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SUBJECT CODE NO: - CB-2331
FACULTY OF SCIENCE AND TECHNOLOGY
B. Sc. F.Y (Sem-I)
Examination December/January-2022-23
Chemistry Paper-I CHE-011 Inorganic Chemistry

[Time: 1:30 Hours]

[Max. Marks: 40]

Please check whether you have got the right question paper.

N. B

- 1) All questions are compulsory.
- 2) All questions carry equal Marks.
- 3) Draw neat diagrams and give labels, wherever necessary.
- 4) Figures to the right indicate full marks.

Q1 What is electronegativity? Explain its trend in periodic table? 10

OR

- a) Explain Bond – Haber cycle for NaCl.
- b) Explain Dipole moment and percentage ionic character.

Q2 What is sp^3 type of hybridization? Explain the geometry of $SiCl_4$ molecule on the basis of hybridization! 10

OR

- a) Explain Bond Energy and Bond Length.
- b) Explain molecular orbital diagram of B_2 molecule

Q3 Write short Notes on (Any two) 10

- 1) Hund's rule of maximum multiplicity
- 2) Explain concept of Lattice energy and solvation energy.
- 3) On the basis of VSEPR theory, explain geometry of IF_5 molecule.
- 4) Molecular diagram (MO) of O_2 molecule.

Q4 Attempt the following 10

- 1) Which of the following element show lowest ionization energy value.
a) oxygen b) Lithium c) Caesium d) Bromium

- 2) The statement, filling of electrons an orbital takes place according to increasing energy level is given by _____
- a) pauli's exclusion principle b) Hund's Rule
c) Aufbau's principle d) $n + l$ rule
- 3) From the following which element has highest electron affinity value.
a) F b) Cl c) Br d) I
- 4) Which type of hybridization of nitrogen present in NH_3 molecule?
a) Sp^2 b) Sp^3 c) Sp^3d d) Sp^3d^2
- 5) Bond order of N_2 molecule is _____
a) 2.5 b) 3 c) 2.0 d) 1.5
- 6) From the following, in which molecule most ionic character is present?
a) LiCl b) NaCl c) MgCl_2 d) CsCl
- 7) What is the geometry of PCl_5 molecule?
a) Trigonal b) Tetrahedral c) Trigonal bi pyramidal d) square planar.
- 8) S-S overlapping leads to formation of _____
a) Sigma bond b) ionic bond c) Molecular bond d) metallic bond.
- 9) How many total no. of electrons present in antibonding molecular orbital (MO) of N_2 molecule
a) 4 b) 2 c) 6 d) 3
- 10) Shape of ClF_3 molecule is _____
a) T-shaped b) Tetrahedral
c) Pentagonal bi-pyramidal
d) square pyramidal.