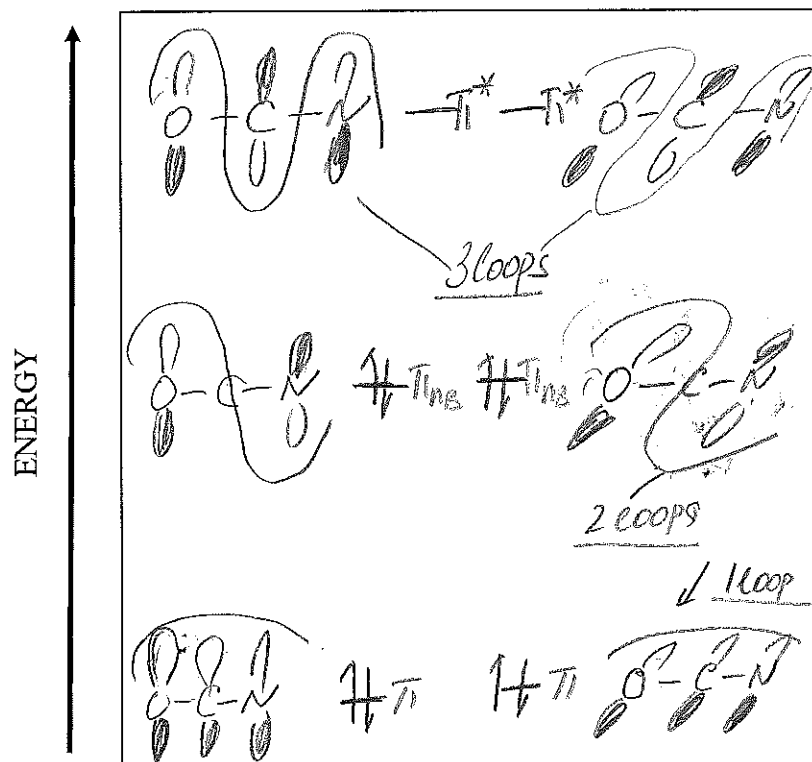
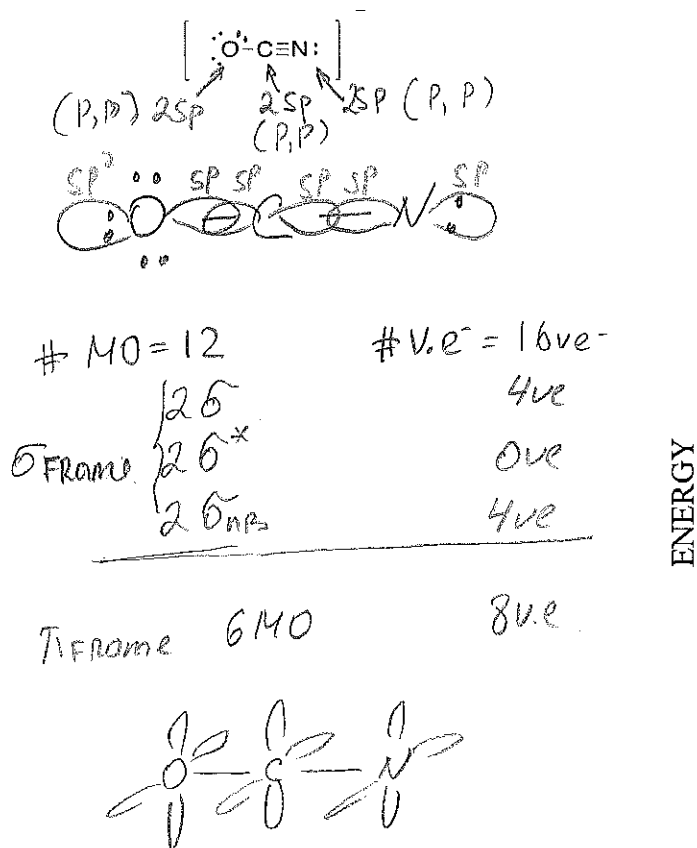


Thursday: key

1. (10 points) In the box, draw a  $\pi$  molecular energy diagram for  $\text{OCN}^-$ .

3 points  
 $\pi$  MO Energy Diagram



a. How many electrons are in the  $\sigma$  non-bonding molecular orbitals?

$4e^-$

b. How many electrons are in the  $\pi$  bonding orbitals?

