

Name:

Enrolment No:



UPES

End Semester Examination, December 2024

Course: Pharmaceutical Inorganic Chemistry

Semester : I

Program: B.Pharm

Duration : 03 Hours

Course Code: BP104T

Max. Marks: 75

SECTION A

(20Qx1M=20 Marks)

S. No.	Answer all the following MCQ questions	Marks (1 X 20) = 20	COs
Q 1	<b>Which one of the redox indicators is also used as a purgative?</b> a) Methyl orange      b) Phenol red c) Phenolphthalein    d) Methyl red	1	CO3
Q 2	<b>Inorganic compounds generally do not contain _____ atoms.</b> a) Nitrogen              b) Carbon c) Oxygen                d) Sulphur	1	CO1
Q 3	<b>Achlorhydria occurs due to _____.</b> a) insufficient secretion of HCl    b) excessive secretion of HCl c) both a and b                      d) excessive secretion of Pepsin	1	CO3
Q 4	<b>Hydrogen peroxide is stable in</b> a) Acidic solution      b) Alkaline solution c) Ammonia solution    d) None of the above	1	CO2
Q 5	<b>I-125 is used as _____</b> a) thyroid functioning b) to detect & estimate drug hormones in body fluids c) both (a) & (b) d) None of these	1	CO5
Q 6	<b>You are presented with a solution that has a pOH of 2.13. What is the pH of this solution?</b> a) 2.13                      b) 6.57 c) 11.87                     d) None of these	1	CO2
Q 7	<b>The major storage of iron in body is</b> a) Transferrin              b) Apoferritin c) Ferritin                  d) None of these	1	CO4
Q 8	<b>Which one of the following acids is used in the limit test for Sulphur?</b> a) Hydrochloric acid              b) Thioglycolic acid c) Nitric acid                        d) Barium chloride	1	CO1
Q 9	<b>Sodium thiosulphate is used as an</b>	1	CO2

	a) Antacid c) Antidote	b) Antimicrobial d) Expectorant		
<b>Q 10</b>	<b>Iodine is readily dissolved in</b> a) Aqueous solution of Potassium iodide      b) Water c) Aqueous solution of Sodium hydroxide      d) All of the above		<b>1</b>	<b>CO4</b>
<b>Q 11</b>	<b>Replacement therapy is required during _____</b> a) excess loss of water      b) metabolic acidosis c) metabolic alkalosis      d) All of these.		<b>1</b>	<b>CO3</b>
<b>Q 12</b>	<b>An example of amphoteric substance is _____</b> a) Al(OH) <sub>3</sub> b) NaOH c) Ca(OH) <sub>2</sub> d) None of these		<b>1</b>	<b>CO2</b>
<b>Q 13</b>	<b>An example of Lewis base is _____</b> a) NH <sub>3</sub> b) BF <sub>3</sub> c) both (a) and (b)      d) NaOH		<b>1</b>	<b>CO2</b>
<b>Q 14</b>	<b>Which of the following is not a gas filled detector</b> a) Proportional counter      b) G.M. Counter c) Semiconductor detector      d) Ionization chamber.		<b>1</b>	<b>CO5</b>
<b>Q 15</b>	<b>An example of physiological buffer is _____</b> a) HCl      b) Hemoglobin c) NH <sub>4</sub> OH      d) All of these		<b>1</b>	<b>CO2</b>
<b>Q 16</b>	<b>The white precipitate formed in sulphate limit test</b> a) Ferrous sulphate      b) Barium chloride c) Barium sulphate      d) None of these		<b>1</b>	<b>CO1</b>
<b>Q 17</b>	<b>What is the pH for a 0.05M solution of hydrochloric acid?</b> a) 1.3      b) 0.05 c) 2.7      d) 1.7		<b>1</b>	<b>CO2</b>
<b>Q 18</b>	<b>Expectorant is used for the treatment of</b> a) Vomiting      b) Diarrhea c) Constipation      d) Cough		<b>1</b>	<b>CO4</b>
<b>Q 19</b>	<b>Green vitriol is the synonym of</b> a) Copper sulphate      b) Zinc sulphate c) Ferrous sulphate      d) Aluminium sulphate		<b>1</b>	<b>CO3</b>
<b>Q 20</b>	<b>Solvay process is used for the preparation of</b> a) Sodium bicarbonate      b) Hydrogen peroxide c) Chlorinated lime      d) Aluminium hydroxide		<b>1</b>	<b>CO4</b>
<b>SECTION B (20 Marks)</b> <b>(2Qx10M=20 Marks)</b>				
<b>Attempt 2 Question out of 3</b>				
<b>Q 1</b>	a) Write down the difference between absorbable and non-absorbable antacids.		<b>2+2+2+4</b>	<b>CO3</b>

	b) Why are aluminum compounds more effective than other antacids? c) What is the need of combinations of antacids for gastrointestinal therapy? d) Write a short note on milk of magnesia		
<b>Q 2</b>	a) How can one substance, such as water, be both an acid and a base, according to the Brønsted-Lowry definition? Explain it with examples (3 marks) b) Calculate the pH of a 0.500 L buffer solution composed of 0.700 M formic acid ( $\text{HCOOH}$ , $K_a = 1.77 \times 10^{-4}$ ) and 0.500 M sodium formate ( $\text{HCOONa}$ ). If 50.0 mL of a 1.00 M NaOH solution is added, then what will be the new pH of this solution? c) What is phosphate buffer?	<b>3+5+2</b>	<b>CO2</b>
<b>Q 3</b>	a) What is the difference between an expectorant and anti-tussive agent? b) Explain the mechanism of action of chemical antidotes with an example c) How can iron be absorbed in the human body? What are the factors that affect iron absorption?	<b>2+3+5</b>	<b>CO4</b>
<b>SECTION-C (35 Marks)</b> <b>(7Qx5M=35 Marks)</b>			
<b>Attempt 7 Question out of 9</b>			
<b>Q 1</b>	a) What is the pharmaceutical use of radiopharmaceuticals? b) How do you handle radiopharmaceuticals?	<b>3+2</b>	<b>CO5</b>
<b>Q 2</b>	a) How can the equation $\text{pH} + \text{pOH} = 14$ be derived? b) How much sodium formate ( $\text{HCOONa}$ , 68.0069 g/mol) do you need to add to 400. mL of 1.00 M formic acid to get pH value 3.50. ( $K_a = 1.77 \times 10^{-4}$ )	<b>2+3</b>	<b>CO2</b>
<b>Q 3</b>	a) Write the role of citric acid in the limit test of iron. b) What do you mean by conjugate base and acid? What are the limitations of Arrhenius theory concept?	<b>2+3</b>	<b>CO1</b>
<b>Q 4</b>	Illustrate the pharmaceutical application of primary and secondary buffers.	<b>5</b>	<b>CO2</b>
<b>Q 5</b>	Discuss different ways to determine pharmaceutical impurities.	<b>5</b>	<b>CO1</b>
<b>Q 6</b>	a) What do you mean by tooth decay? b) Write down the mechanism of action of sodium fluoride ( $\text{NaF}$ ).	<b>1+4</b>	<b>CO2</b>
<b>Q 7</b>	Write a short note on aluminum hydroxide gel used as an antacid.	<b>5</b>	<b>CO3</b>
<b>Q 8</b>	What is ORS? What is the composition of ORS as per WHO?	<b>1+4</b>	<b>CO3</b>
<b>Q 9</b>	Discuss the mechanism of action of antimicrobial agents.	<b>5</b>	<b>CO4</b>

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