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| Name:                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                        |  |     |
| Enrolment No:                                                                                                                                                                                                                                                                          |                                                                                                                                                                                        |                                                                                    |     |
| <div>UPES</div> <div>End Semester Examination, December 2025</div> <div><div>Course: Pharmaceutical Inorganic Chemistry</div><div>Program: B.Pharm</div><div>Course Code: BP104T</div></div> <div><div>Semester : I</div><div>Duration : 03 Hours</div><div>Max. Marks: 75</div></div> |                                                                                                                                                                                        |                                                                                    |     |
| Instructions: Read all the questions carefully.                                                                                                                                                                                                                                        |                                                                                                                                                                                        |                                                                                    |     |
| SECTION A<br>(20Qx1M=20 Marks)                                                                                                                                                                                                                                                         |                                                                                                                                                                                        |                                                                                    |     |
| S. No.                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                        | Marks                                                                              | COs |
| Q 1                                                                                                                                                                                                                                                                                    | 1st edition of Indian Pharmacopoeia was published in<br>a. 1955                      b. 1948<br>c. 1950                      d. 1975                                                   | 1                                                                                  | CO1 |
| Q 2                                                                                                                                                                                                                                                                                    | Which of the following gas is produced in the limit test of arsenic<br>a. Hydrogen                      b. Methane<br>c. Carbon monoxide      d. Arsine                                | 1                                                                                  | CO1 |
| Q 3                                                                                                                                                                                                                                                                                    | The Henderson-Hasselbalch equation is used to calculate:<br>a. Osmotic pressure              b. pH of buffer solution<br>c. Solubility                      d. Tonicity                | 1                                                                                  | CO1 |
| Q 4                                                                                                                                                                                                                                                                                    | You are presented with a solution that has P <sup>OH</sup> of 12.13, what is the pH of the solution.<br>a. 1.87                      b. 2.87<br>c. 12.87                      d. 10.87 | 1                                                                                  | CO1 |
| Q 5                                                                                                                                                                                                                                                                                    | Sodium Metaphosphate is also known as<br>a. Precipitated chalk      b. Graham salt<br>c. Madrell’s salt              d. None of these                                                  | 1                                                                                  | CO1 |
| Q 6                                                                                                                                                                                                                                                                                    | Which is both acidifying as well as expectorant:<br>a. Ammonium chloride              b. Potassium iodide<br>c. Dil. HCl                      d. Sodium potassium tartrate             | 1                                                                                  | CO1 |
| Q 7                                                                                                                                                                                                                                                                                    | Alum is commonly used as<br>a. Anti-infective                      b. Astringent<br>c. Protectives                      d. Antacid                                                     | 1                                                                                  | CO1 |
| Q 8                                                                                                                                                                                                                                                                                    | Zinc sulphate is prepared by the action of .....On Zinc Oxide<br>a. Conc. HCl                      b. Conc. H2S04<br>c. Conc. HN03                      d. None of these               | 1                                                                                  | CO1 |
| Q 9                                                                                                                                                                                                                                                                                    | ..... is used to prevent dental caries.<br>a) Sodium chloride              b) sodium fluoride<br>c) Potassium chloride      d) stannous chloride                                       | 1                                                                                  | CO1 |
| Q 10                                                                                                                                                                                                                                                                                   | What do you mean by hyponatremia?                                                                                                                                                      | 1                                                                                  | CO1 |

