Fe)
and Sodium Phosphate (³²P).**

2. Give the method of assay of following :

- (a) Nitrous oxide**
- (b) Magnesium oxide**
- (c) Aluminium hydroxide**
- (d) Potassium iodide**
- (e) Barium chloride.**

3. Give the method of preparation and uses of

- (a) Silica gel**
- (b) Sodium edetate**
- (c) Periodic acid**
- (d) Benedict's reagent**
- (e) Perchloric acid.**

**4. What are the sources of impurities in
pharmaceuticals? Describe how you perform limit tests
for chloride and heavy metals.**

II. Short notes : (8 × 5 = 40)

Answer any EIGHT questions.

1. Give the method of preparation and uses of

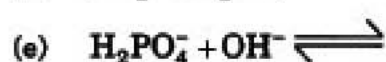
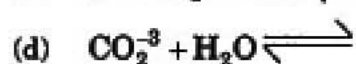
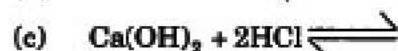
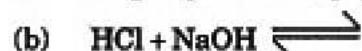
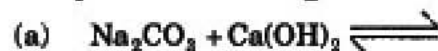
- (a) Mayer's reagent**
- (b) Karl Fisher's reagent**
- (c) Lithium aluminium hydride**
- (d) Benedict's reagent**
- (e) Zinc oxide.**

**2. Give the examples each of the following category
of compounds**

- (a) Laxative**
- (b) Antimicrobial**
- (c) Expectorant**
- (d) Adsorbent**
- (e) Antacid.**

FEBRUARY - 2006

3. Complete the following reactions :



4. Give the formula and uses of the following

(a) Light kaolin

(b) Zinc oxide

(c) Bleaching powder

(d) Aluminium hydroxide

(e) Milk of magnesia.

5. Comment on the following :

(a) NH_4Cl is added in the assay of boric acid

(b) Starch mucilage is used as indicator towards the end in the assay of copper sulfate

(c) Potassium cyanide is used in the limit test for lead

(d) Sodium thiosulfate is prepared only in boiled water

(e) Water is not directly added to Conc H_2SO_4 .

6. Give the procedure for the test of

(a) Acid Adsorption of magnesium trisilicate

(b) Iodides and chlorides in potassium bromide.

7. Write a note on co-ordination compounds and give the method of preparation and uses of dimercaprol.

8. Write the method of preparation and uses of following chemicals

(a) Flemina

(b) Sodium edetate

(c) Ferric sulfate

(d) Sodium thiosulfate

(e) Thianyl chloride.

9. What is the pH of a 3.43×10^{-5} N solution of hydro-chloric acid? Since hydrogen chloride is virtually totally ionized in water, the above solution contains 3.43×10^{-5} gram-equivalents of H_{30}^+ .

10. Give the test for purity of the following :

(a) Coarse particles in light Kaolin.

(b) Cyanides in potassium permanganate.

FEBRUARY - 2006

[KO 735]

Sub. Code : 4228

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 15 = 30)

Answer any TWO questions.

1. (a) What are the impurities commonly found in medicinal preparations? Discuss the sources of impurities in pharmaceutical substances. (8)

(b) Give the principles for the limit test for lead. (7)

2. Present a general account of inorganic radiopharmaceuticals giving details of their clinical applications, dosage hazards and precautions that should be taken in their use. (15)

3. (a) Write a note on the important diluents and excipients used as pharmaceutical aids in pharmaceutical industry. (8)

(b) Explain the role of electrolytes in the replacement therapy. (7)

II. Short notes on :

(8 × 5 = 40)

Answer any EIGHT questions.

1. Describe the preparation and uses of any two anti-oxidants.

2. What are antacids and how do they act?

3. Write the role of fluorides as anti-caries agents.

4. Give the method of preparation, assay and uses of hydrogen peroxide.

5. What are saline cathartics? Explain the method of preparation and assay of magnesium sulphate.

6. What is complexing agent? Discuss the role and importance of EDTA as a complexing agent.

7. Write short notes on Poisons and their antidotes.

FEBRUARY - 2006

8. Describe the preparation and uses of any two gastrointestinal agents.
 9. Discuss the physiological importance of iron in the body. How do you prepare ferrous gluconate?
 10. What is an expectorant? Write the preparation and assay of Ammonium chloride.
-

AUGUST - 2006

[KP 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 20 = 40)

Answer any TWO questions.

