

Questions

1. Explain the type of bonding between transition metals and ligands.
2. Using the following refcodes state whether the ligands shown are monodentate, bidentate or polydentate. (a) FOJBOV01 (b) FAMZEEZ (c) AGOGUY (d) CACWOS (e) HENNET
3. Name the shape of the transition metal complexes using the following refcodes (a) COPGOD (b) BAZSUR (c) FOJBUB02 (d) CACWOS (e) CAQTET
4. For the following molecules state the geometry and if the ligands are polydentate, bidentate or monodentate. (a) ACAJIX (b) BOYHAY01 (c) DADXOW (d) CEFXOA
5. For the refcode CUKRAB01 name the metal complex, state its geometry, identify ligands are polydentate, bidentate or monodentate and state its function.

Answers

1. Metals and ligands form coordinate (dative covalent) bonds. A pair of electrons is still shared however both are donated via the ligand.
2. (a) monodentate (b) bidentate (c) bidentate (d) monodentate (e) polydentate
3. (a) octahedral (b) square planar (c) tetrahedral (d) octahedral (e) linear
4. (a) octahedral geometry, bidentate ligands (b) octahedral geometry, bidentate and monodentate ligands (c) square planar, polydentate ligand. (d) octahedral, polydentate and monodentate.
5. The molecule is Cisplatin, it is square planar, has monodentate ligands and is an anti-cancer drug.