|             |                                                                                                                                                                                                 |          |            |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|
| <b>Q 11</b> | Green vitriol is the synonym of .....<br>a. Copper sulphate b. Zinc sulphate<br>c. Ferrous sulphate d. Aluminium sulphate                                                                       | <b>1</b> | <b>CO2</b> |
| <b>Q 12</b> | Iodine is readily dissolved in.....<br>a. Aqueous solution of Potassium iodide      b. Water<br>c. Aqueous solution of Sodium hydroxide      d. All of the above                                | <b>1</b> | <b>CO2</b> |
| <b>Q 13</b> | Magnesium sulfate is an example of which type of cathartic?<br>a. lubricant cathartic      b. Osmotic cathartic<br>c. Stimulant cathartic      d. Bulk-forming cathartic                        | <b>1</b> | <b>CO2</b> |
| <b>Q 14</b> | Hydrogen peroxide is an antimicrobial agent that works by:<br>a. Oxidizing organic matter      b. Denaturing proteins<br>c. Inhibiting cell wall synthesis      d. Disrupting the cell membrane | <b>1</b> | <b>CO2</b> |
| <b>Q 15</b> | Which compound is used as an adsorbent and protective in diarrhea?<br>a. Activated charcoal      b. Talc<br>c. Zinc oxide      d. Kaolin                                                        | <b>1</b> | <b>CO2</b> |
| <b>Q 16</b> | Lugol's solution is primarily a solution of:<br>a. Iodine in alcohol<br>b. Iodine in potassium iodide solution<br>c. Iodine in distilled water<br>d. Iodine in sodium chloride solution         | <b>1</b> | <b>CO2</b> |
| <b>Q 17</b> | The S.I. unit of radioactivity is<br>a. Roentgen      b. Becquerel<br>c. Curie      d. Rutherford                                                                                               | <b>1</b> | <b>CO2</b> |
| <b>Q 18</b> | Sodium nitrite is a ..... antidote<br>a. Physiological      b. Mechanical<br>c. Chemical      d. All of the above                                                                               | <b>1</b> | <b>CO2</b> |
| <b>Q 19</b> | Which types of radiation having high penetration power?<br>a. Alpha radiation      b. Beta radiation<br>c. Gamma Radiation      d. UV radiation                                                 | <b>1</b> | <b>CO2</b> |
| <b>Q 20</b> | Radiopharmaceuticals compounds stored in.<br>a. Refrigerator      b. Lead container<br>c. Warm temperature      d. Glass Container                                                              | <b>1</b> | <b>CO2</b> |

**SECTION B (20 Marks)**

**(2Qx10M=20 Marks)**

**Attempt 2 Question out of 3**

|            |                                                                                                                                                                 |              |            |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------|
| <b>Q 1</b> | Define impurities in pharmaceuticals. Explain sources of impurities with examples.                                                                              | <b>10</b>    | <b>CO4</b> |
| <b>Q 2</b> | a) Write down the difference between absorbable and non-absorbable antacids. b) "Combinations of antacids therapy required as effective medicament."-Justify it | <b>5+5</b>   | <b>CO5</b> |
| <b>Q 3</b> | Define and classify Antidotes. Explain the different mechanisms of antidotes with proper examples.                                                              | <b>2+3+5</b> | <b>CO5</b> |

**SECTION-C (35 Marks)**

**(7Qx5M=35 Marks)**

**Attempt 7 Question out of 9**

|            |                                                                                                                                                      |          |            |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|
| <b>Q 1</b> | What do you mean by tooth decay? Write down the mechanism of action of sodium fluoride (NaF).                                                        | <b>5</b> | <b>CO3</b> |
| <b>Q 2</b> | Describe the principle involved and method in the limit test for Arsenic.                                                                            | <b>5</b> | <b>CO3</b> |
| <b>Q 3</b> | Write the composition and uses of Oral Rehydration Salt (ORS).                                                                                       | <b>5</b> | <b>CO3</b> |
| <b>Q 4</b> | Discuss the mechanism of action of antimicrobial agents with examples.                                                                               | <b>5</b> | <b>CO3</b> |
| <b>Q 5</b> | Define the term emetics and expectorants with examples.                                                                                              | <b>5</b> | <b>CO3</b> |
| <b>Q 6</b> | Why glycoprotein transferrin (Tf) crucial for iron utilization in human body?<br>How can the presence of food in the stomach affect iron absorption? | <b>5</b> | <b>CO3</b> |
| <b>Q 7</b> | Classify and discuss the mechanism of action of laxatives with examples.                                                                             | <b>5</b> | <b>CO4</b> |
| <b>Q 8</b> | What is the principle and working of a GM counter?                                                                                                   | <b>5</b> | <b>CO4</b> |
| <b>Q 9</b> | Discuss diagnostic and therapeutic applications of radiopharmaceuticals.                                                                             | <b>5</b> | <b>CO4</b> |