

Roll No.

Total Pages : 3

239401

May, 2019

**M.Sc. Chemistry, Semester-IV
Inorganic Chemistry Special-I (CH-401-A)**

Time : 3 Hours]

[Max. Marks : 75

Note :

- 1. It is compulsory to answer the questions of Part-1. Limit your answers within 20-40 words in this part.*
- 2. Answer any four questions from Part-2 in detail.*
- 3. Different parts of the same question are to be attempted adjacent to each other.*
- 4. Assume suitable standard data wherever required, if not given.*

PART-1

1. (a) What are anation reactions?
(b) What is principle of NAA?
(c) Define Quantum Yield.
(d) Explain Compound Nucleus Theory.
(e) Define isopoly anions with example.
(f) What are Redistribution reactions?

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- (g) What are thermonuclear reactions?
 (h) What do you mean by nuclear stability?
 (i) What is carbonyl scrambling?
 (j) What are Photochemical Laws?

(10×1.5=15)

PART-2

2. (a) Explain the inner sphere mechanism with example.
 7.5
 (b) Explain metal ion catalysed reactions with example.
 7.5
3. (a) Explain the fluxional process in η^2 -allyl metal complex.
 7.5
 (b) What is Franck Condon Principle? Highlight its significance in Photochemistry.
 7.5
4. Write short notes on the following :
- (i) Photoisomerisation reactions. 7.5
 (ii) Photoredox processes conditions of excited state for redox reactant. 7.5
5. Describe the principle and application of Isotopic Dilution Analysis?
 15

6. Explain various types of Nuclear Reactions. 15
7. (a) State Grothaus Draper Law and give its significance in photochemistry. 7.5
 (b) What is base hydrolysis? Explain conjugate base mechanism in detail. 7.5