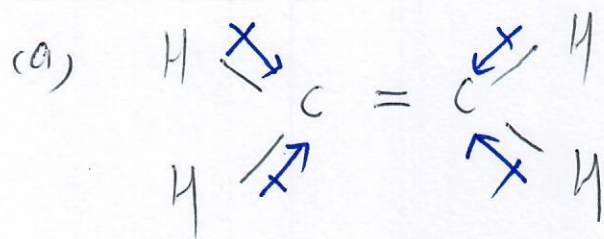
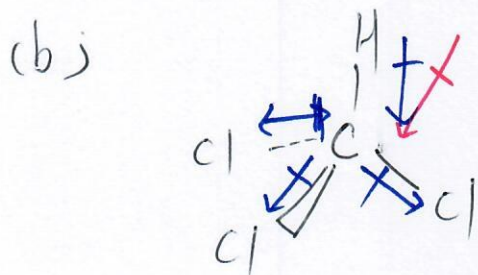


Organic chemistry chapter 2

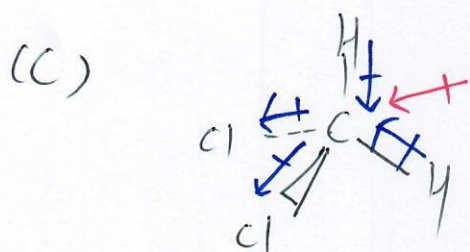
problem 2-6.



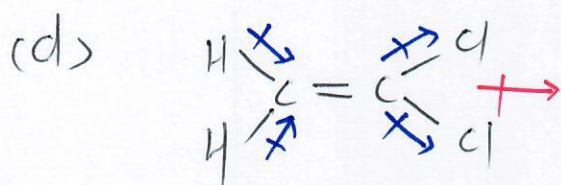
0 dipole moment.



net dipole moment.

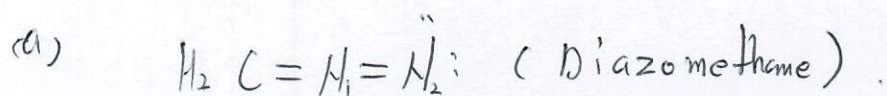


net dipole moment.



net dipole moment.

Problem 2-7.-1



Formal charge of C

$$= (\# \text{ of valence electron}) - \left(\frac{\# \text{ of bonding electrons}}{2} \right) - (\# \text{ nonbonding electrons})$$

$$= 4 - \frac{8}{2} - 0$$

$$= 0$$

Formal charge of N_1

$$= 5 - \frac{8}{2} - 0 = +1$$

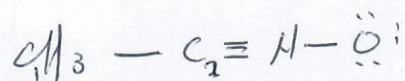
Formal charge of N_2

$$= 5 - \frac{4}{2} - 4 = -1$$



problem 2-7-2.

(b) Acetonitrile oxide.



Formal charge of C_1

$$= (\# \text{ of valence electrons}) - \left(\frac{\# \text{ of bonding electrons}}{2} \right) - (\# \text{ nonbonding electrons})$$

$$= 4 - \left(\frac{8}{2} \right) - 0 = 0$$

Formal charge of C_2

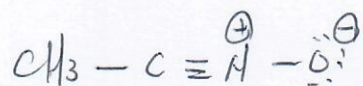
$$= 4 - \left(\frac{8}{2} \right) - 0 = 0$$

Formal charge of N

$$= 5 - \frac{8}{2} - 0 = +1$$

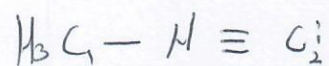
Formal charge of O

$$= 6 - \frac{2}{2} - 6 = -1$$



problem 2-7-3

c) Methyl isocyanide.



