

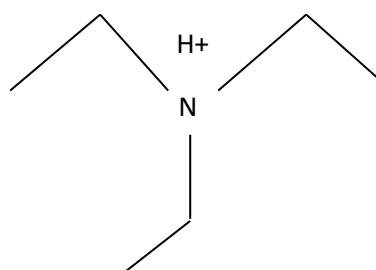
1. a) Sulfide
- b) Aldehyde
- c) Epoxide
- d) Amine
- e) Ester

2. a) Carbon $\rightarrow$ 1- (C^-), Oxygen $\rightarrow$ 1- (O^-)

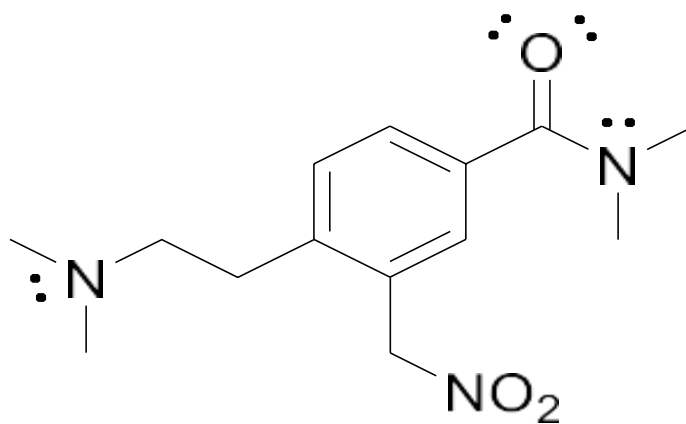
b) Bromide $\rightarrow$ 1+

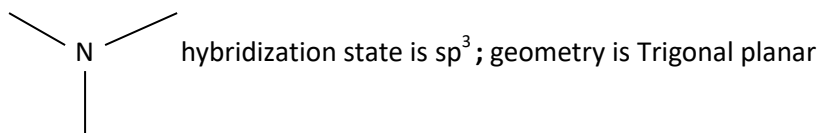
c) Phosphate $\rightarrow$ 3-

3)

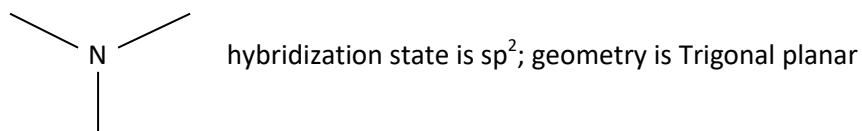


4)

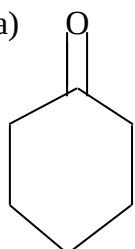




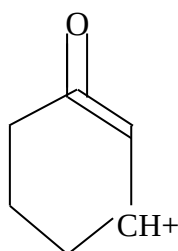
— NO_2 hybridization state is sp^2 ; geometry is Trigonal pyramidal



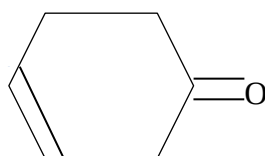
5) a)



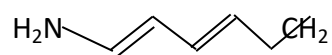
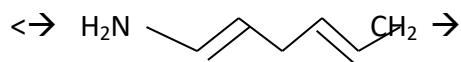
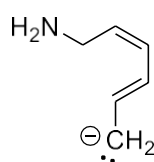
→ Cyclohexanone resonates with the two structures below:



And



b)



c) C is the best resonance structure as it upholds the octet rule on every atom. Compared to the other two C has negative charge on the most electronegative atom (oxygen) and positive charge on the least electronegative atom. It is followed by B then lastly A.

