

## Chemistry - 12th Class Chemistry Chapter 6 Short Questions Preparation

Q1. Give reason for the development of colours in the transition complexes?

**Ans 1:** In transition example, the d-orbits are responsible for the colour development in their compounds. When these orbitals are involved in bonding, they split up residing in low energy d orbitals absorb a part of the visible light and jump to the high energy d orbital. This process is called d-d transition.

Q2. Give reason that M.P and B.P show maximum value of the middle of 1st transition series.

**Ans 1:** M.P and B.P show maximum of the middle of 1st transition series and then decrease to a minimum level at the end of the series. This trend in M.P correlates well with the strength of binding force.

Q3. Define coordination number.

**Ans 1:** The number of lone pair of electrons provided by the ligand to the central metal atom or ion is called the coordination number of the central metal atom or ion.

Q4. What are Chelate and what they contain?

**Ans 1: Chelate:** When all the donor atoms of a polydentate ligand get coordinated with the same metal ion, a complex is formed which contains one or more rings in its structure and hence is called Chelate.

Q5. What is medium carbon steel. Also write its uses.

**Ans 1:** Medium carbon steel contains 0.2-0.7% Carbon. It is harder than mild steel. It is also malleable and ductile. It is used in making rails, axles, castings.

Q6. Name different forms of iron and which is the purest.

**Ans 1:** Pig iron or cast iron : 2.5 to 4.5% Carbon  
Wrought iron: 0.12 to 0.25 carbon  
Steel : 0.25 - 2.5% Carbon  
Purest form of iron is Wrought iron.

Q7. Why Transition metals show variable valencies?

**Ans 1:** Transition metals exhibit variable valence or oxidation states. They show variable valencies because of the involvement of the unpaired d electron to s electron in bond formation.

Q8. What is meant by Coordination sphere ?

**Ans 1:** The central metal atom or ion along with ligands is called the coordination sphere, it is usually placed in square brackets, it may be anionic, cationic or neutral.

---

Q9. What are paramagnetic and Diamagnetic substance?

**Ans 1:** Substance which are weakly attracted by a strong magnetic field are called paramagnetic substance. Those substance which are weakly repelled by a strong magnetic field are called diamagnetic substance.

---

Q10. Define central metal atom or ion?

**Ans 1:** A metal atom or ion surrounded by a number of ligands is called central metal atom or ion e.g. Cu is the central metal ion.

---