

BIYANI GIRLS COLLAGE
M.sc Previous(Chemistry)

paper-1

Inorganic chemistry

Time :-3 Hour

Max marks-100

Unit- 1

Q1 What are the properties of a group? Explain these properties by talking example of C_3 point group?
(10+10 =20)

Or

Q2 Name various symmetry element and point group present in the following molecules :-

- (a) $CHFCIBr$
- (b) C_6H_6
- (c) BF_3
- (d) H_2O

(5+5+5+5=20)

UNIT-2

Q3 Write short notes on the following :-

- (a) Postulates of VSPER theory
- (b) Walsh diagram

(10+10 =20)

Or

Q4 Short notes on:-

- (a) Bent rule
- (b) Energetic of hybridization

(10+10 =20)

Unit -3

Q5 (a) How will you calculate Dq , B and β ?

- (b) Charge transfer spectra

(10+10 =20)

or

Q6. What do you understand by stability of metal complex? Discuss the methods of determination of binary formation constant. **(10+10 =20)**

UNIT- 4

Q7. Write short notes on the following :-

- (a) Factors affecting acid hydrolysis
- (b) Anation reactions
- (c) Redox reactions
- (d) Substitutions reaction in square planar complexes **(10+10 =20)**

Or

Q8. What do you understand by labile and inert complexes? Explain the cause of lability and inertness of octahedral complexes on the basis of crystal field theory?

UNIT-5

Q9. Short notes on the following:-

- (a) Dinitrogen complexes
- (b) Dioxygen complexes **(10+10 =20)**

Or

Q10. What are carbonyls? How are they prepared? Discuss in their nature of bonding? **(10+10 =20)**