CH 221
Sample Quiz #4 Name: _____ Lab Section: _____

Be sure to show all work, use the correct number of significant figures, circle final answers and use correct units in all problems.

1.Give the number of **core** *and* **valence** electrons in the following elements: Li, Te, and Ga. (6 pts)

2.Write Lewis Dot structures for the following molecules: BeI_2, CBr_2Cl_2, and AsI_3. (6 pts)

3.Draw and name the electron-pair geometry and molecular shape for AlF_3 and AlF_4^-. (4 pts)

4.Determine the formal charge on each atom in the molecule ClF_2^{-1}. (4 pts)

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Answers

1.Give the number of **core** *and* **valence** electrons in the following elements: Li, Te, and Ga. (6 pts)

Li: 2 core, 1 valence
Te: 46 core, 6 valence
Ga: 28 core, 3 valence

2.Write Lewis Dot structures for the following molecules: BeI_2, CBr_2Cl_2, and AsI_3. (6 pts)

BeI_2: linear EPG and MG, no lone pairs
CBr_2Cl_2: Tetrahedral for both EPG and MG, lone pairs around outer atoms
AsI_3: tetrahedral EPG, trigonal pyramid MG, 1 lone pair on As

3.Draw and name the electron-pair geometry and molecular shape for AlF_3 and AlF_4^-. (4 pts)

AlF_3: trigonal planar for both EPG and MG, no lone pairs
AlF_4^{-1}: tetrahedral for both EPG and MG

4.Determine the formal charge on each atom in the molecule ClF_2^{-1}. (4 pts)

ClF_2^{-1}: EPG is trigonal bipyramid, MG is linear, Cl has 3 lone pairs
Cl: 7 - 6 - 2 = -1
(both) F: 7 - 6 - 1 = 0