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SUBJECT CODE NO: - YY-2453
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. (CBCGS) (Pattern 2022) F.Y SEM I
Examination April / May - 2024
Chemistry Paper-I Inorganic Chemistry



[Time: 1:30 Hours]

[Max. Marks: 40]

Q.1 Explain Debroglies equation and Heisenberg uncertainty principle. 10

OR

- a) Write short notes on % Ionic character and solvation energy.
- b) Explain factors affecting to the formation of ionic bond.

Q.2 Explain VSEPR theory and its different postulates. 10

OR

- a) Draw MO diagram of No molecule
- b) Draw MO diagram of Be₂ molecule

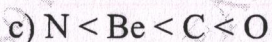
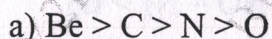
Q.3 Write notes on (Any two) 10

- a) Hunds rule of maximum multiplicity
- b) Born Lande's equation
- c) Geometry of H₂O and NH₃ molecule
- d) Bond Energy and Bond length

Q.4 Multiple choice questions. 10

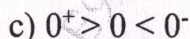
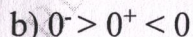
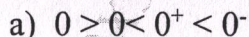
Type equation here.

1) Correct order of electron affinity



d) None

2) Correct order of atomic & ionic size.



d) None

3) DE Broglie's Equation is...

a) $\Delta x \times \Delta p \geq \frac{h}{4\pi}$

b) $\lambda = \frac{h}{p}$

c) $\lambda = \frac{h}{mc}$

d) Both b & c

4) Among the following molecules highest ionic character is observed in _____

- a) BeCl_2 b) NH_3
c) CaCl_2 d) SiCl_2

5) Among the following molecule highest melting point is seen in _____

- a) LiCl b) LiBr
c) LiF d) LiI

6) Shape of XeF_4 molecule is _____

- a) Tetrahedral b) Trigonal bi pyramide
c) T-shaped d) Square planer

7) B-A-B bond angle decreases with increasing _____

- a) Ionization potential b) Electronegativity
c) Electron affinity d) None

8) Shape of ClF_3 molecule is _____

- a) T-shape b) V-shaped
c) Tetrahedral d) Trigonal pyramidal

9) Bond order of O_2 molecule is _____

- a) 1.5 b) 1.2
c) 2 d) 2.5

10) Correct order of stability of molecule on the basis of MOT.

- a) $\text{O}_2 > \text{N}_2^+ > \text{CO} > \text{NO}$ b) $\text{CO} > \text{NO} = \text{N}_2^+ > \text{O}_2$
c) $\text{O}_2 > \text{CO} > \text{NO} > \text{N}_2^+$ d) None