

Exam Date & Time: 13-Dec-2022 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Inorganic Chemistry [PCH-BP104T - S3]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) In 1820, a group of physicians concerned for the quality and consistency of medicines published the

1) United States of Pharmacopoeia	2) European Pharmacopoeia	3) British Pharmacopoeia	4) International Pharmacopoeia	(1)
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- 2) Impurities in pharmaceutical preparation may be due to following sources:

1) Raw material	2) Manufacturing process	3) Chemical instability	4) All of the above	(1)
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- 3) Lead impurities are detected in limit test by reaction with

1) Thioglycolic acid	2) Hydrogen Sulphide	3) Barium Chloride	4) Diphenylthiocarbazone	(1)
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- 4) In limit test of sulphate, alcohol does not allow the _____ of barium sulphate.

1) saturation	2) super saturation	3) less saturation	4) precipitation	(1)
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- 5) Yellow colour stain formed in arsenic limit test is due to the formation of

1) Mercury arsenate	2) Mercury arsenide	3) Mercury arsenic acid	4) Mercury Arsenous acid	(1)
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- 6) Systemic acidosis is a condition, in which

1) pH of the blood is more than normal	2) pH of the blood is less than normal	3) More acid secretion in the stomach	4) Less acid secretion in the stomach	(1)
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- 7) The synonym of aqueous iodine is

1) Bleaching powder	2) Strong tincture of Iodine	3) Lugol's solution	4) Weak iodine solution	(1)
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- 8) Hydrogen peroxide is used as

1) antiseptic	2) acidifying agent	3) protective	4) antioxidant	(1)
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- 9) Agents that act by increasing the osmotic load of gastro intestinal tract by absorbing (1)

large quantity of water and thereby stimulate peristalsis are called as

1) Bulk purgatives	2) Saline purgatives	3) Stimulant purgatives	4) Emollient purgative
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10) _____ is the inorganic expectorant in cough mixture.

1) Ammonium chloride	2) Sodium chloride	3) Hydrochloride	4) Silver chloride
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11) Cryoscopic Method is used for

1) Calculation of buffer capacity	2) Calculation of pH of the buffer	3) Calculation of amount of substances that may be added to solutions of drugs to render them isotonic	4) None of the above
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12) Carnallite contains

1) Sodium chloride	2) Sodium fluoride	3) Magnesium carbonate	4) Potassium chloride
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13) Sodium fluoride is assayed by

1) Complexometry	2) Redox titration	3) Gravimetry	4) Non-aqueous titration
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14) Indicator used in the assay of Potassium iodide is.....

1) Starch	2) Litmus	3) Iodine monochloride	4) None of the above
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15) The number of molecules of water of crystallization in dried Ferrous Sulphate is

1) Three	2) Two	3) One	4) Zero
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16) Identify the wrong statement with regard to Astringents

1) They precipitate proteins	2) They constrict blood vessels	3) They possess strong local antiseptic action	4) They provide protection from external irritation
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17) Which of the following statements is not true with regard to sodium acetate?

1) It is used as urinary acidifier	2) Has diuretic property	3) Used as an expectorant	4) Is assayed by non-aqueous titration method
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18) Potassium Citrate is a

1) Mono potassium salt	2) Di potassium salt	3) Tri potassium salt	4) Tetra potassium salt
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19) Henderson-Hasselbalch equation is

1)	$\text{pH} = \text{pK}_a + \log \frac{[\text{Salt}]}{[\text{Acid}]}$	2)	$\text{pK}_a = \text{pH} + \log \frac{[\text{Salt}]}{[\text{Acid}]}$	3)	$\text{pK}_a = \text{pH} + \log \frac{[\text{Acid}]}{[\text{Salt}]}$	4)	$\text{pH} = \text{pK}_a + \log \frac{[\text{Salt}]}{[\text{Acid}]}$	(1)
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20) Lactic acid is not a

1)	Alpha-hydroxy acid	2)	Keratolytic	3)	Acetic acid derivative	4)	Antibacterial agent	(1)
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II Long Answers

Answer all the questions.

- 21) What are antimicrobial agents? Explain its mechanism of action. Explain the preparation of potassium permanganate. (10)
- 22) A buffer contains 0.05 mole/liter of formic acid and 0.10 mole/liter of sodium formate. The pK_a of formic acid is 3.75. The ionic strength of the solution is 0.10. Compute the pH of the buffer (a) with and (b) without the consideration of the activity coefficient correction. (5)
- a) Give the advantages and disadvantages of Lewis theory of acids and bases $3\text{M} + 2\text{M} = 5\text{M}$
- b) List out the functions of potassium and calcium in the body (5)

III Short Answers

Answer all the questions.

- 23) How the impurities get incorporated in to the pharmaceutical preparations during manufacturing and storage? Explain (5)
- 24) Give the method of preparation, physical property and uses of calcium carbonate (5)
- 25) Define astringents. Explain their mode of action and uses. Give the synthesis of any one of them. (5)
- 26) What are antidotes and emetics? Give examples. Write the preparation and uses of copper sulphate. (5)
- 27) Give the method of preparation, physical property, and assay of ferrous gluconate (5)
- 28) What modification is done in the limit test for chloride for potassium permanganate and sodium bicarbonate? Why? (5)
- 29) Explain different modes of radioactive decay. (5)

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