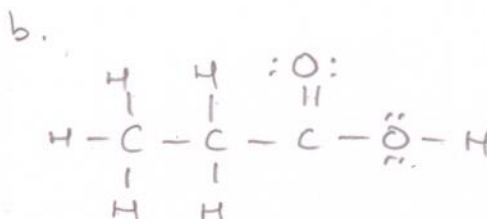
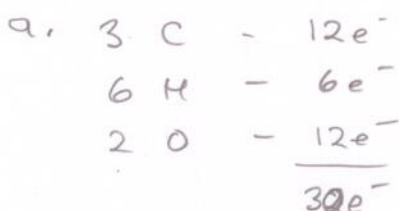


Quiz 2 (30 points)

Name Key

1. Consider the molecular formula  $C_3H_6O_2$ . (10 points)

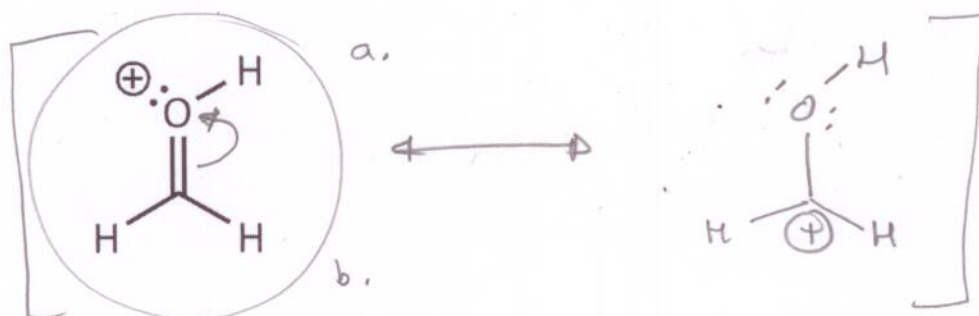
- How many valence electrons are present?
- Draw a **Lewis** structure for this molecule (there is more than one). Show all lone pairs of electrons.



many other possibilities

3. Consider the structure shown below.

- Show the other resonance structure and use electron pushing to show how you arrived at it.
- Circle which form is the *major* form (the most reasonable).
- What is the hybridization of the oxygen atom?
- In the structure shown below, what type of atomic orbital is the lone pair of electrons in? (20 points)



major form  
since it shows more bonds  
and all atoms have octets

- The oxygen is  $sp^2$ -hybridized
- The lone pair is in an  $sp^2$  hybridized atomic orbital

Note that in the resonance form, one pair of  $e^-$  is in an  $sp^2$  orbital - the other is in an  $2p$  orbital!