

T.Y.B.SC. SEM – V (2014 Course) : WINTER - 2018
SUBJECT : INORGANIC CHEMISTRY – V

Day : Wednesday
Date : 10/10/2018

W-2018-0833

Time : 12.00 NOON TO 02.00 PM
Max. Marks : 40

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of logarithmic and pocket **CALCULATOR** is allowed.

SECTION - I

Q. 1 Attempt **ANY TWO** of the following: **(10)**

- a) What are the fundamental postulates of Werner's coordination theory?
- b) Define E.A.N. Explain, whether EAN rule is obeyed in the following complexes or not?
 - i) $[Pt(NH_3)_6]^{+4}$
 - ii) $[Cu(CN)_4]^{-3}$
- c) Explain how following factors affect thermodynamic stability of complexes:
 - i) Nature of Ligand
 - ii) Chelation and chelat effect

Q. 2 Attempt **ANY TWO** of the following: **(10)**

- a) Explain geometrical isomerism in following types of metal complexes:
 - i) $[MA_2X_2]$
 - ii) $[MA_2XY]$
- b) Explain 'coordination compound' and write IUPAC nomenclature for following metal complexes:
 - i) $[Co(NH_3)_6]Cl_3$
 - ii) $K_4[Fe(CN)_6]$
 - iii) $[Cr(en)_3]Cl_3$
- c) Explain Ionization isomerism and Linkage isomerism with suitable examples.

SECTION - II

Q. 3 Attempt **ANY TWO** of the following: **(10)**

- a) Write assumptions of crystal field theory.
- b) Discuss the bonding in following complexes according to VBT:
 - i) $[MnBr_4]^{-2}$
 - ii) $[Ni(CN)_4]^{-2}$
- c) Explain following types of corrosion:
 - i) Soil corrosion
 - ii) Pitting corrosion
 - iii) Stress corrosion

Q. 4 Attempt **ANY TWO** of the following: **(10)**

- a) Define corrosion and explain Atmospheric corrosion with example.
- b) Explain splitting of d orbitals in square planar complexes on the basis of C.F.T.
- c) Write limitations of valence Bond theory.

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