Formal charge of C_1

$$= 4 - \frac{8}{2} - 0 = 0$$

Formal charge of N

$$= 5 - \frac{8}{2} - 0 = +1$$

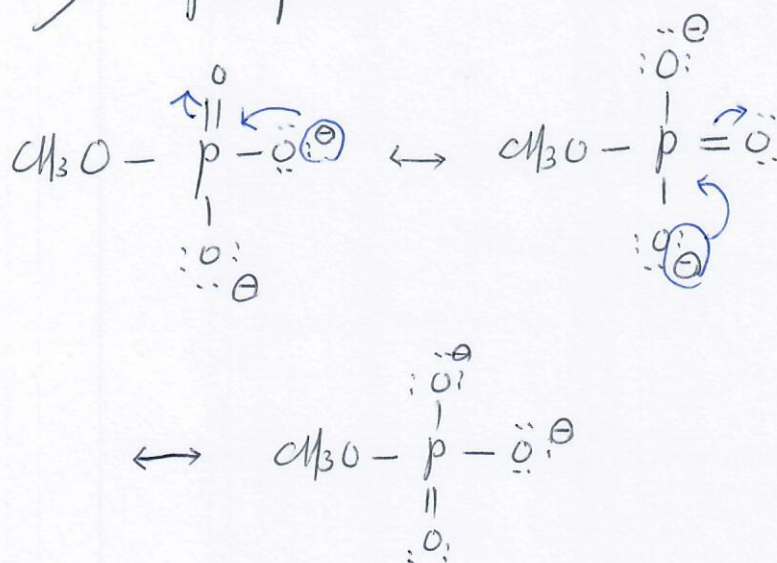
Formal charge of C_2

$$= 4 - \frac{6}{2} - 2 = -1$$

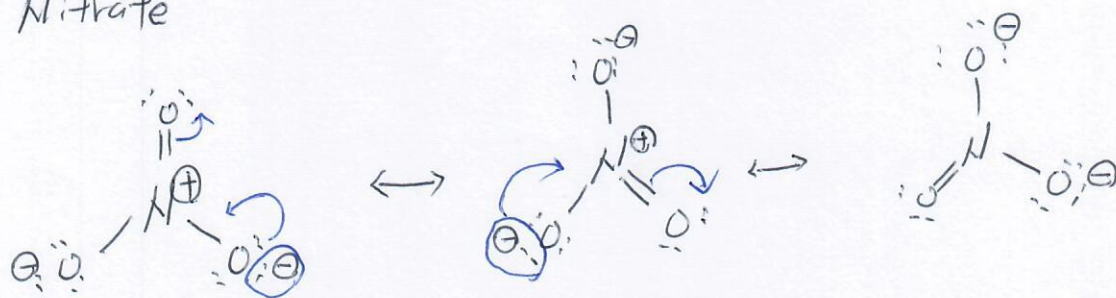


Problem 2-10.

