

# Question Paper

Exam Date & Time: 02-Jan-2024 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Inorganic Chemistry [PCH-BP104T - S2]

Marks: 75

Duration: 180 mins.

### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Calcium helps in (1)
- [Normal kidney function](#)
  - [Normal tissue function](#)
  - [Coagulation of blood](#)
  - [Normal blood osmotic pressure](#)
- 2) In the assay of Sodium chloride IP, the titrant is (1)
- [Silver nitrate](#)
  - [Ammonium thiocyanate](#)
  - [Silver nitrite](#)
  - [Ferric ammonium sulphate](#)
- 3) Following is not official in IP (1)
- [Sodium chloride injection](#)
  - [Sodium chloride hypertonic solution](#)
  - [Sodium chloride hypotonic solution](#)
  - [Ringer Solution](#)
- 4) Chemical oxidation of Glucose with hypochlorite solution gives (1)
- [Chloroglucose](#)
  - [Gluconic acid](#)
  - [Glucaric acid](#)
  - [Calcium gluconate](#)
- 5) Concentration of Fluoride required to prevent dental caries is (1)
- [2-5 ppm](#)
  - [Less than 1 ppm](#)
  - [10 pp](#)
  - [6-8 pp](#)
- 6) Dehydration of Zinc sulphate heptahydrate gives (1)
- [Zinc oxide and water](#)
  - [Zinc oxide and sulphuric acid](#)

- [Zinc oxide and Sulphur dioxide](#)  
[Only Zinc oxide](#)
- 7) Pyrite ore on oxidation gives (1)
- [Ferrous sulphate](#)  
[Zinc sulphate](#)  
[Copper sulphate](#)  
[Aluminium sulphate](#)
- 8) C-14 on Beta decay gives out (1)
- [C-12](#)  
[N-13](#)  
[N-14](#)  
[He-2](#)
- 9) What is the half-life of I-131? (1)
- [8 hours](#)  
[8 days](#)  
[8 months](#)  
[8 years](#)
- 10) What form of radioactive decay results in reduction of atomic number by 2 units? (1)
- [Alpha decay](#)  
[Beta decay](#)  
[Gama decay](#)  
[Nuclear fusion](#)
- 11) International Pharmacopoeia is published by (1)
- [United States Pharmacopeial Convention](#)  
[European Pharmacopoeial Commission](#)  
[Indian Pharmacopoeial Commission](#)  
[World health organization](#)
- 12) \_\_\_\_\_ is the major source of impurities in process of inorganic pharmaceuticals (1)
- [Acetic acid](#)  
[Water](#)  
[Benzene](#)  
[Hydrochloric acid](#)
- 13) The colour of the solution of diphenyl thiocarbazon-lead complex in chloroform is (1)
- [Yellow](#)  
[Green](#)  
[-](#)  
[Violet](#)  
[Blue](#)
- 14) Lead acetate cotton in the tube traps (1)
- [Sulphuric acid fumes](#)  
[Arsine gas](#)  
[Arsenous gas](#)  
[Hydrogen sulphide](#)

- [gas](#)
- 15) Bromide impurity produces following colour opalescence in limit test for chlorides (1)
- [Red colour x](#)  
[Pale red colour](#)  
[Intense yellow colour](#)  
[Pale yellow colour](#)
- 16) Goiter can be treated using (1)
- [Iodine](#)  
[Sodium chloride](#)  
[Milk of magnesia](#)  
[None of these](#)
- 17) The Mandals paint is (1)
- [1.25% w/v of iodine in glycerine.](#)  
[1.25% w/v of iodine in water.](#)  
[2.5%w/v each of iodine and KI in alcohol.](#)  
[2.5%w/v each of iodine and KI in water](#)
- 18) Titration of Iodine against thiosulfate is a standard laboratory technique. In connection to the given statement identify the correct one. (1)
- [Solutions of I<sub>2</sub> are prepared in aqueous KI because Iodine is insoluble in water](#)  
[Iodine is oxidized during the titration](#)  
[\[S<sub>2</sub>O<sub>3</sub>\]<sup>2-</sup> is reduced during the titration](#)  
[No indicator is usually used in this titration](#)
- 19) Roman vitriol is assayed by (1)
- [Iodimetry](#)  
[Iodometry](#)  
[Cerimetry](#)  
[Iodate titration](#)
- 20) Milk of magnesia confers its antacid action by (1)
- [Magnesium ion](#)  
[Hydroxide ion](#)  
[Neutral](#)  
[Whole molecule](#)

## II Long Answers

**Answer all the questions.**

- 21) Give Henderson-Hasselbalch equation for acidic and basic buffers and write the coordinates. Explain the different methods to adjust the tonicity of a solution. (4+6) (10)
- 22) What are antacids? Classify them with suitable examples. Explain its ideal properties. Name the various iodine preparations and give their compositions and uses. (10)

## III Short Answers

**Answer all the questions.**

- 23) Explain the preparation, assay and uses of Ferrous sulphate Heptahydrate. (5)

- 24) Explain Scintillation counter as a device to measure radioactivity. (5)
- 25) Enlist the properties of Beta rays. Name any two radiopharmaceutical with their uses. (5)
- 26) Discuss the different methods to obtain activated charcoal. (5)
- 27) Explain with the chemical equation the principle, procedure and role of reagents used in the limit test for Iron. (5)
- 28) List down the various sources of impurities in pharmaceutical preparations. Explain anyone. (5)
- 29) What is mucolytic? Write the assay principle and uses of potassium iodide. (5)

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