SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
M.Sc. - END SEMESTER EXAMINATIONS APRIL - 2022
SEMESTER - II
20PCHCT2005 - Inorganic Chemistry-II

Total Duration : 3 Hrs. **Total Marks : 60**

Section A

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. a) What do you mean by spinels and inverse spinels?
   b) Explain band theory.
2. Write a note on a) Wilkinsons Catalyst b) Ziegler-Natta Catalyst.
3. Describe with neat sketch of DSSC's solar cells.
4. a) Illustrate the different types of radioactive decay.
   b) Explain cloud chamber method.
5. Compare and Explain the boding in carbonyls and nitrosyls.
6. Distinguish between metallocene and non-metallocene catalyst.
7. Explain photo redox reactions in coordination complexes.
8. a) How will you prepare radioactive tracers?
   b) Give the applications of radioactive tracers in the field of medicine.

Section B

Part A

Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. a) Write a note on high temperature super conductors.
   b) Mention and illustrate the different types of magnetic behaviour.
   c) Classify order and disorder transformations.
10. a) Predict the synthesis, structure and bonding of metellocenes.
    b) Show the electrophilic and neucleophilic attack on ligands.
11. Prepare the following:
    a) Hydroformylation of olefins. b) Oxidation of olefins to aldehyde.
    c) Cyclo oligomerisation of acetylene.
12. Explain a) Photo substitution reaction in coordination complexes.
    b) Photo sensitization reactions.

Part B

Compulsory question $(1 \times 10 = 10$ Marks)

13. a) Illustrate Nuclear fission and fusion reaction acts as energy sources.
    b) Describe the technique neutron activation analysis.
    c) How will you determine age of geological specimens?

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