Chemistry 30 Unit 3 Hand In Assignment

This hand in assignment covered content learned in sections 3.1-3.3. When naming compounds, double check you have hyphens and commas in the right locations and your numbering is correct. When drawing compounds, ensure you are writing out the ***complete structural formula*** *(including all H atoms).*

1. Identify the following compounds as organic or inorganic (0.5 each):

a. sodium hydroxide (NaOH) _____

b. lactose ($C_{12}H_{22}O_{11}$) _____

c. ethanol (C_2H_6O) _____

d. Magnetite (Fe_3O_4) _____

2. Identify the following compounds as a(n) alkane, alkane, alkyne, alcohol, aldehyde, ketone, carboxylic acid, or an ester. (1 each)

a. A compound is found to be polar and acidic. _____

b. These compounds have an odor and are created by combining two other organic molecules. _____

c. This type of compound contains only C single bonded to other C and H atoms. _____

d. These types of compounds are polar, which allows them to mix well with water, but they are also very flammable. _____

3. Circle the compound that has the higher boiling point and explain why we see the differences we do (2 marks each).

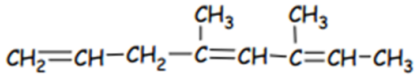
a. ethane vs. ethene

b. heptyne vs. pentyne

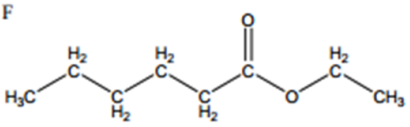
c. octane vs. octanal

4. Write the correct IUPAC name for the following compounds (1 each):

a.



F



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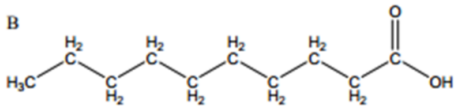
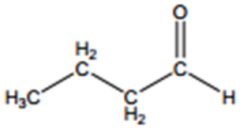
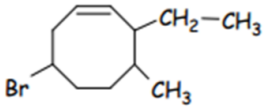


g.

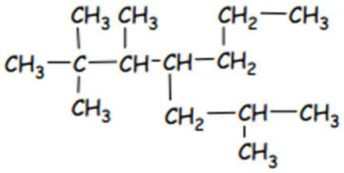


c.

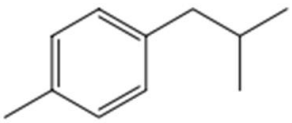


h.

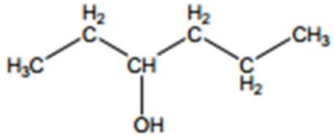
d



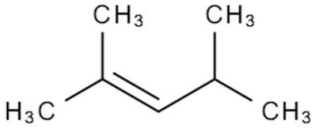
i.



e.



j.



5. Draw the correct structural formula (not condensed) for the following molecules (1 each):

a. 4-propyloctane

b. 1-chloro-3-ethyl-5-methylbenzene

c. 1, 2, 3, 4, 5, 6-hexamethylcyclohexane

d. 3, 5-dichloro-3-methyl-1-hexyne

e. Bromomethane

f. hexanal

g. ethyl pentanoate

h. 1-propanol

i. 2-ethyl-2-methylbutanoic acid

j. Make up and name your own compound :) (2)