

MT3 practice KEY

Question	Answer	Comment
1	B	Write the electron configuration for the neutral atom first. Electrons are removed from orbitals with highest principal quantum number.
2	D	
3	E	
4	D	Based on Mastering Chemistry (MC) question. Discussed on pg. 253.
5	A	This is question 7.10.
6	B	Be able to explain particular ionization energies or electron affinity values. Charges and distance are the important factors.
7	D	Rankings may include ions.
8	B	
9	A	Based on laboratory experiment (simulation).
10	E	In-class demonstration.
11	C	
12	E	
13	E	Historical context for bonding theories.
14	A	
15	A	Hydrogen's electronegativity is similar to boron or carbon.
16	A	One set of lone pair electrons on the central atom.
17	A	If a (-1) anion, an electron has been added. A (-2) anion has two electrons added, etc.
18	C	Draw the Lewis structure and consider possible resonance.
19	E	Interpretation of bond enthalpy. Based on section 8.8 (and page 319). This was used on a MT last year...most common <b>incorrect</b> responses were A & B. Why they are wrong?
20	C	Lewis structure → electron geometry → molecular geometry. You should be able to quickly identify the molecular geometry for each of these examples.
21	C	Based on MC question. X-axis is distance between H-atoms.
22	E	Lewis structure → electron geometry → molecular geometry, then examination of bond-dipoles.

23	E	Lewis structure → electron geometry → molecular geometry.
24	B	Lewis structure → electron geometry → molecular geometry. In the trigonal bipyramidal structure lone pairs go equatorially.
25	B	An oxygen atom is initially $2s^2 2p^4$ . To form four electron domains $sp^3$ hybrid orbitals are formed. Both of the bonds are sigma. All of the p-orbitals are involved in the hybridization.
26	Xe	A total of 6 electron domains; 4 of them are bonding. This requires 8 valence electrons on the central atom.