**ARKA JAIN University, Jharkhand**

1st Semester 2nd Internal Examination – 2023-2024



**Subject: Pharmaceutical Analysis-1 (Theory)**

**Course: B. Pharm** **Full Marks: 30**

**Time: 1hr**

* **All Questions are compulsory**.
1. **Multiple Choice Questions**$\left(10×1=10\right)$
2. **Which method of precipitation titration is commonly used for the estimation of chloride ions?**

|  |  |
| --- | --- |
| 1. Mohr’s method
 | 1. Volhard’s method
 |
| 1. Fajans method
 | 1. Modified Volhard’s method
 |

1. **Which indicator is commonly used in Mohr’s method to detect the endpoint of the titration between silver nitrate and chloride ions?**

|  |  |
| --- | --- |
| 1. **Phenolphthalein**
 | 1. **Methyl orange**
 |
| 1. **Potassium dichromate**
 | 1. **Potassium chromate**
 |

1. What is the titrant (precipitating agent) used in Volhard’s method to determine iodide ions?

|  |  |
| --- | --- |
| 1. Sodium chloride (NaCl)
 | 1. Silver nitrate (AgNO3)
 |
| 1. Potassium iodate (KIO3)
 | 1. Potassium dichromate (K2Cr2O7)
 |

1. **Fajans method is commonly employed for the estimation of which ion in a solution?**

|  |  |
| --- | --- |
| 1. **Chloride ions**
 | 1. **Bromide ions**
 |
| 1. **Iodide ions**
 | 1. **Sulfate ions**
 |

1. **Which of the following indicators is often used in the Modified Volhard’s method for chloride estimation?**

|  |  |
| --- | --- |
| 1. **Phenolphthalein**
 | 1. **Methyl orange**
 |
| 1. **Starch solution**
 | 1. **Potassium chromate**
 |

1. **In iodometry, what substance is commonly used as the titrant, reacting with the analyte?**

|  |  |
| --- | --- |
| 1. **Iodine (I2)**
 | 1. **Potassium iodide (KI)**
 |
| 1. **Sodium chloride (NaCl)**
 | 1. **Sodium thiosulfate (Na2S2O3)**
 |

1. **In a redox titration, what is the substance that undergoes reduction?**

|  |  |
| --- | --- |
| 1. **Oxidizing agent**
 | 1. **Indicator**
 |
| 1. **Titrant**
 | 1. **Analyte**
 |

1. **Which of the following indicators is commonly used in redox titrations involving iodine or iodide ions?**

|  |  |
| --- | --- |
| 1. **Phenolphthalein**
 | 1. **Methyl orange**
 |
| 1. **Starch**
 | 1. **Bromothymol blue**
 |

1. **What is the chemical symbol for the sulfate ion commonly used in redox titrations?**

|  |  |
| --- | --- |
| 1. **S**
 | 1. **SO3**
 |
| 1. **SO4**
 | 1. **S2O3**
 |

1. **In redox titrations, what is the purpose of performing a blank titration?**

|  |  |
| --- | --- |
| 1. **To determine the concentration of the titrant**
 | 1. **To establish a baseline for color change**
 |
| 1. **To confirm the accuracy of the titration apparatus**
 | 1. **To calculate the moles of the titrant used**
 |

1. **Long Answers (Answer 1 out of 2)** $\left(1×10=10\right)$
2. What is Argentometric titration? Explain about the different methods use for the determination of end point in precipitation titration.
3. How to understand the concepts of oxidation and reduction? Write down the principle and application of dichrometry.
4. **Short Answers (Answer 2 out of 3)**$ (2×5=10)$
5. Preparation and standardization of Iodine solution.
6. Discuss the theory of adsorption indicator.
7. Application of Mohr’s method for the determination of chloride ion in a solution.