

## Unit – I

Q. 1 what is radius ratio? Calculate limiting radius ratio for coordination number 6.

Q.2 Write short note on -

- (i) Boron Haber cycle                      (ii) Stoichiometric defect                      (iii) Solubility of ionic compound

## Unit – II

Q. 3. Define Hybridization. Write different rules of Hybridization. Discuss the structure of the following on the basis of Hybridization.  $\text{ICl}_2^-$ ,  $\text{ICl}_4^-$  &  $\text{IF}_5$

Q.4. Explain the following on the basis of MOT-

- (i) Oxygen molecule is paramagnetic where as nitrogen molecule diamagnetic  
(ii) NO molecule is paramagnetic where as  $\text{NO}^+$  ion is diamagnetic  
(iii) Write the bond orders of the following species-  
 $\text{O}_2^{-2}$ ,  $\text{O}_2^-$ ,  $\text{O}_2^+$ ,  $\text{O}_2^{+2}$

## Unit – III

Q.5. Define Alkyl and Aryl compounds. Describe the synthesis, properties and structure of diorganomagnesium Compound?

Q.6. Write short note on –

- (i) Diagonal relationship between Beryllium and Aluminium  
(ii) Solvation tendency of S- block elements

## Unit – IV

Q.7. what do you mean by Silicates? Give their classification and discuss their structures?

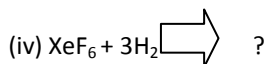
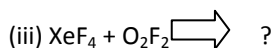
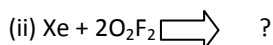
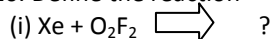
Q.8. Write short note on –

- (i) Fullerenes                      (ii) Interhalogen compounds

## Unit – V

Q.9. Give the method of preparations and properties of  $\text{XeO}_4$ ,  $\text{XeO}_2\text{F}_2$  and  $\text{XeOF}_4$ . Discuss their structure also.

Q.10. Define the reaction -



# BIYANI GIRLS COLLEGE

Model Paper - 2015  
B.Sc. (First) Chemistry  
Inorganic Chemistry

Time – Three Hours

Marks - 33

## Unit – I

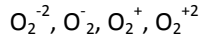
Q. 1 what is radius ratio? Calculate limiting radius ratio for coordination number 4.

Q.2. Define the Hybridization. Write different rules of Hybridization. Discuss the structure of the following on the basis of Hybridization. Example –  $\text{PCl}_3$ ,  $\text{PCl}_5$  and  $\text{IF}_5$ .

## Unit – II

Q. 3 (i) define the energy diagrams of Oxygen & Nitrogen molecule.

(ii) Write the bond orders of the following species-



Q.4. what is VSEPR theory? Write a different rule of it's and explain the structure of  $\text{ClF}_3$ ,  $\text{BrF}_5$ , and  $\text{SF}_4$  molecule on this basis of this theory?

## Unit – III

Q.5. Write short note on –

- (i) Diagonal Relationship of Lithium and Magnesium
- (ii) Lithium aluminium hydride
- (iii) Polyether and Crown Ether

Q.6. Define Alkyl and Aryl compounds. Describe the synthesis, properties and structure of diorganomagnesium Compound?

## Unit – IV

Q.7. (a) Write the characteristics of p – block elements.

(b) What do you mean by Silicates? Give their classification and discuss their structures?

Q.8. Write short notes on –

- (i) Borazine
- (ii) Fullerenes
- (iii) Inter Halogen Compounds

## Unit – V

Q.9. Write preparation, property and structure of – (i)  $\text{XeF}_6$                       (ii)  $\text{XeO}_2\text{F}_2$                       (iii)  $\text{XeO}_3$

Q.10. Give method of preparations and properties of  $\text{XeF}_2$  and  $\text{XeF}_4$ . Discuss their structures also.