1. (a) Enumerate the sources of impurities in pharmacopoeial substances. Explain the principles involved in the limit tests for iron and lead giving suitable equations. (5 + 5 + 5 = 15)

(b) Explain the principle involved in the limit test for Arsenic with a neat labelled diagram of Gutzeit's apparatus and chemical equations involved. (5)

2. (a) Give an account of radiopharmaceuticals with special reference their applications in therapy and diagnosis. (10)

(b) Discuss the techniques involved in the Gravimetric analysis. Add a note on post precipitation and co-precipitation. (10)

3. (a) Enlist the official compounds of magnesium with their molecular formulae and uses. Add a note the method of preparation and assay of Milk of Magnesia.

(b) How do you carry out the acid absorption capacity of Magnesium trisilicate? (20)

4. (a) Explain with examples the precipitation titrations.

(b) Why NH_4Cl can't be assayed by Mohr's method?

(c) Add a note on adsorption indicators.

II. Short notes :

(6 × 5 = 30)

Answer any SIX questions.

1. Define the terms :

(a) Normality

(b) Antacid

(c) Expectorant

(d) Astringent

(e) Assay.

AUGUST - 2006

2. Give reasons for the following :

- (a) dil HCl is used in the limit test for sulphates
- (b) KI is used in the limit test for Arsenic
- (c) A test for purity for the presence of reducing sugars is recommended in calcium gluconate
- (d) KI is used in the preparation of iodine solutions
- (e) MgSO_4 is used in the assay of calcium gluconate.

3. Explain the method of preparation and uses of (any two) :

- (a) Sodium edetate
- (b) Periodic acid
- (c) LiAlH_4 .

4. Give the molecular formulae and uses of

- (a) Thionyl chloride
- (b) Hypo
- (c) Alumina
- (d) Perchloric acid
- (e) Titanus chloride.

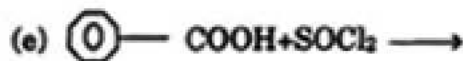
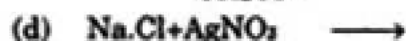
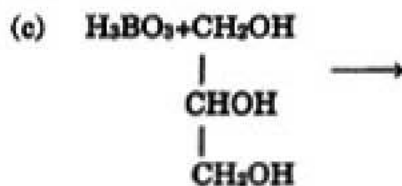
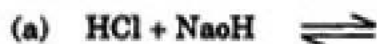
5. How do you carryout the test for purity for the following (any two) :

- (a) Iodides and chlorides in potassium bromide
- (b) Lead in Zinc chloride
- (c) Chlorides and sulfates in KMnO_4

6. Write the method of preparation and assay of :

- (a) Boric acid or copper sulfate
- (b) Discuss the theory of Valency.

7. Complete the following equations :



AUGUST - 2006

[KP 735]

Sub. Code : 4226

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Time : Three hours

Maximum : 90 marks

Theory : Two hours and

Theory : 70 marks

forty minutes

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 20 = 40)

Answer any TWO questions.

1. (a) What are antimicrobials? Write the preparation, assay and uses of hydrogen peroxide and chlorinated lime.

(b) What are dental products? What is the role of fluorides in dental products?

2. (a) Write a note on radio pharmaceuticals and explain its applications. (10)

(b) Discuss the different sources of impurities in pharmaceutical substances. (10)

3. (a) Classify gastro intestinal agents with examples. (5)

(b) Write notes on the method of preparation, assay and uses of aluminium hydroxide gel, ammonium chloride and magnesium sulphate. (15)

4. (a) Explain Werner's coordination theory with example. (8)

(b) Write the structure and pharmaceutical applications of dimercaprol, pencillamine, EDTA and 1, 10 phenanthroline. (12)

II. Short notes on:

(6 × 5 = 30)

Answer any SIX questions.

1. Give the method of preparation and uses of the following :

(a) Aluminium isopropoxide

(b) Diazomethane.

2. Write a note on the physiological role of iron and copper.

3. Give reasons for the following :

(a) Use of dilute nitric acid in the limit test for chloride

(b) Use of glycerin in the assay of boric acid

AUGUST - 2006

(c) Use of borosilicate glass containers in the limit test for lead

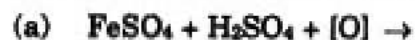
(d) Use of thioglycollic acid in the limit test for iron

(e) Use of alcohol in the limit test of chlorides for potassium permanganate.

