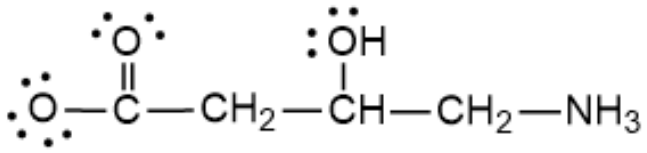
1 Add in any missing formal charges on the following Lewis structure (all electrons are shown). What is the NET (overall) charge?



Identify the type of bonding present (covalent, ionic, or both).

2 H_2SO_4

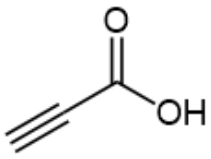
3 CH_3CO_2Li

Draw a complete Lewis structure for each:

4 NaCN

5 NH_4OCH_3

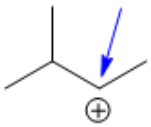
6

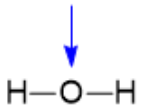


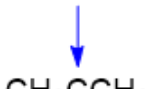
Number of pi bonds _____

Number of sigma bonds _____

7 Identify the hybridization for each of the following indicated atoms.







8 Describe the hybridization and geometry about the bolded atom for each.

1) sp	a) linear
2) sp^2	b) bent
3) sp^3	c) tetrahedral
	d) trigonal planar
	e) pyramidal

$CH_3\mathbf{N}H_2$

$\mathbf{C}H_3OH$

$CH_3\mathbf{O}CH_3$

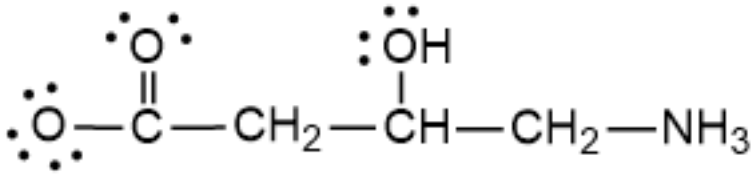
$CH_3\mathbf{C}CH$

9 Provide a 3D sketch of the given compound.

$CH_3CH_2CH_2CH_2CH_2OH$

1

Add in any missing formal charges on the following Lewis structure (all electrons are shown). What is the NET (overall) charge?



A) 0

B) +1

C) +2

D) -1

E) -2

2

The following has what type(s) of bonding?

H_2SO_4

A) ionic bonding only

B) covalent bonding only

C) both ionic and covalent bonding

D) none of the above

3 The following has what type(s) of bonding?

CH_3CO_2Li

A) ionic bonding only

B) covalent bonding only

C) both ionic and covalent bonding

D) none of the above

4 Which of the following represents the correct Lewis structure of sodium cyanide, NaCN?

A) Na—C≡N

B) Na—C≡N:

C) $\overset{\oplus}{\text{Na}}$:C≡$\overset{\ominus}{\text{N}}$:

D) $\overset{\oplus}{\text{Na}}$ $\overset{\ominus}{\text{:}}$C≡N:

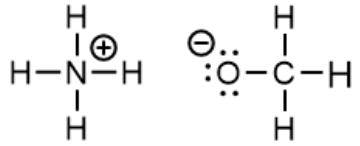
E) $\overset{\oplus}{\text{Na}}$ C≡$\overset{\ominus}{\text{N}}$

5

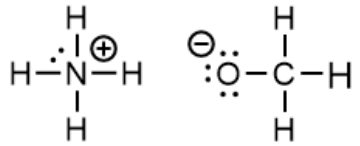
NH_4OCH_3

Which of the following represents the correct Lewis structure of the given condensed formula?

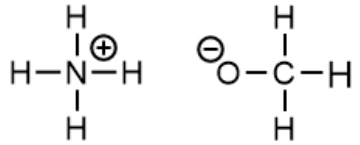
A)



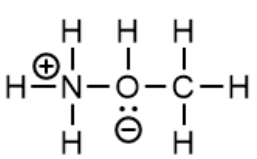
B)



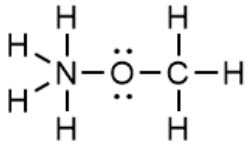
C)



D)

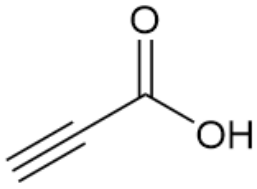


E)



6

The following compound contains how many pi bonds, and how many sigma bonds?



A) 1 π bond

B) 2 π bonds

C) 3 π bonds

D) 4 π bonds

E) 5 π bonds

A) 3 σ bonds

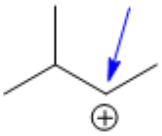
B) 4 σ bonds

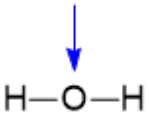
C) 5 σ bonds

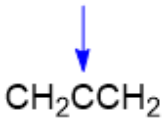
D) 6 σ bonds

E) 7 σ bonds

7 Identify the hybridization for each of the following indicated atoms.



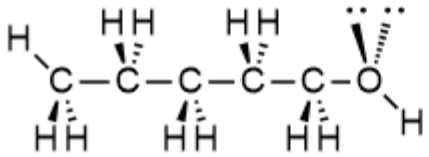




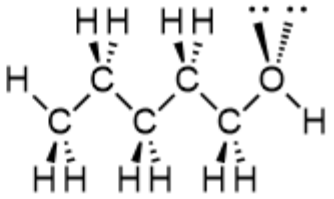
A)	sp^3	sp	sp
B)	sp^2	sp^3	sp
C)	sp^3	sp	sp^2
D)	sp^3	sp^3	sp^2
E)	sp^2	sp^2	sp^2

9 Which of the following is an accurate 3-D representation of the given compound? $CH_3CH_2CH_2CH_2CH_2OH$

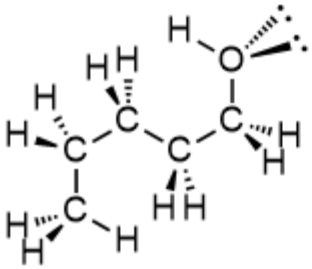
A)



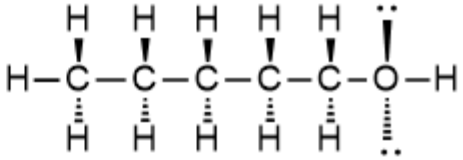
B)



C)



D)



E) None of the above.