Lewis Dot Structure <u>Mega</u> Worksheet

1) What is the octet rule? Explain its role in bonding between atoms.

2) Indicate how many electrons must be gained or lost by each of the following atoms to achieve a stable electron configuration, e.g. 3 lost, 2 gained, etc.?

a) Sr **b)** Sb **c)** Si **d)** S **e)** Se **f)** Xe

3) Which of the following pairs of elements will **<u>not</u>** form ionic compounds? Explain why or why not for each.

a) Sulfur & xenon **b)** Sodium & calcium **c)** Strontium & sulfur **d)** Selenium & chlorine

4) Draw the Lewis electron dot structures of the following atoms:

a) Sr **b)** Sb **c)** Si **d)** S **e)** Se **f)** Xe

5) Draw the Lewis dot structures of the following compounds/molecules

a) Sodium chloride (NaCl)
b) Iodine gas (I_2)
c) Hydrogen cyanide (HCN)
d) Hexene (C_6H_{12}) Connect carbons together, and then hydrogens bond to carbons
e) Hydrogen peroxide (H_2O_2) H O O H
f) Carbon tetrafluoride (CF_4)
g) Hexane (C_6H_{14}) Connect carbons together, & then H bond to C
h) Sulfur hexafluoride (SF_6)
i) Cyanogen (C_2N_2) N C C N

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Draw Lewis structures for the following:

6) PBr_3 **7)** N_2H_2 **8)** CH_3OH **9)** NO_2^{-1} **10)** C_2H_4

11) Write the Lewis dot structure for each of these molecules. Some are easy, some are not. If you get really stuck, skip it and move onto the next one. Come back to it later, or ask for help. A few violate the octet rule.

a) CF_4	**d)** HF	**g)** NBr_3	**j)** C_2H_2	**m)** CO	**p)** H_2S	**s)** CH_3Br
b) AsH_3	**e)** OF_2	**h)** N_2	**k)** CS_2	**n)** BF_3	**q)** H_2O_2	**t)** F_3NO
c) H_2CO	**f)** CH_3OH	**i)** BrF_5	**l)** SF_6	**o)** HCN	**r)** HNC	

12) Write the Lewis dot structure for each of these ions.

a) ammonium	**c)** hypochlorite	**e)** hydronium	**g)** hydroxide	**h)** nitride (N^{3-})	**j)** $GaBr_4^-$
b) cyanide	**d)** carbonate	**f)** OCN^- (C = central atom)		**i)** peroxide	**k)** $P_2H_6^{2+}$

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