

HomeWork 15

Due Monday 4 Dec

Your name: Answers _____/20

1. Provide the correct, abbreviated electron configuration for: (1 pt each)

a) Mg $[\text{Ne}] 3s^2$

b) S $[\text{Ne}] 3s^2 3p^4$

2. For the transition elements below, provide the correct abbreviated, d-switched and preferred filled/half-filled/empty electronic configurations: (2 pts ea/6 pts total)

a) Cr $[\text{Ar}] 3d^5 4s^1$

b) Fe^{3+} $[\text{Ar}] 3d^5 4s^0$

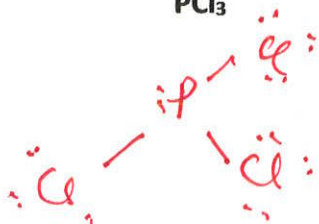
c) V $[\text{Ar}] 3d^5 4s^0$

3. Use the simple octet rule to predict the bonding and lone pairs for the molecules below: If present, indicate formal charges on any relevant atomic sites. (2 pts ea/6 pts total)

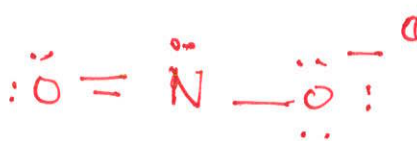
SiO_2



PCl_3

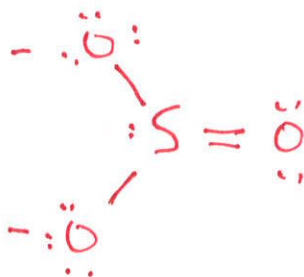


NO_2^-

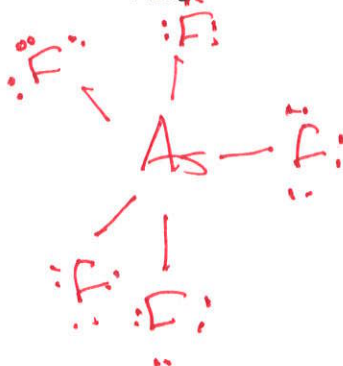


4. Predict the most likely Lewis structure for the molecules below where the octet rule can be broken to minimize formal charge. Include all lone pairs and if present, formal charges. (2 pts each/6 pts total)

SO_3^{2-}



AsF_5



POCl_3

(P in the middle With O and Cl attached to P only)

