HOMEWORK #1

CHEM 121, section 1,
Background and Chp. 12
Homework Due 1

Printed Name: Key

Group Name: _____

1. (2 pts. total) Circle the correct compound type (ionic or covalent) for the following:

formula	compound type
a) NBr_3	(ionic or covalent)
b) NaCl	(ionic or covalent)
c) C_2H_5OH	(inorganic or organic)
d) NH_4NO_3	(inorganic or organic)

2. (1 pts. total) For the atoms and ions below, circle the correct ground state valence electron configuration of carbon in core format:

a) Carbon (C): $2s^2, 2p_x^1 2p_y^1 2p_z^1$

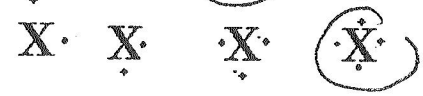
b) Carbon (C): $4s^1$ or $3s^2, 3p^6$

c) Carbon (C): [Ne] $3s^2, 3p^3$

d) Carbon (C): [Ne] $2s^2, 2p_x^2 2p_y^1 2p_z^1$

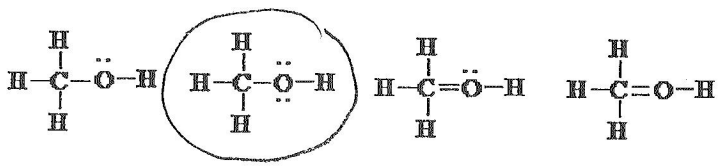
3. (1 pts.) Circle the Lewis structures of the following atoms:

a) N 

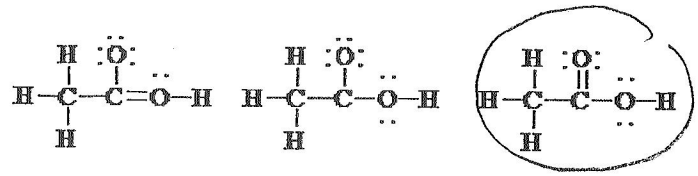
b) C 

4. (2 pts. total) Circle the correct Lewis structure for following compounds:

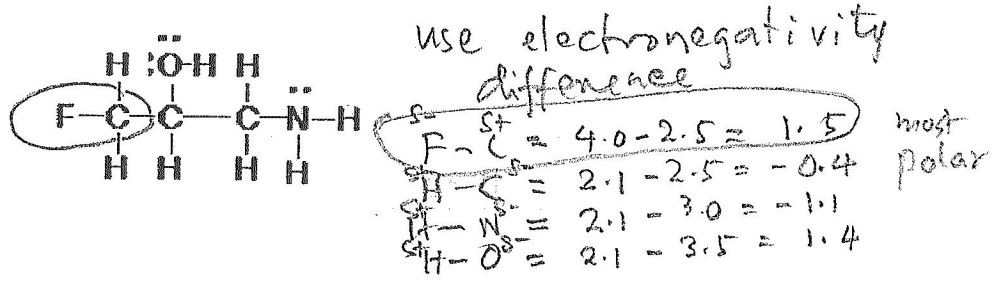
a) CH_3OH



a) CH_3COOH



5. (1 pts.) Circle the most polar bond in the following molecule:

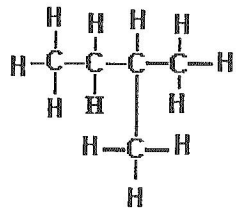


6. (3 pts.) Name the functional group in each of the following molecules

Molecule	Functional group
$CH_3CH_2CH_2OH$	alcohol - ol
$CH_3CH_2CH_2OCH_2CH_3$	ether
$CH_3CH_2CH_2Cl$	halide - chloride
$CH_3CH_2CH_2CHO$	Aldehyde
$CH_3CH_2CH_2CH_2COOH$	carboxylic acid
$CH_3CH_2CH_2COOCH_2CH_3$	ester

7) (3 pts) Give the formulas for each of the following:

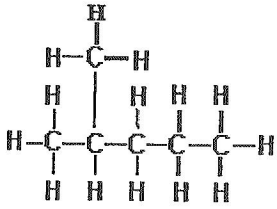
a)



i) Molecular formula: C_5H_{12}

ii) Condensed formula: $CH_3CH_2CH(CH_3)_2$

b)



i) Molecular formula: C_6H_{14}

ii) Condensed formula: $CH_3CH(CH_3)CH_2CH_2CH_3$

iii) Line-angle formula:

8) (2 pts) Give the following for an straight alkane with five carbons atoms

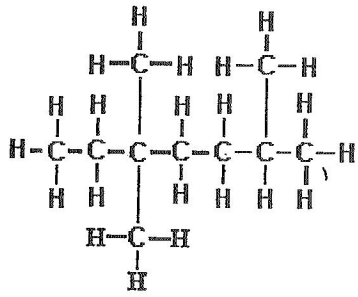
i) Molecular formula: C_5H_{12} C_nH_{2n+2}

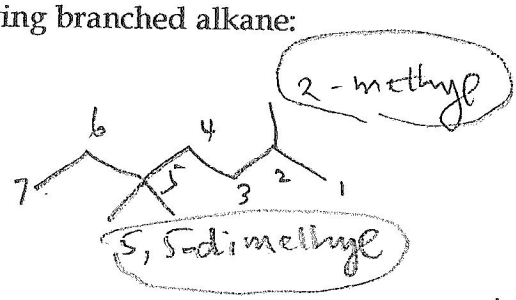
ii) Condensed formula: $CH_3CH_2CH_2CH_2CH_3$

iii) Line-angel formula:

iv) IUPAC name: Pentane

9) (2 pts) IUPAC name of the following branched alkane:





2,5,5-trimethyl heptane

10) (3 pts) Give the names of following alkyl groups:

Name	Alkyl Group	Name	Alkyl Group
i) propyl	$-CH_2CH_2CH_3$	iv) isobutyl	$-CH_2CHCH_3$ (CH$_3$)
ii) isopropyl	$-CHCH_3$ (CH$_3$)	v) sec-butyl	$-CHCH_2CH_3$ (CH$_3$)
iii) butyl	$-CH_2CH_2CH_2CH_3$	vi) tert-butyl	$-CCH_3$ (CH$_3$, CH$_3$)