

K-400

Total Pages : 3

Roll No.

MCH-506

INORGANIC CHEMISTRY-II

M.Sc. Chemistry (MSCCH)

2nd Semester Examination, 2023 (Dec.)

Time : 2 Hours]

[Max. Marks : 35

Note : This paper is of Thirty Five (35) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION-A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nine and Half (9½) marks each. Learners are required to answer any Two (02) questions only.

(2×9½=19)

1. Explain the following:
 - (a) Labile and Inert Complexes.
 - (b) Molar ratio method.
2. What are stability constants? Explain the differences between stepwise and overall stability constant.
3. Discuss the SN_1 and SN_2 mechanism for octahedral complexes.
4. What are Boron Hydrides or Boranes? Write a short note on the classification of Boranes with examples.
5. Write short note on any *two* :
 - (a) Hemoglobin.
 - (c) Chelate effect.

SECTION-B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Four (04) marks each. Learners are required to answer any Four (04) questions only. (4×4=16)

1. Explain the factors effecting the stability of complexes.

2. What are metal clusters? Explain the structure of $[\text{Re}_2\times 8]^{2-}$ ion.
 3. Explain acid hydrolysis of octahedral complexes.
 4. Discuss the outer sphere and inner sphere mechanism of electron transfer reactions.
 5. What is trans effect and trans effecting series?
 6. What are the factors that affect the rates of electron transfer reactions?
 7. What is the porphyrin Ring? Discuss the structure of myoglobin.
 8. Discuss the mechanism of nucleophilic substitution reactions in square planar complexes.
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