4. Explain the principle involved in the limit test for arsenic with equation.

5. Name the medicinal gases. Explain the assay of carbon dioxide.

6. Complete and balance the following equations :



7. Explain the mechanism of action of astringents and describe how to carry out the assay of potassium permanganate.

8. Write the uses of the following compounds :

(a) Potassium bromide

(b) Ammonium chloride

(c) Sodium thiosulphate

(d) Ferrous sulphate

(e) Povidone iodine.

FEBRUARY - 2007

[KQ 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Explain radioactivity and radioisotopes.
(b) What are the medical and pharmaceutical applications of radioisotopes? Give examples.
(c) Write notes on the preparation, properties, dose and uses of any two radio pharmaceuticals.
2. Explain in detail the theories of indicators used in neutralisation titration.

3. List down the calcium compounds of pharmaceutical interest along with their chemical formulae and uses. Write the preparation and assay of any two of them.

4. Name the official magnesium compounds and write their chemical nature and use. Explain the preparation and assay of any two of them.

II. Short notes : (6 × 5 = 30)

Answer any SIX questions.

1. Explain the principle and the technique involved in the limit test for Iron.
2. How will you detect the presence of CO₂ and CO in oxygen?
3. How will you detect the following :
(a) Iodide and Bromide in sodium chloride
(b) Iron in sodium metabisulphite.
4. Explain the synthesis of hydrogen peroxide and add a note on its stability.
5. Write notes on the limit test for lead.

FEBRUARY - 2007

6. Explain the synthesis and assay of ammonium chloride.
7. How are the following reagents prepared? Mention their use.
- (a) Nessler's reagent
 - (b) Mayer's reagent.
8. Write the preparation and use of dimercaprol.
-

FEBRUARY - 2007

[KQ 735]

Sub. Code : 4226

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Time : Three hours

Maximum : 90 marks

**Theory : Two hours and
forty minutes**

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 20 = 40)

Answer any TWO questions.

1. (a) Give an account on various sources of impurities in Pharmaceutical substances.

(b) Explain the principle and procedure for the limit test for Arsenic.

2. Present a general account on measurement of radio activity. Mention the clinical applications of ^{131}I , CO^{58} . What are the precautions that should be taken in their use.

3. (a) What is an antidote? How sodium nitrite and charcoal are useful in some specific poisoning.

(b) Write the mechanism of action of saline cathartics. Write the assay of Magnesium sulphate.

(c) Discuss the role and importance of EDTA as a complexing agent.

4. (a) Write a note on the important diluents and excipients used as Pharmaceutical aids in Pharmaceutical industry.

(b) Give the principles for the limit test for lead.

II. Short notes :

(6 × 5 = 30)

Answer any SIX questions.

1. Give the preparation and uses of any two antioxidants.

2. Describe the method of preparation essay and uses of Hydrogen Peroxide.

3. Write the method of preparation assay and uses of Ferrous Sulphate.

4. Write briefly an anti-carries agents.

5. What are antacids? How do they act?

6. Describe the preparation and uses of any two gastrointestinal agents.

7. Expectorants.

8. Buffer solutions.

August-2007

[KR 735]

Sub. Code : 4226

(Candidates admitted from 2004-05 onwards)

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 15 = 30)

Answer any TWO questions.

1. (a) Define limit test. Explain the importance of limit test in the pharmaceutical preparations. Explain about the limit test for chloride in potassium permanganate with the special procedures followed.

(b) Write the clinical applications of I^{131} , Co^{58} and barium sulphate. (5)

2. (a) Explain about pharmaceutical aids with the help of five different examples.

(b) Mention five different products used in dental care and explain about its relevance.

3. (a) What are antacids? Classify antacids. How the acid neutralising capacity of aluminium hydroxide gel is determined.

(b) Explain the theory of co-ordination compounds giving importance to its application in pharmacy and pharmaceutical analysis. (8)

II. Short notes on : (8 × 5 = 40)

Answer any EIGHT questions.

1. Describe the modern periodic table. Write its merits and demerits. (5)

2. Explain the mechanism of action of
(a) Ammonium chloride as acidifier
(b) Magnesium sulphate as saline cathartic. (2 × 2½ = 5)

3. (a) Write a note on adsorbents and protectives giving one each examples.

