



**I. Answer any 10 of the following questions:**

[10 x 2 = 20]

1. Give the uses of sulphuric acid.
2. Give a reason to support that sulphuric acid is a dehydrating agent.
3. Give the uses of argon.
4. What happens when  $\text{PCl}_5$  is heated?
5. Which is more stable?  $\text{Fe}^{3+}$  or  $\text{Fe}^{2+}$  explain.
6. Compare the ionization enthalpies of first series of the transition elements.
7. Why do zirconium is more stable than cerium (II)?
8. What is the unit of a rate of reaction?
9. Write Arrhenius equation and explain the terms involved.
10. Give two examples for zero order reaction.
11. Explain pseudo first order reaction with an example.
12. How do nature of the reactant influence rate of reaction.

**II. Answer any 5 of the following questions:**

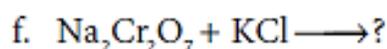
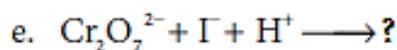
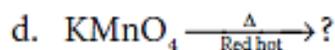
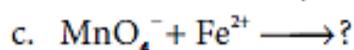
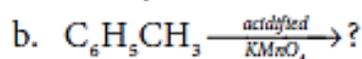
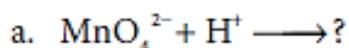
[5 x 3 = 15]

1. What is inter pair effect?
2. Explain why fluorine always exhibit oxidation state of -1?
3. What are interhalogen compounds? Give examples.
4. Give the uses of helium.
5. What are actinides? Give three examples.
6. What are interstitial compounds?
7. Define rate of a chemical reactions.
8. Define average rate and instantaneous rate.

III. Answer any 7 of the following questions:

[7 x 5 = 35]

1. Explain briefly the action of nitric acid on metals.
2. How are the following oxyacid are of nitrogen prepared?
3. Explain the preparation, properties and uses of phosphorus trichloride.
4. Explain the preparation, properties and uses of phosphorus pentachloride
5. Justify the position of lanthanides and actinides in the periodic table.
6. Describe the preparation of potassium dichromate.
7. Complete the following



8. Compare Lathanides and Actinides?
9. Derive integrated rate law for a zero order reaction  $\text{A} \rightarrow \text{Product}$ .
10. What is an elementary reaction? Give the differences between order and molecularity of a reaction.

-----ALL THE BEST-----

70 marks will be converted to 100 marks

Test should be written under the supervision of your parents and get the answer paper signed from them.

No corrections should be made after the test timings. We expect your honesty.

Test Papers have to be submitted after the completion of all the 4 tests.

Submission Date of Test Papers: 1<sup>st</sup> October, 2<sup>nd</sup> October, 3<sup>rd</sup> October

Timings: 9 AM – 12.30 PM / 5 PM- 7 PM