

B. Sc. Part II (Semester – IV) (CBCS) (NEP2020) Examination March/April 2024**Balasaheb Desai College, Patan.****Chemistry****Subject Code: 94259****Inorganic Chemistry (Paper –VII)****Day and Date: Monday 08/04/2024****Time: 02.30 p.m. to 04.30 p.m.****Total Marks : 40****Period: 2 Hours****Total Pages : 1****Instructions:**

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Neat diagrams should be drawn wherever necessary.
- 4) Use of scientific calculator and logarithmic table is allowed.

Q1) Choose the correct alternative and rewrite the sentence again.**[08]**

- i) Electronic configuration of Co^{3+} is -----
 a) $[\text{Ar}]3d^7 4s^0$ ☒ b) $[\text{Ar}]3d^6 4s^0$ c) $[\text{Ar}]3d^7 4s^5$ d) $[\text{Ar}]3d^6 4s^2$
- ii) Coordination bond is formed by -----
 a) Sharing of electron pair b) Transfer of electron pair
☒ c) Shared electron pair donated by only one atom d) Absence of electron pair
- iii) Lanthanides are also known as f block elements as electrons are added in ----- subshell.
☒ a) 4f b) 5f c) 5d d) 6s
- iv) Colour of ion is due to,.....
 a) s-d transition b) p-d transition c) s-s transition ☒ d) d-d transition
- v) Paramagnetism is associated with -----
☒ a) Absence of electron b) Neither paired nor unpaired electron
 c) Unpaired electron d) Paired electron
- vi) DMG is a selective reagent for.....
☒ a) Ni^{2+} b) Bi^{3+} c) Ti^{3+} d) Mg^{2+}
- vii) Ligand is the generally electron pairspecies.
 a) Acceptor ☒ b) Donor c) Acceptor as well as donar d) Repelling
- viii) Yellow ammonium sulphide is used in the separation ofgroup.
 a) IIIA b) VI c) IV ☒ d) II

Q2) Attempt any two of the following:**[16]**

- a) Explain electronics structure of 3d block elements.
- b) Give the points of distinction between metal chelate & metal complex.
- c) Difference between Double salt and Complex salt. Discuss the postulates of Werner's theory.

Q3) Attempt any four of the following:**[16]**

- 1) Explain the position of lanthanides in periodic table.
- 2) Explain in brief solubility product with suitable example.
- 3) Distinction between Primary valency and Secondary valency.
- 4) Write short note on Coordination sphere.
- 5) Application of Chelation.
- 6) Oxidation state of 3d block elements.