(b) Write a short note on calamine. (3 + 2 = 5)

4. (a) Write the chemical nature and uses of potash alum.
- (b) Write the principle involved in the assay of boric acid. (2 + 3 = 5)
5. (a) Explain the physiological role of manganese and chromium.
- (b) What is oral rehydration salt and explain its importance. (2 + 3 = 5)
6. (a) Write the method of preparation and uses of sodium nitrite.
- (b) Explain the principle involved in the assay of chlorinated lime. ($2 \times 2\frac{1}{2} = 5$)
7. Explain the method of preparation and assay of oxygen. (5)
8. Write a short note on the electrolytes used for replacement therapy. (5)
9. List out the official compounds of iron and give the method of preparation of any two. (5)

10. Give reasons for the following : ($4 \times 1\frac{1}{4} = 5$)

- (a) Lead acetate cotton wool is kept in the arsenic apparatus.
- (b) Stagnated hydrochloric acid is used in the arsenic limit test.
- (c) Potassium iodide is added in the assay of iodine solution.
- (d) Citric acid is added in the limit test for iron.
-

February-2008

[KS 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Q.P.Code : 564161

Time : Three hours

Maximum : 90 marks

Theory : Two hours and
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long essay :

(2 × 15 = 30)

Answer any TWO questions.

1. (a) Explain the salient features of modern periodic table (long form) and its superiority over Mandeleev's table. (10)

(b) Describe in detail the limit test for Arsenic with reactions. (5)

2. (a) Why limit test are carried out? Discuss the sources of impurities in pharmaceutical substances. (2 + 8)

(b) Explain the principle and procedure involved in the limit test for chlorides. (5)

3. (a) What are precipitation titrations? How will you estimate chloride by Mohr's method? (5)

(b) Write a note on Redox indicators. (5)

(c) Give the preparation and assay of oxygen gas. (5)

4. (a) Define and classify antacid with example. Give the preparation and assay of Aluminium hydroxide gel. (10)

(b) Write a note on Radio opaque contrast media. (5)

II. Write short notes on : (8 × 5 = 40)

Answer any EIGHT questions.

1. Write the name of indicators and its colour change at the end point, in the assay of following compounds.

(a) Iodine.

(b) Sodium chloride.

(c) Hydrogen peroxide.

(d) Zinc sulfate.

(e) Sodium carbonate.

2. Define the terms
 - (a) Assay
 - (b) Test for purify
 - (c) Molarity
 - (d) Normality
 - (e) Pharmacopoea.
3. Write the method of preparations and uses of the following compounds
 - (a) Karl Fischer's reagent.
 - (b) Benedicts reagent.
4. Write the Molecular formula and uses of the following
 - (a) Thionyl chloride.
 - (b) Lithium Aluminium hydride.
 - (c) Sodium thiosulfate.
 - (d) Titanous chloride.
 - (e) Boron trifluoride.
5. Give the preparation assay and uses of the following
 - (a) Copper sulphate
 - (b) Sodium Citrate

6. Write the principle involved in the limit test of lead as per I.P. with suitable reaction
7. (a) How do you prepare one litre of 0.1 N oxalic acid solution?
(b) How do you standardise 0.1 N sodium thiosulfate solution?
8. Write on the test for
 - (a) Sulfate and sulfite in $\text{Na}_2\text{S}_2\text{O}_3$
 - (b) Lead in Zinc chloride.
9. Carry the test for purity of the following compounds.
 - (a) Oxidizing substance in oxygen.
 - (b) Sucrose and reducing sugars in calcium gluconate.
10. Write the chemical formula and complete the following reaction
 - (a) Potassium permanganate + Iodine $\Rightarrow$
 - (b) Sodium hydroxide + Hydrochloric acid $\rightarrow$
 - (c) Sodium thiosulfate + Iodine $\rightarrow$
 - (d) Sodium bicarbonate + sulfuric acid $\rightarrow$
 - (e) Calcium Hydroxide + Hydrochloric acid $\rightarrow$

February-2008

[KS 735]

Sub. Code : 4226

(Candidates admitted from 2004-05 onwards)

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

**Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY**

Q.P. Code : 564226

Time : Three hours

Maximum : 90 marks

**Descriptive : Two hours and
forty minutes**

Theory : 70 marks

Objective : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 15 = 30)

Answer any TWO questions.

