

Key

Chemistry 2541, Fall 2017

Quiz 1

(30 points)

Important notes:

- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be posted on eGradebook; graded Scantron forms will not be returned to students.

Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

1. Which element has the following electronic configuration: $1s^2 2s^2 2p_x^2 2p_y^1 2p_z^1$?

A) C

B) N

C) O

D) F

2. Which of the following pairs of elements will form an ionic compound?

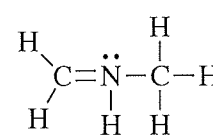
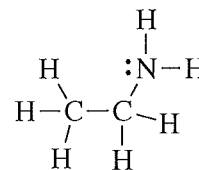
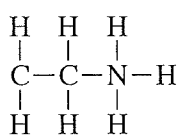
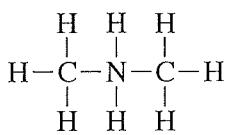
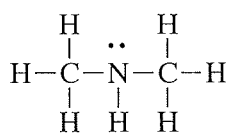
A) Be and O

B) F and C

C) O and N

D) F and H

3. Which two of the following structures represent correct Lewis structures of a compound with molecular formula C_2H_7N ?



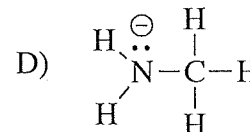
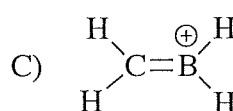
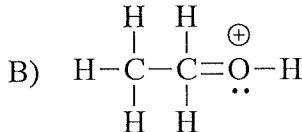
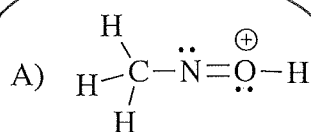
A) 1 and 3

B) 2 and 4

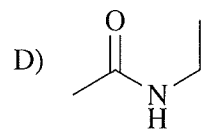
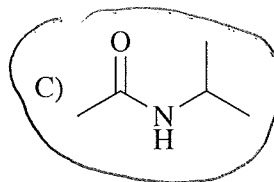
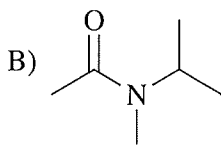
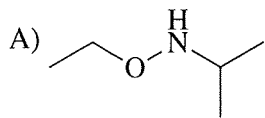
C) 3 and 5

D) 1 and 4

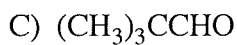
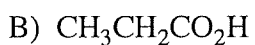
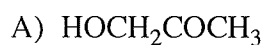
4. Which one of the following polyatomic ions is a correct Lewis structure with correct formal charges?



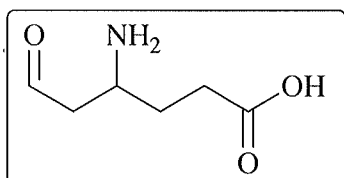
5. Which of the **line-angle** structures corresponds to the **condensed** structural formula shown in the box?



6. Which one of the following compounds has the functional group of an **ester**?



7. What are the names of **functional groups** in the following molecule?



A) ketone, amine, carboxyl

B) aldehyde, amide, hydroxyl

C) aldehyde, amine, carboxylic acid

D) carbonyl, ammonium, carboxyl

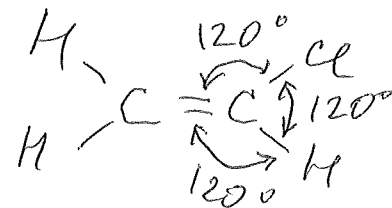
8. What is the approximate **Cl-C-H** bond angle in vinyl chloride $\text{CH}_2=\text{CHCl}$?

A) 90°

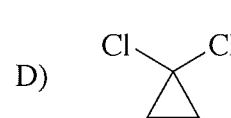
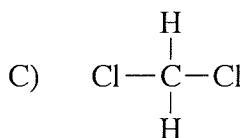
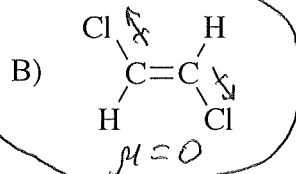
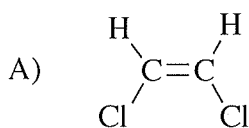
B) 120°

C) 109.5°

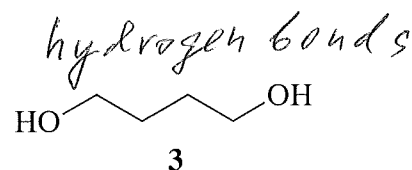
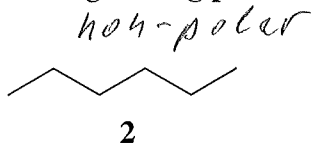
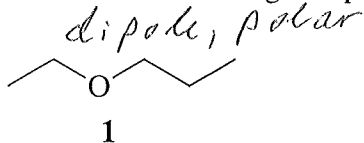
D) 180°



9. Which of the following molecules has **dipole moment $\mu = 0$** D?



10. Sort the following compounds by increasing **boiling point**.



A) 1 (highest) > 2 > 3 (lowest)

B) 2 (highest) > 3 > 1 (lowest)

C) 3 (highest) > 1 > 2 (lowest)

D) 2 (highest) > 2 > 1 (lowest)