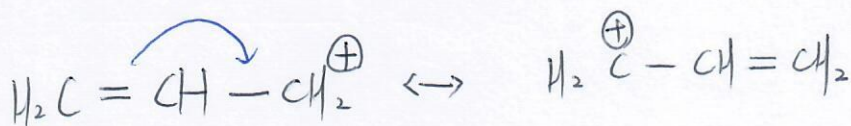
(a) Methyl phosphate²⁻



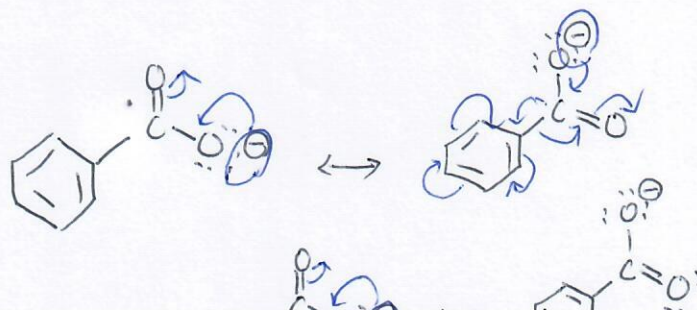
(b) Nitrate⁻



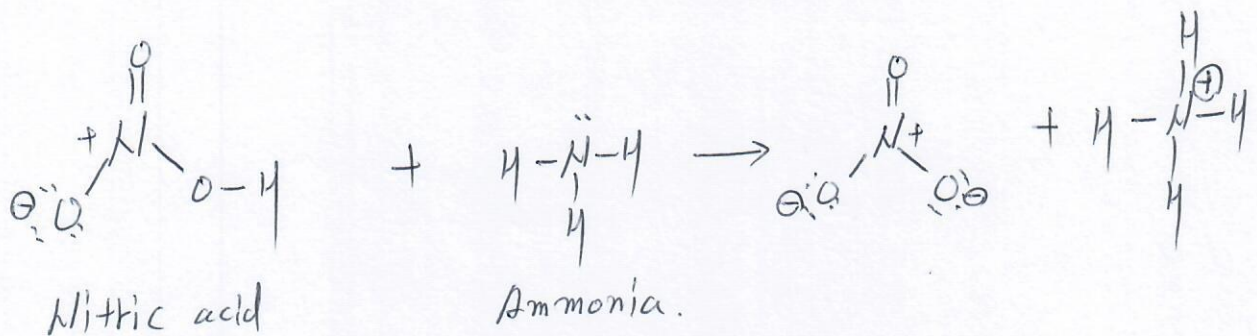
(c) Allyl⁺



(d) ~~Benzoate~~
Benzoate



Problem 2-11



Proton Donor

Acid

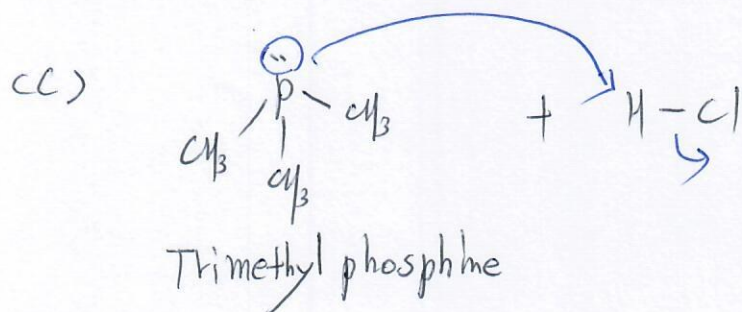
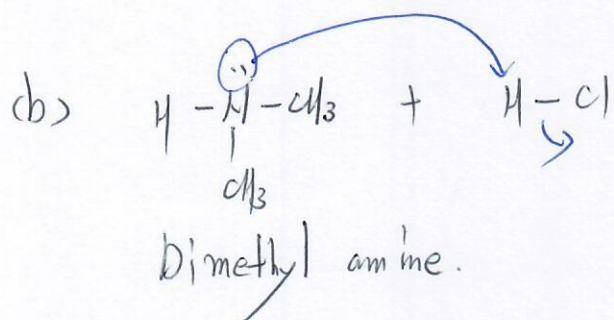
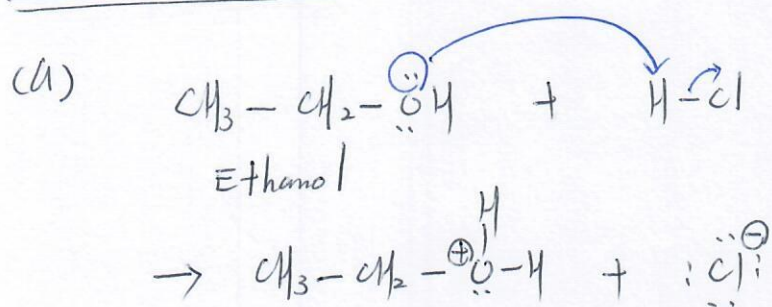
Proton Acceptor. loses a proton. gains a proton

Base.

