D3201216

GOVERNMENT OF KARNATAKA
BOARD OF EXAMINING AUTHORITY
D. Pharm. Part – I Examinations (ER-91), December 2016
PHARMACEUTICAL CHEMISTRY I

Time : 3 Hrs Max. Marks: 80

Note: Answer any **TEN** questions from **Section – A** and **THREE** from **Section – B** including Question No. 14, which is compulsory

SECTION-A 4 X 10 =40

1) Define the terms 'inhalant' and 'expectorant' with two examples each along with formula.
2) Write anytwo identification tests each for potassium and carbonate ions.
3) Define antacid. Mention two examples. Add a note on combination therapy.
4) Write the chemical name, formula and use of the following
   a) Green vitriol b) Blue vitriol c) Chlorinated lime d) Tartar emetic
5) Define with a suitable example, 'acid' and 'base' according to Arrhenius and Lewis theories.
6) Draw a neat labelled diagram of Geiger-Muller Counter. Mention its use.
7) Write a note on saline cathartics.
8) Explain the method of preparation of ammoniated mercury. Mention its use.
9) Write the formula and category of the following:
   a) Titanium dioxide b) Sodium nitrite c) sodium bisulphited) Potassium citrate.
10) Write the principle and procedure involved in the assay of potassium permanganate.
11) Define the terms 'limit test' 'normality' 'assay' and 'test for purity'
12) Discuss the physical, chemical properties and uses of calamine.
13) Enumerate the official compounds of calcium with their chemical formula and uses.

SECTION-B

14) a) Discuss 'raw material' and 'storage conditions' as sources of impurities in pharmaceutical substances. What are the effects of impurities when present in pharmaceuticals?
   a) Enumerate the official preparations of Iodine and add a note on Lugol'ssolution. 8+6

OR

Explain the procedure, principle and reaction involved in the limit for sulphateI.P. and the limit for iron I.P elaborating the role of the reagents used. 6+8

15) a) Write in detail about the dental products with suitable examples. Discuss the importance of fluoride in dental products.
   b) Principle and reaction involved in the assay of magnesium sulphate I.P. 8+5
16) Write a note on a) Radio opaque contrast media b) Oral rehydration salt
   c) Quality control. 4+5+4
17) a) Write in detail about protectives.
   b) Procedure, principle and reaction involved in the assay of ammonium chlorideI.P.
   c) Explain physiological acid-base balance.
   4+5+4

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D3200517

GOVERNMENT OF KARNATAKA

BOARD OF EXAMINING AUTHORITY

D.PHARM, PART-I EXAMINATIONS (ER-91) MAY-2017

Time:3Hrs Max Marks:80

PHARMACEUTICAL CHEMISTRY-I

Note: Answer any **TEN** questions from **Section - A** and **THREE** from **Section - B** including Question No. 14, which is compulsory

SECTION-A **4x10 =40**

1. Give the uses for the following
   a) Stannous chloride b) Ferrous sulphate c) Calamine d) Sodium bicarbonate
2. Write the preparation with reaction for the following
   a) Ammoniated mercury b) Hydrogen peroxide
3. Write the principle and reaction involved in the limit test for sulphate.
4. Give any two identification test for
   a) Potassium b) Carbonate
5. Enlist the official compounds of iron with their uses.
6. What are radiopharmaceuticals? Mention the pharmaceutical applications of any two radioisotopes.
7. How the acid-base balance of the body is maintained.
8. Define the following with suitable examples.
   a) Antioxidant b) Astringent
9. Write the synonyms and uses of
   a)Sodium potassium tartrate b) Sodium carbonate
   c) Aqueous iodine solution d) Copper sulphate.
10. Complete the following reactions
    a) Lead acetate + hydrogen sulphide →
    b) Iron + thioglycollic acid→
11. What are antidotes? Give the preparation of sodium nitrite
12. Write the principle and reaction involved in the assay of boric acid.
13. Give the storage condition and labelling of oxygen and nitrous oxide.