1. (a) Describe the sources of impurities in pharmaceutical substances. Explain the principle involved in the limit test for iron with equation. (8)

(b) Explain an Indian pharmacopoeia and monograph with an example. (7)

2. (a) Describe the principle and procedure involved in the assay of Carbondioxide. (7)

(b) Write the preparation and specific uses of diazomethane, N - bromo succinimide, Lithium aluminium hydride and thioxyl chloride. (8)

3. (a) What are topical agents? Classify them with examples. Write the principle involved in the assay of boric acid and chlorinated lime. (9)

(b) Write the Pharmaceutical Applications of pencillamine, EDTA and dimercaprol. (6)

II. Short notes on : (8 × 5 = 40)

Answer any EIGHT questions.

1. Write a note on the measurement of radioactivity. (5)

2. What are gastrointestinal agents? Classify with examples. What are the qualities of an ideal antacid? (5)

3. Write a short note on physiological acid base balance and its importance. (5)

4. Write the method of preparation of iron dextran injection and strong iodine solution. (5)

5. What are the uses of the following inorganic compounds : (5 × 1 = 5)

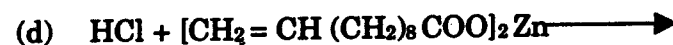
- (a) Sodiumthiosulphate
- (b) Potassium iodide
- (c) Ammonium carbonate
- (d) Calamine
- (e) Potassium bromide.

6. Explain the modified procedure for the limit test for sulphates in potassium permanganate. (5)

7. Explain on electrolyte combination therapy with examples. (5)

8. Write a note on dental products and explain the role of flourides as anticaries agents. (5)

9. Complete and balance the following equations : (5 × 1 = 5)



10. Give reasons for the following : (5 × 1 = 5)

(a) Use of formaldehyde in the assay of ammonium chloride.

(b) Use of borosilicate glass containers in the limit test for lead.

(c) Use of lead acetate cotton wool in the limit test for arsenic.

(d) Maintainance of pH in the assay of magnesium sulphate.

(e) Use of alcohol in the limit test of chlorides for potassium permanganate.

August 2008

[KT 701]

Sub. Code : 4161

FIRST B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Q.P. Code : 564161

Time : Three hours

Maximum : 90 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Describe the Periodic Trends in properties and What are the defects in Mendeleeff's Periodic table. (6 + 6)

(b) Explain the modified procedure for limit test of Sulphates in Potassium Permanganate. (8)

2. (a) What are the impurities commonly found in medicinal preparations? Explain the methods used to purify the inorganic substances. (10)

(b) Discuss the various steps in Gravimetric analysis and also give its applications. (10)

3. (a) Describe any two methods of detection of end point in precipitation titrations. (8)

(b) Write about the modified procedure for the Limit test of Chloride and Sulphate in Sodium bicarbonate. (6)

(c) How will you perform test for purity of Iodides and Bromides in Sodium Chloride? (6)

II. Short notes : (8 × 5 = 40)

Answer any EIGHT of the following.

1. Write a brief note on Hydrogen bonding and give any three properties of Hydrogen bond compounds.

2. What is artificial radioactivity? Give any two examples of artificial radionuclides used in medicine.

3. What are the uses of the following reagents in pharmaceutical analysis? (5 × 1 = 5)

(a) Karl Fischer's reagent

(b) Nessler's reagent

(c) Mayer's reagent

(d) Benedict's reagent

(e) Titanous chloride.

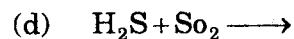
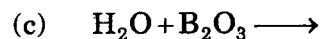
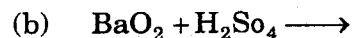
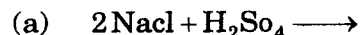
4. Write the method of preparation and uses of the following compounds

(a) Periodic acid

(b) Thionyl chloride.

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5. Complete and balance the following equations :
(5 × 1 = 5)



6. What are neutralisation titrations? Explain briefly about acid – base titrations in non-aqueous solvents.
7. Write any five Limitations of gravimetric methods of assay.
8. Discuss briefly about the methods used to purify the inorganic substances.
9. Give the preparation assay and use of the following :
- (a) Oxygen
- (b) Calcium gluconate.
10. Write a brief note on Redox indicators.