$4e^-$

c. How many electrons are in the  $\pi$  antibonding orbitals?

$0e^-$

d. How many electrons are in the  $\pi$  non-bonding orbitals?

$4e^-$

e. How many electrons are shared between the oxygen and the carbon?

$4e^-$

f. How many unshared electrons are localized on the nitrogen?

$4e^-$

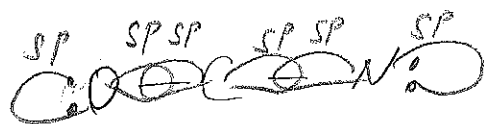
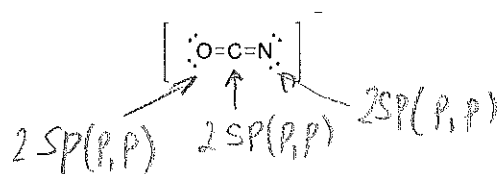
g. How many electrons are shared between the nitrogen and the carbon?

$4e^-$

1 point each RORW

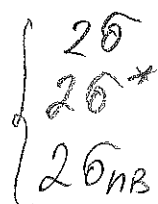
1. (10 points) In the box, draw a  $\pi$  molecular energy diagram for  $\text{OCN}^-$ .

3 points

 $\pi$  MO Energy Diagram

# MO: 12

# ve = 16ve

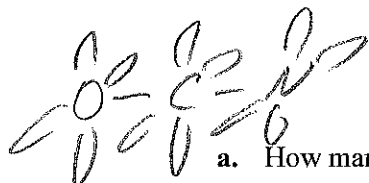


4ve

0ve

4ve

ENERGY

 $\pi$  from 6 MO 8vea. How many electrons are in the  $\sigma$  non-bonding molecular orbitals?4e<sup>-</sup>b. How many electrons are in the  $\pi$  bonding orbitals?4e<sup>-</sup>c. How many electrons are in the  $\pi$  antibonding orbitals?0 e<sup>-</sup>d. How many electrons are in the  $\pi$  non-bonding orbitals?4e<sup>-</sup>

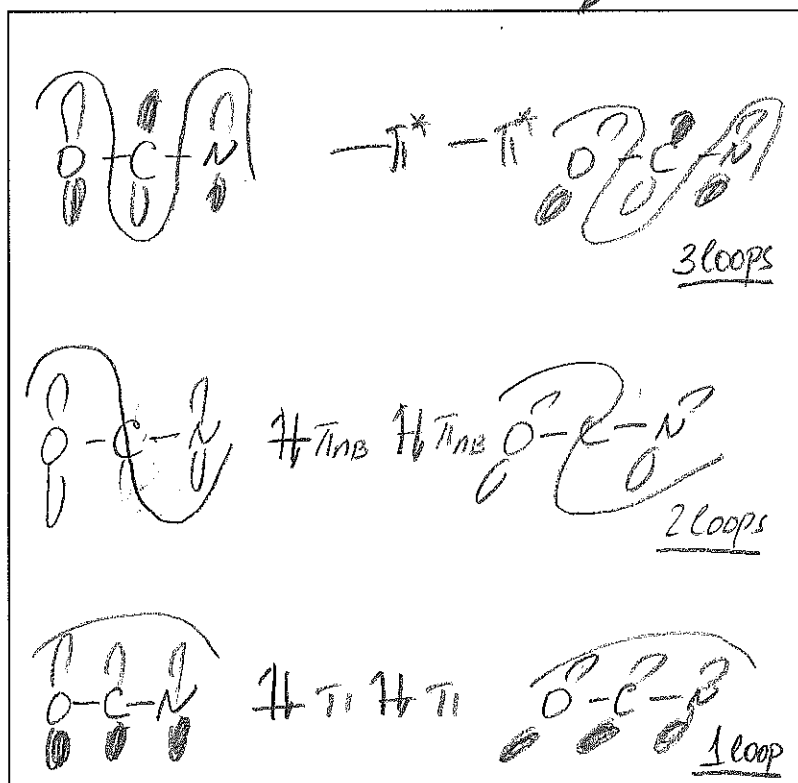
e. How many electrons are shared between the oxygen and the carbon?

4e<sup>-</sup>

f. How many unshared electrons are localized on the nitrogen?

4e<sup>-</sup>

g. How many electrons are shared between the nitrogen and the carbon?

4e<sup>-</sup>

1 point each row