

Seat No.

B.Sc. (part -II) (semester- IV) (CBCS)
Examination March 2023
CHEMISTRY (paper – VII)
DSC-D3: Inorganic Chemistry
Subject Code :- 78909

Total :50 marks

Day and Date : 22/6/23

Time : 10:30 to 12:30

Instruction : 1) All question are compulsory .

2) Figures to the right indicate full marks.

3) Draw neat diagrams wherever necessary

Que 1) Select the most correct alternate from the following

[10]

- Co-ordinate bond is ----
 - Semi-polar bond
 - van der Wall's bond
 - double bond
 - weak bond
- Effective atomic number of Fe in $K_4[Fe(CN)_6]$ is -----.
 - 24
 - 26
 - 28
 - 36
- DMG is specifically used for -----
 - Ni^{++}
 - Fe^{+2}
 - Cu^{++}
 - Zn^{++}
- The bridging ligands in IUPAC names of complex are shown by symbol -----
 - δ
 - ν
 - μ
 - λ
- Diamond, graphite, grapheme, fullerenes are the allotropes of -----.
 - silicon
 - sulphur
 - phosphorus
 - carbon
- Give the electronic configuration of Zn^{+2} ion is-----.
 - $[Ar] 3d^{10} 4s^2$
 - $[Ar] 3d^9 4s^2$
 - $[Ar] 3d^{10} 4s^1$
 - $[Ar] 3d^{10} 4s^0$
- The spot test analysis technique was developed by scientist ----- and his coworkers.
 - C. V. Raman
 - Fiegl
 - A. I. Vogel
 - P. Waage
- General electronic configuration of elements of group 13 is -----
 - $ns^1 np^1$
 - $ns^2 np^2$
 - $ns^2 np^1$
 - $ns^2 np^3$

9. Diborane is an electron deficient molecule because it contains ----- valence electrons.

- a) 10
- b) 12
- c) 14
- d) 16

10. The hybridization in inner orbital octahedral complex is -----.

- a) sp^3d
- b) $d^2 sp^3$
- c) sp^3d^2
- d) sp^3

(20)

Que2. Attempt any two of the following

1. What are salient features of VBT. Explain formation of $CoCl_3 \cdot 6NH_3$ according to VBT.
2. Explain the color and magnetic properties of $[Ti(H_2O)_6]^{3+}$
3. Explain the structure, properties and applications of DMG as a chelating agent.

(20)

Que3. Attempt any four of the following

1. Write a short on 'Effective atomic number'.
2. Write a short on 'Structure of diamond'.
3. Give any five points of distinction between double salt and complex salt.
4. Write a short on EDTA
5. Separation of Co^{+2} and Ni^{+2}
6. Allotropes of phosphorus.