- III. Short Answers : (5 × 2 = 10)

Answer any FIVE questions.

1. Write the uses of the following :
- (a) Ferric citrate (59_{Fe}).
- (b) Sodium phosphate (32_P).
2. Complete and balance the following :
- (a) $\text{CaO} + \text{H}_2\text{O} \rightleftharpoons$
- (b) $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightleftharpoons$.
3. List the official compounds of magnesium and give its uses.
4. Write the preparation and use of aluminium sulfate.
5. Define molarity and write the preparation of 1 Litre of 1M Sodium Hydroxide Solution.
6. What is E.D.T.A.? Give its use in Pharmaceutical analysis.
7. List the methods of separation of Radioisotopes.

August 2008

[KT 735]

Sub. Code : 4226

(Candidates admitted from 2004-05 onwards)

FIRST B.Pharm. DEGREE EXAMINATION.

(Modified Regulations)

Paper I — PHARMACEUTICAL INORGANIC
CHEMISTRY

Q.P. Code : 564226

Time : Three hours

Maximum : 90 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. (a) Explain the principle and procedure involved in the limit test for Arsenic. Give a neat labeled diagram of the apparatus used for limit test for arsenic.

(b) Explain about molecular formula and valency of elements. (12 + 8)

2. (a) What are gastro intestinal agents? Classify with examples. What are the side effects and advantages of antacids?

(b) Write the clinical applications and doses of Radio pharmaceuticals. (12 + 8)

3. (a) Describe the preparation and properties of Helium.

(b) Write note on periodic acid and Thionyl chloride. (8 + 12)

II. Short notes : (8 × 5 = 40)

Answer any EIGHT questions.

1. Describe the sources of impurities in pharmaceutical substances.

2. Write the pharmaceutical applications of 1, 10 - phenanthroline and Dimercaprol.

3. Write the method of preparation of zinc oxide and zinc stearate.

4. Give the preparation and specific uses of N-BromoSuccinimide and ozone.

5. Write note on respiratory stimulant and explain about Ammonium carbonate.

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6. What are the uses of the following inorganic compounds?

- (a) Aluminium hydroxide gel.
- (b) Calamine.
- (c) Strontium chloride.
- (d) Iron Dextran Injection.
- (e) Charcoal.

7. Explain the modified procedure for the limit test for sulphates in sodium bicarbonate.

8. Write note on Electrolyte combination therapy.

9. Complete and balance the following equations :

- (a) $2(\text{NH}_4)_2\text{SO}_4 + 2\text{CaCO}_3 \rightarrow$
- (b) $\text{BaO}_2 + \text{H}_2\text{SO}_4 \rightarrow$
- (c) $\text{Ca}(\text{OH})_2 + \text{CO}_2 \rightarrow$
- (d) $\text{HOH}_2\text{C}-(\text{CHOH})_4-\text{COOH} + \text{CaCO}_3 \rightarrow$
- (e) $\text{SrO} + 2\text{HCl} \rightarrow$

10. Write notes on physiological Acid-Base Balance.

III. Short Answers :

(5 × 2 = 10)

Write any FIVE questions.

- 1. Classify topical agents and give examples.
- 2. Define expectorants and give examples.
- 3. Give the assay of sodium bi carbonate.
- 4. Give the identification test for sulphates.
- 5. Give the uses of the following inorganic compounds.
 - (a) Cobalt - 58
 - (b) Lithium aluminium hydride.
- 6. What is the use of thioglycolic acid in the limit test for Iron?
- 7. Give the reason for mercuric chloride paper present in the limit test for Arsenic.

February 2009

[KU 701]

Sub. Code: 4161

FIRST B.PHARM. DEGREE EXAMINATION
(ReRevised Regulations) Candidates admitted upto 2003-04
Paper I – PHARMACEUTICAL INORGANIC CHEMISTRY
Q.P. Code : 564161

Time : Three hours

Maximum : 90 marks

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. (a) Define Radioactivity. Write their types, detection and measurement of radio activity.
(b) Describe in detail the limit test for arsenic with reaction.
(c) Write the preparation and uses of silicagel.
2. (a) Give the preparation, assay and uses of halogen and nitrogen.
(b) Write the test for purity of oxidising substance, Co_2 and Co in oxygen.
3. (a) Write short notes on theory of indicator assay of neutralization method.
(b) Write short notes on
i) Magnesium trisilicate. ii) Dried Aluminium hydroxide gel.