SECTION-B

14. What are the sources of impurities in pharmaceuticals? Write the principle and procedure involved in the limit test for arsenic. 6+8

    OR

    Define and classify antacids with examples. Write the method of preparation and assay of sodium bicarbonate. 2+4+4+4
15. a). Write a note on i) major intracellular and extracellular electrolytes
    ii) Barium sulphate meal 4+3
    b).Write the preparation and uses of chlorinated lime and calamine 3+3
16. a) Classify dental products with suitable examples
    b). what are respiratory stimulants? Give the preparation of ammonium carbonate.
    c). Give the preparations of iodine and its importance. 5+4+4
17. Write the preparation and uses of the following
    i) Calcium hydroxide ii) Potassium permanganate
    iii) Ammonium chloride iv) Calcium gluconate. 3+4+2+4

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D3201215

GOVERNMENT OF KARNATAKA
BOARD OF EXAMINING AUTHORITY
D. Pharm. Part – I Examinations (ER-91), December 2015
PHARMACEUTICAL CHEMISTRY I

Time : 3 Hrs Max. Marks: 80

Note: Answer any **TEN** questions from **Section – A** and **THREE** from **Section – B** including Question No. 14, which is compulsory

SECTION – A

4 X 10 = 40

1) Describe the principle and reaction involved in the assay of hydrogen peroxide.
2) Give the synonym and uses of the following.
   a) Sodium bicarbonate b) Ferrous sulphate c) Potassium hydroxide d) Calcium oxide.
3) Define the following a) Antacid b) Emetic c) Antiseptic d) Purgative.
4) Give any two identification tests for a) Ammonium. b) Sulphate radicals.
5) What are anticaries agents? Give suitable examples.
6) Give reasons:
   a) Lead acetate cotton plug is used in arsenic limit test.
   b) Dilute nitric acid is used in the limit test for chloride.
7) What are antioxidants? Classify them with suitable examples.
8) What are buffers? Give the pharmaceutical importance of buffers.
9) Give the uses for the following: a) Calcium gluconate b) Milk of Magnesia c) Alum d) Zinc oxide.
10) What are protectives and adsorbants? Give suitable examples.
11) Give the storage conditions and labeling of carbon dioxide and oxygen
12) What is electrolyte replacement therapy? Explain.
13) Explain the preparation and assay of chlorinated lime.

SECTION – B

14) Write the principle, reactions and procedure involved in the limit test for chloride and Iron (14)

OR

Write the principle, reaction and procedure involved in the limit test for Lead (14)

15) a) Define and classify gastrointestinal agents with suitable examples. Give the preparation of any one of them.
   b) Write a note on radio opaque contrast media. (5+8=13)
16) Write the principle andreactions involved in the assay of
   a) Ammonium chloride b)Ferrous sulphate c)Boric acid. (4+4+5=13)
17) a) What are astringents? Give the method of preparation, assay and storage condition of any two of them.
   b) Write a note on combination of oral electrolyte powder. (8+5=13)

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D3200416

GOVERNMENT OF KARNATAKA
BOARD OF EXAMINING AUTHORITY
D.PHARM, PART-I EXAMINATIONS (ER-91) APRIL-2016

Time:3Hrs Max Marks:80

PHARMACEUTICAL CHEMISTRY-I

Note: Answer any **TEN** questions from **Section – A** and **THREE** from **Section – B** including Question No. 14, which is compulsory

SECTION-A 4x10 =40

1. Write any two identification test for ferrous and sulphate ions
2. Give the reasons of the following a) Citric acid is used in the iron limit test
   b) Glycerol is used in the boric acid assay
3. Write the principle involved in the assay of potassium permanganate.
4. Write preparation and uses of milk of magnesia.
5. Write the preparation of ammoniated mercury.
6. Write the formula and category of the following a) Bleaching powder b) Borax
   c) Sodium thiosulphate d) Sodium citrate
7. Define and classify antidote with suitable examples.
8. Give an example with their molecular formula
   a) Emetics b) Disinfectant c) Acidifying agent d) Anticaries.
9. Write note on role of fluoride in dental products
10. Define the terms a) Bactericide b) Protectives c) Pharmaceutical aid d) Astringent
11. Write the principle and procedure involved in sulphate limit test.
12. Define the following terms a) Normality b) Monograph c) Equivalent weight
    d) Buffers
13. Complete and balance the reaction with chemical formula
    a) Sodium thiosulphate + Iodine-→
    b) Lead acetate + Hydrogen sulphide-→

SECTION-B

14. Write the principle involved in the limit test for Arsenic with suitable reaction. Give the procedure with neat labelled diagram of apparatus used. 4+6+4

OR

a) Define and classify intracellular and extracellular electrolytes with examples.
b) Write their importance. Add a note on ORS 8+6

15. Write the principle involved in the assay of a) Aluminium hydroxide gel
    b) Zinc oxide c) Magnesium sulphate. 5+4+4
16. Write a note on Radio Pharmaceuticals with their biological effects. Add a note on measurement of radio activity 9+4.
17. a) Define and classify antacids with examples.
    b) Explain the principle and procedure involved in the assay of
    i) sodium bicarbonate ii) Hydrogen peroxide 4+4+5

