

(c) Bonding in Metal Carbonyls. 5

9. (a) Describe linear and bent Nitrosyl Ligand with suitable examples. 7

(b) Calculate number of M-M bonds and draw structures of the following metal carbonyls $(\mu-\text{CO})_2(\text{C}_6\text{Rh})_3\text{CO}$ and



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Roll No.

(06/21-II)

10271

M. Sc. EXAMINATION

(For Batch 2017 & Onwards)

(Second Semester)

CHEMISTRY

CH(H)-201

Inorganic Chemistry-II

Time : Three Hours

Maximum Marks : 70

Note : Question No. 1 is compulsory. Attempt Five questions in all, selecting *one* question from each Section. All questions carry equal marks.

(Compulsory Question)

1. (a) What are Mirror Nuclei ?
(b) Define non-protic solvent.
(c) What is overvoltage ?

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- (d) What are homonuclear and heteronuclear carbonyls ? 7
- (e) Differentiate between linear and bent nitrosyl ligand. 7
- (f) What is mass defect ? 7
- (g) Explain Synergic effect. $2 \times 7 = 14$

Section I

- 2. (a) Explain Laws of Radioactive Disintegration. 7
- (b) Classify Nuclear reactions on the basis of nature of projectile and ejectile. 7
- 3. (a) Discuss nuclear forces in detail. 7
- (b) Discuss therapeutic use of radio-isotopes. 7

Section II

- 4. Explain the following nuclear reactions :
 - (a) Evaporation nuclear reactions 5
 - (b) Spallation nuclear reactions 5
 - (c) Nuclear fusion reaction. 4
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- 5. (a) Discuss radioactive waste disposal. 7
- (b) Discuss radiocarbon dating and uranium dating. 7

Section III

- 6. (a) Explain kinetics and mechanism of coordination reactions in non-aqueous Medium with suitable examples. 7
- (b) Discuss reactions of BeF_3 , N_2O_4 and H-CN in non-aqueous media. 7
- 7. (a) Explain type of solvents and give their physical properties. 7
- (b) What is electrode potential ? Also describe its relation with spontaneity of chemical reactions. 7

Section IV

- 8. Explain the following terms :
 - (a) Symbiosis 5
 - (b) HSAB principle 4
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