9.3: Unit 9 Practice Problems

Exercise 1

An associative mechanism is favored when

a) the oxidation state of the metal is high

b) the coordination number of the metal is low

c) the complex has bulky ligands

d) the metal –ligand bonds are labile.

Answer

b) the coordination number of the metal is low

Exercise 2

Which of the following metal-ligand bonds would you expect to have the highest thermodynamic stability?

a) Hg-S

b) Hg-O

c) Hg-N

d) Hg-F

Answer

a) Hg-S

Exercise 3

Chelate complexes are thermodynamically particularly stable because

a) The substitution of a simple ligand by a chelating ligand is enthalpically particularly favorable.

b) The substitution of a simple ligand by a chelating ligand is entropically particularly favorable.

c) Chelating ligands are more inert than simple ligands.

Answer

b) The substitution of a simple ligand by a chelating ligand is entropically particularly favorable.

Exercise 4

What is true about complexes that undergo metal to ligand charge transfer?

a) The metal ion has no or few d electrons

b) The ligands are good pi-acceptors

c) The metal ions have a high charge.

Answer

b) The ligands are good pi-acceptors