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D3201217

GOVERNMENT OF KARNATAKA

(BOARD OF EXAMINING AUTHORITY)

D. Pharm. Part – I Examinations (ER-91), December-2017

PHARMACEUTICAL CHEMISTRY - I

Time: 3Hours **Max. Marks: 80**

Note: Answer any TEN questions from Section – A and THREE from Section – B including Question No. 14, which is compulsory

SECTION – A

4 x 10 = 40

1. Define the following a) Assay b) Astringent c) Expectorant d) Impurity.
2. Write the principle and reactions of boric acid assay.
3. What are antioxidants? Give examples. Give their mechanism of action.
4. Define and classify GIT agents with examples.
5. Write the preparation and uses of Calcium gluconate.
6. Give reasons: a) Nitric acid is used in chloride limit test
   b) Formaldehyde is used in the assay of ammonium chloride.
7. Write the official compounds of iron with their uses.
8. Write a short note on antidotes.
9. Write a note on major intra and extracellular electrolytes.
10. Give the preparation and uses of antimony potassium tartarate.
11. Explain the principle and reactions of heavy metal limit test.
12. Give the storage conditions and labelling of carbon dioxide and nitrous oxide.
13. Write the construction and working of GM counter.

SECTION –B

14. Explain the principle involved in arsenic limit test I.P. Explain its procedure with a neat labelled diagram. 6+4+4

OR

a) Define and classify topical agents.
b) Write the preparation, assay and uses of hydrogen peroxide,
c) Write a note on acidifying agents. 3+8+3

15. a) Give the official compounds of iodine with their composition and uses.
    b) Define buffer. Give examples. Enumerate their role in pharmacy. 7+6
16. Discuss a) Physiological acid base balance b) Applications of radiopharmaceuticals, c) Barium meal 5+5+3
17. a) Explain the principle and reactions of iron limit test I.P.
    b) Write the principle and reactions involved in copper sulphate assay.
    c) Add a note on dental products. 5+4+4

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D3200119

GOVERNMENT OF KARNATAKA
(BOARD OF EXAMINING AUTHORITY)
D Pharm. Part- I Examinations (ER-91), January 2019
PHARMACEUTICAL CHEMISTRY –I

Time: 3 Hours Max Marks: 80

Note: Answer any **TEN** questions from **Section A** and **THREE** questions from **Section B**, including Question No 14, which is compulsory.

SECTION – A **4 x 10=40**

1. Define the terms: a) Antidote b) Astringent c) Impurity d) Limit test.
2. Explain mechanism of antioxidants. Give the properties of antioxidants.
3. Give reasons for the following:
   a) Dilute nitric acid is used in chloride limit test.
   b) Formaldehyde is used in assay of ammonium chloride I.P.
4. Mention any four official compounds of iron with their formula and use.
5. Give storage and labeling conditions of oxygen and carbon dioxide.
6. Write a note on major intracellular and extracellular electrolytes.
7. Explain acid base theories with examples.
8. What are antacids? Classify with examples.
9. Give the identification tests for a) Chloride b) Sodium
10. Write the formula, synonym and uses of a) Copper sulphate b) Antimony potassium tartarate.
11. What are antimicrobials? Write the formula, synonym and uses of chlorinated lime.
12. Write the formula and category of a) Zinc sulphate b) Sodium potassium tartarate
    c) Sodium thiosulphate d) Magnesium sulphate.
13. Write a note on dental products.

SECTION – B

14. A) Explain the principle and reaction involved in the Arsenic limit test I.P.
    B) Discuss the construction and working of Gutzeit apparatus with a neat labeled diagram. (6+8)

    OR

    Explain the principle and reactions involved in the assay of a) Boric acid b) Sodium bicarbonate c) Copper sulphate d) Sodium chloride. (3.5 x 4)
15. A) Give the official compounds of iodine with their composition and uses.
    B) Define buffer with examples. Discuss buffer action with examples. (7+6)
16. A) Write a note various sources of impurities in pharmaceutical substances.
    B) Explain the principle, reactions and procedure involved in the iron limit test I.P. (6+7)
17. A) Explain the types of radiations emitted by radioactive substances mentioning their characteristics.
    B) Write the chemical formula and uses of (i) Dil Hydrochloric acid (ii) Ammoniated mercury.
    C) Write a note on the biological effects of radiation. (5+4+4)

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D3200120

GOVERNMENT OF KARNATAKA

(BOARD OF EXAMINING AUTHORITY)

