

C.U.SHAH UNIVERSITY

Wadhwan City

Subject Code : **5SC01CHC1**

Summer Examination-2014

Date: 9/06/2014

Subject Name : **Inorganic Chemistry**

Branch/Semester:- M.Sc(Chemistry/II)

Time:02:00 To 5:00

Examination: Regular

Instructions:-

- (1) Attempt all Questions of both sections in same answer book / Supplementary
- (2) Use of Programmable calculator & any other electronic instrument is prohibited.
- (3) Instructions written on main answer Book are strictly to be obeyed.
- (4) Draw neat diagrams & figures (If necessary) at right places
- (5) Assume suitable & Perfect data if needed

SECTION-I

- Q-1 Do as Directed. (07)**
- a) Explain Ferromagnetism (02)
 - b) Write the bowng angle value of water (02)
 - c) Define diamagnetic (01)
 - d) Define electron density. (01)
 - e) Give definition of stereo chemical (01)
- Q-2 Answer the following (14)**
- a) Discuss the pi-bond and delocalized energy of 1,3 butadiene. (05)
 - b) Calculate the magnetic moment values for Fe (III), Cu(II) and Ti(II) (05)
 - c) Find out the ground state term symbol of i) Cu(II), ii) Ni(II), iii) Fe(II) (04)
- OR**
- Q-2 Answer the following (14)**
- a) Give an account on the properties of paramagnetic bodies (05)
 - b) Discuss magnetic susceptibility by Gouy's Method (05)
 - c) Define the following i) Magnetic induction, ii) Van Vleck formula (04)
- Q-3 Answer the following (14)**
- a) Discuss the stereo chemical applications of the first transition series (07)
 - b) Explain the magnetic application of Lanthanides and Actinides series (07)
- OR**
- Q-3 Answer the following in detail. (14)**
- a) Discuss the Huckel π -electron theory and its applications (08)
 - b) Define the following i) Pascal's Constant, ii) Russell-Saunders coupling (06)
 - iii) Anti and ferrimagnetism



SECTION-II

- Q-4 Do as Directed. (07)**
- a) Define chemical shift (02)
 - b) What is Doppler effect? (02)
 - c) What is the full form DART? (01)
 - d) Give equation for recoil energy (01)
 - e) Define quadrupole splitting? (01)

- Q-5 Answer the following (14)**
- a) Write a brief note on application of Mossbauer spectroscopy (05)
 - b) Explain the principle of Mossbauer effect (05)
 - c) How is the EDTA useful reagent in inorganic analysis? (04)

OR

- Q-5 Answer the following (14)**
- a) Discuss the Ammonium Vanadate (NH_4VO_3), Ceric Sulfate [$\text{Ce}(\text{SO}_4)_2$] as the reagent (05)
 - b) What is Mossbauer spectroscopy? Draw the diagram of Mossbauer spectrophotometer (05)
 - c) Write a note on reagents i) DMG, ii) Dithioamide (04)

- Q-6 Answer the following in detail. (14)**
- a) Write a note on i) Benzidine, ii) Salicylaldehyde, iii) o-phenanthroline inorganic reagent (06)
 - b) Discuss the Potassium Bromate (KBrO_3), Potassium Iodate (KIO_3) as the useful inorganic reagents (08)

OR

- Q-6 Answer the following in detail. (14)**
- a) Write a note on i) Dithiozone, ii) Aluminon iii) Oxine inorganic reagents (06)
 - b) How the inorganic reagents useful for organic reactions and write a note on Anthranilic and rubenic acid. (08)

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