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Define the terms : a) Test for purity. b) Quantitative analysis.
c) Assay d) Molality e) Normality
2. Give the preparation, assay and uses of the following:
a) Phosphorous. b) Calcium.
3. Write molecular formula and uses of the following:
a) Ferric sulphate. b) Sodium thio sulphate c) Sodium edentate.
d) Alumina. e) Hydrogen peroxide.
4. Write the principle involved in the limit test for lead as per I.P with suitable reaction.
5. Write the method of preparation and uses of the following compounds.
a) Mayor's reagent. b) Nessler's reagent.
6. Write the test for purity of a) Iron in sodium metabisulphite.
b) Acid absorption by magnesium trisilicate.
7. Write the chemical formula and complete the reaction.
a) Sodium chloride + silver nitrate $\rightarrow$
b) Silver thiosulphate + hydrochloric acid $\rightarrow$
c) Disodium hydrogen phosphate + calcium chloride $\rightarrow$
d) Barium chloride + Dill. Sulphuric acid $\rightarrow$
e) Magnesium oxide + Water $\rightarrow$
8. Write on the test for : a) Coarse particle in light kaolin.
b) Ferric ion and reducing sugar in ferrous gluconate.
9. How to confirm the following inorganic substance.
a) Magnesium. b) Barium. c) Ammonium. d) Nitrate. e) Bromate.
10. Write the short notes on co-ordination compounds.

III. Short Answers: Answer any FIVE questions

(5 x 2 = 10)

1. Define covalent bond.
2. Write the preparation of sublimed sulphur.
3. Write the physical and chemical property of chlorinated lime.
4. Write the test for purity of alkalinity.
5. What is the identification test for sodium hydroxide?
6. What is the chemical formula of Benedict's reagent?
7. Write the medicinal uses of following.
 - a) Calcium lactate.
 - b) Soda lime.
 - c) Iodine.
 - d) Potassium Permanganate

August 2009

[KV 701]

Sub. Code: 4161

FIRST B.PHARM. DEGREE EXAMINATION

(Revised Regulations)

Candidates Admitted upto 2003-04

Paper I – PHARMACEUTICAL INORGANIC CHEMISTRY

Q.P. Code : 564161

Time : Three hours

Maximum : 90 marks

I. Essay Questions : Answer any TWO questions (2 x 20 = 40)

1. a) Describes the Mendeleeff's periodic table and mention the defects in Mendeleeff's periodic table.
b) Discuss the principle and reaction of the limit test for arsenic.
2. a) Explain the various sources of impurities in pharmaceutical substances with examples.
b) Give the test for purity of
 - i) Iodides and bromides in sodium chloride.
 - ii) Co and CO₂ in oxygen.
3. a) Enumerate the official compounds of mercury and give the methods of preparation and assay of any two official compounds of mercury.
b) Write Note on :
 - i) Tartar emetic.
 - ii) Aurous chloride.

II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)

1. Discuss the Radio Pharmaceuticals of
 - i) Sodium Iodide¹³¹ I.
 - ii) Sodium phosphate 32p.
2. Give the methods of preparation and assay of borax.
3. Write the method of preparation and medicinal uses of selenium sulphide and precipitated sulphur.
4. Write Note on : Calamine.
5. Discuss the method of preparation of any one in-organic sedatives.
6. Give the principle of gravimetric methods of assay.
7. What happen when : Give the balanced chemical equation.
 - i) Barium peroxide reacts with sulphuric acid.
 - ii) Copper sulphate treated with potassium iodide in the presence of acetic acid.
8. Describe briefly about the theory of co-ordination of compound.
9. Give the method of preparation and uses of lithium aluminium hydride and periodic acid.
10. Write the properties method of preparation and assay of any one in organic iron deficiency anaemia.

III. Short Answers: Answer any FIVE questions (5 x 2 = 10)

1. Give the principle for the limit test for chloride.
2. Define radio activity and radio isotope.
3. Give the reason for the uses of citric acid and ammonia in the limit test for Iron.
4. Write the test for purity of oxidizing substances in oxygen.
5. Give the method of preparation and uses of Nessler's reagent.
6. Give the importance of polyhydric alcohol in the assay of boric acid.
7. Write the method of preparation and uses of ammonium chloride.