D. Pharm. Part – I Examinations (ER-91), January-2020

PHARMACEUTICAL CHEMISTRY - I

Time: 3Hours **Max. Marks: 80**

Note: Answer any **TEN** questions from **Section – A** and **THREE** from **Section – B** including **Question No. 14**, which is compulsory

SECTION – A

4 x 10 = 40

1. Define the following with one example each.
   a) Antioxidant b) Astringent c) Antidote d) Protective.
2. Write the chemical formula and uses of:
   a) Ammonium carbonate b) Epsom salt c) Precipitated chalk d) Sodium bisulphite
3. Give the use and storage conditions for the following.
   a) Potassium permanganate b) Tincture of iodine c) Hydrogen peroxide d) Milk of magnesia.
4. Complete and balance the following reactions
   a) $Na_2S_2O_3 + I_2 \rightarrow$
   b) $KMnO_4 + H_2SO_4 + H_2O_2 \rightarrow$
5. List out four official compounds of iron, indicate their formula and use.
6. Give the exact reasons for the following:
   a) Glycerine is used in assay of boric acid I.P.
   b) Nitrobenzene is used in assay of sodium chloride I.P.
7. Give the identification tests for sodium and magnesium ions.
8. Write a note on oral rehydration salts.
9. What are anticaries agents? Explain the role of fluoride in dentistry.
10. Explain Lewis acid and Lewis base with suitable examples.
11. What are inhalants? Write the storage condition, labelling and use of one inhalant.
12. Explain the importance of quality control in pharmaceuticals.
13. With suitable reaction, explain the principle of chloride limit test I.P.

SECTION – B

14. A. With suitable equations and a neat labelled diagram of the apparatus, explain principle of arsenic limit test I.P. **(14)**

OR

B. a) What are gastrointestinal agents? Classify. Define each class with a suitable example.
   b) Explain the principle involved in the assay of sodium bicarbonate I.P. **(9+5)**

15. Explain the principle and reaction involved in the assay of a) Calcium gluconate b) Ammonium chloride c) Copper sulphate. **(4+4+5)**
16. a) What are the precautions to be taken when handling radioisotopes?
    b) Explain GM counter with a neat labelled diagram.
    c) Write a note on radiopaque substances. **(4+4+5)**
17. a) With suitable reaction, explain the principle of sulphate limit test I.P.
    b) What are buffers? Give examples of two pharmaceutical buffers and their use.
    c) With suitable reaction, explain the principle of heavy metal limit test I.P. **(4+4+5)**

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D3200518

GOVERNMENT OF KARNATAKA

(BOARD OF EXAMINING AUTHORITY)

D. Pharm. Part – I Examinations (ER-91), May-2018

PHARMACEUTICAL CHEMISTRY - I

Time: 3Hours **Max. Marks: 80**

Note: Answer any **TEN** questions from **Section – A** and THREE from **Section – B** including Question No. 14, which is compulsory.

SECTION – A

4 X 10 = 40

1) Write the principle involved in the assay of Hydrogen peroxide with a suitable reaction
2) Give the synonym and uses of the following
   a) Ferrous sulphate b) Sodium bicarbonate c) Copper sulphate d) Sodium borate.
3) Write the identification tests for calcium and carbonates
4) Discuss the principle of chloride limit test.
5) Write a note on protectives
6) Discuss the physiological acid base balance
7) Explain with suitable examples, the terms 'Dentrifice' & 'Anticaries agents'
8) Give the stability and storage conditions for Ferrous sulphate and Iodine.
9) Give reasons for the following
   a) Use of dried lead acetate cotton plug in arsenic limit test
   b) Hydrochloric acid in sulphate limit test.
10) With suitable examples, define the terms 'Emetics' and 'Astringents'
11) Write the formula and category for Bismuth subcarbonate and Sodium potassium tartarate.
12) Write a note on antidotes
13) Define the terms a)Assay b)Test for purity c) Buffer d) Normality

SECTION – B

14) a) List out the saline cathartics and explain their mechanism of action.
    b) With a neat labeled diagram and suitable equations, explain the limit test for arsenic.

OR 4+10

    a) Write the principle involved in lead limit test I.P.
    b) Explain the different sources of impurities in pharmaceuticals 7 + 7

15) a) What are antacids? List out the inorganic compounds used as antacids. Explain preparation of any one with suitable equation.
    b) Explain handling and storage of radioactive materials. 7 + 6
16) With suitable reactions, explain the principle of assay of
    a) Chlorinated lime b) Ammonium chloride c) Potassium permanganate. 4+4+5
17) With suitable examples, write a note on the following
    a) Astringents b) Antioxidants c) Acidifying agents d) Respiratory stimulants 3+3+3+4

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