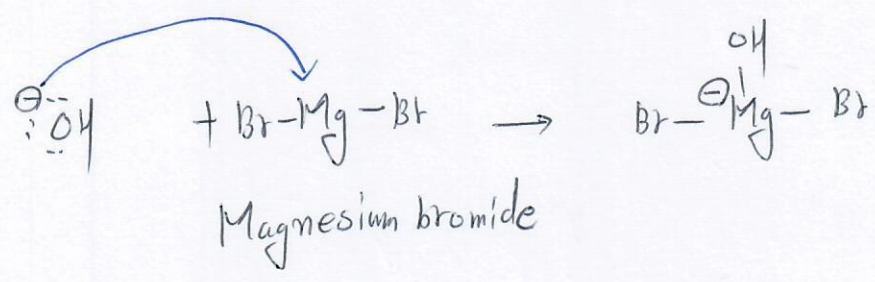
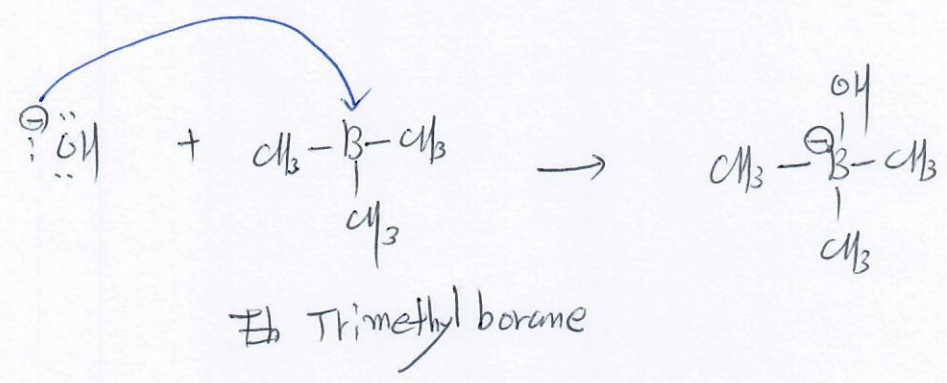
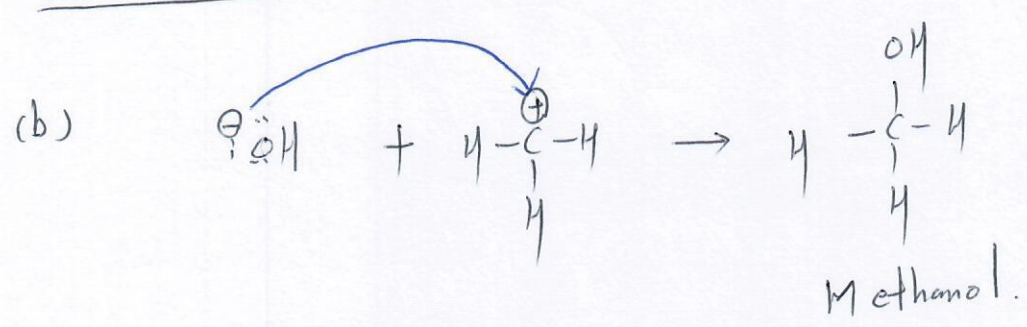
conjugated
base

conjugate
acid.

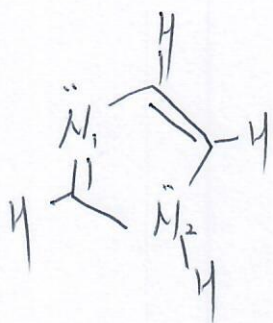
Problem 2-17 -1



problem 2-17-2



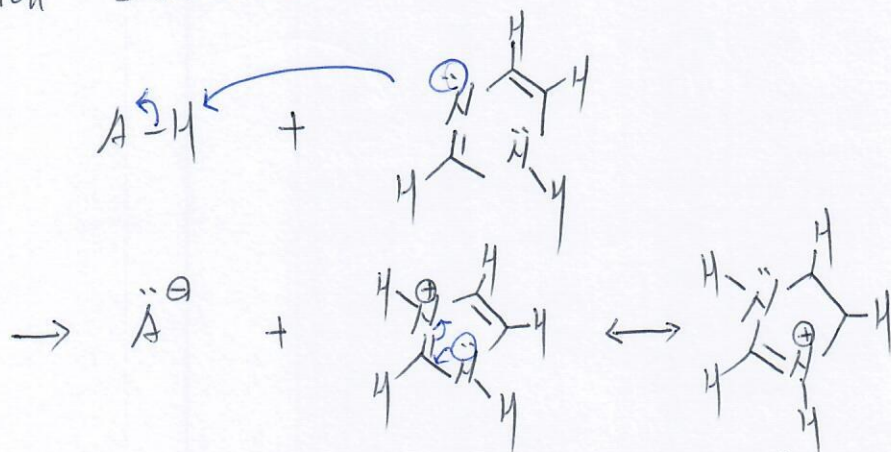
Problem 2-18



N_1 ; lone-pair electrons
More basic

N_2-H ; N_2 has lone-pair electrons.
 H is more acidic.

When Imidazole is reacted with acid,



When Imidazole is reacted with base

