

- 1) Predict whether the pH of each of the following salts placed into water is acidic (<7), basic (>7), or neutral. If you answer acidic or basic, justify your answer by writing a chemical reaction.

a. NaOCl

pH > 7 (basic)



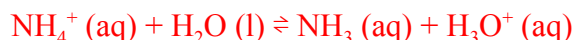
b. KCN

pH > 7 (basic)



c. NH_4NO_3

pH < 7 (acidic)



- 2) (a) Write the name/formula of the following coordination compounds. (b) What is its coordination number? (c) What is its shape? (d) Is it a chelate? If so, identify the chelating ligands.

a. $[\text{Ni}(\text{NH}_3)_3\text{O}]\text{Br}_2$

Triammineoxonickel (IV) bromide

Coordination number = 4

Tetrahedral or square planar are acceptable

Not a chelate

b. Dihydroxooxalatocobaltate (III) ion



Coordination number = 4

Tetrahedral or square planar are acceptable

Chelate; oxalate is the chelating ligand

c. $\text{K}[\text{Cu}(\text{en})_2(\text{CN})_2]$

Potassium dicyanobis(ethylenediamine)cuprate (I) or

Potassium dicyanobis(en)cuprate (I)

Coordination number = 6

Octahedral

Chelate; en is the chelating ligand