

Chemistry 2541

Fall Semester 2010

Quiz 1

(25 points)

September 15, 2010

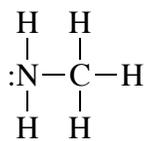
Printed Name (*Last*, First) _____

Good Luck!

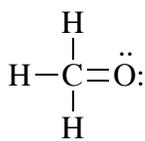
1. (2) Circle the element that has the following ground state electron configuration: $1s^2 2s^2 2p^4$:

H He Li Be B C N O F Ne Na Mg Al Si P S Cl Ar

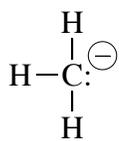
2. (4) Which of the following structural formulas (A-E) are **correct Lewis structures** (place letters corresponding to the correct Lewis structures in the answer box, no partial credit):



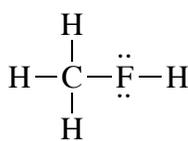
A



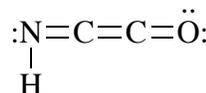
B



C



D



E



answer

3. (2) What is an approximate **F-B-F bond angle** in the molecule of BF_3 according to VSEPR ?

(circle correct answer): **109.5°** **180°** **160°** **120°** **90°** **60°** **45°**

4. (3) Circle the structure of the compound that has **dipole moment $\mu = 0$ D**:

CH_3OH

NH_3

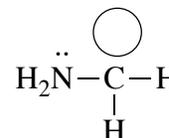
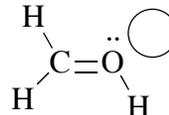
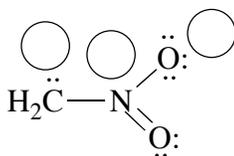
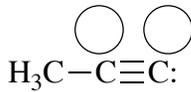
H_2O

CHCl_3

CH_2Cl_2

CF_4

5. (10 pts) Assign correct formal charges to atoms by placing **0**, **-**, or **+** in each circle (1 pt each):



6. (2) Circle the structure of a compound that has the functional group of **carboxylic acid**:

$\text{CH}_3\text{OCH}_2\text{CH}_2\text{OH}$

$(\text{CH}_3)_3\text{CCO}_2\text{H}$

$\text{CH}_3\text{CO}_2\text{CH}_3$

$\text{CH}_3\text{OCH}_2\text{CHO}$

$\text{NH}_2\text{CH}_2\text{CH}_2\text{OH}$

7. (2) Circle the formula of the **ionic** compound:

CF_4

BH_3

NH_3

CH_3OH

CH_3OLi

NF_3

CO_2

HF

Overall Score: _____