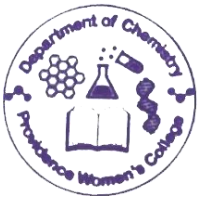
IV Semester Organic Chemistry		
Sahayog Pair		
1	Gayathri Raj	Archana M K
2	Aryananda M	Sangeerthana K
3	Sandra P M	Pooja S Prabhu
4	Hanin Sharafa	Keerthana N
5	Aswani V	Ayisha Mirsa
6	Sreelakshmi V	Praveena Venugopal
7	Vyshnavi M	Shana Parvin
8	Sneha P	Aparna V
9	Sona S Nair	Aparna P
10	Devika Sasikumar	Nivedhya P P
11	Aarsha Babu C	Nandana M V
12	Anjusha M	Sneha Sajeev
13	Manya R	Namitha Joy
14	Revathi P	Swathi U
15	Agna Joji	Hiba Fathima
16	Samanwaya P T	Nafeesa Thasneem
17	Yuktha Govind S	Sredha Sreedharan
18	Amaya Ks	Manusmaya P
19	Shivani K M	Amaya K R
20	Ajanya K Anil	Swathi P
21	Anugraha K	Amrutha Unni
22	Gayathri G K	Reema Rosarita

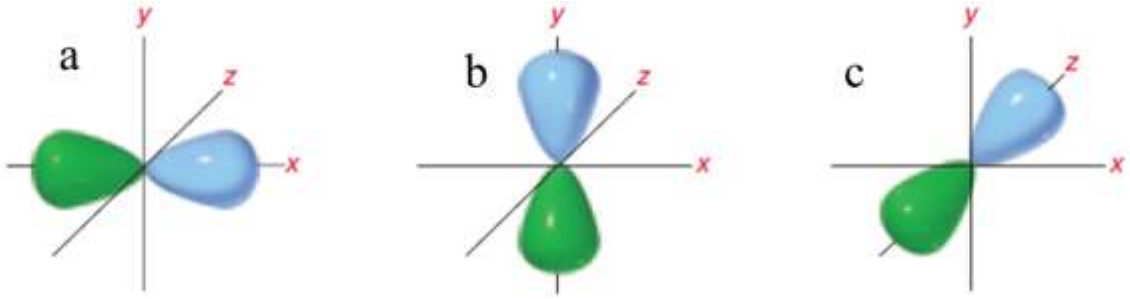


Sr. ASHA THOMAS
Assistant Professor & Head
Dept. of Chemistry
Providence Women's College
Calicut-9

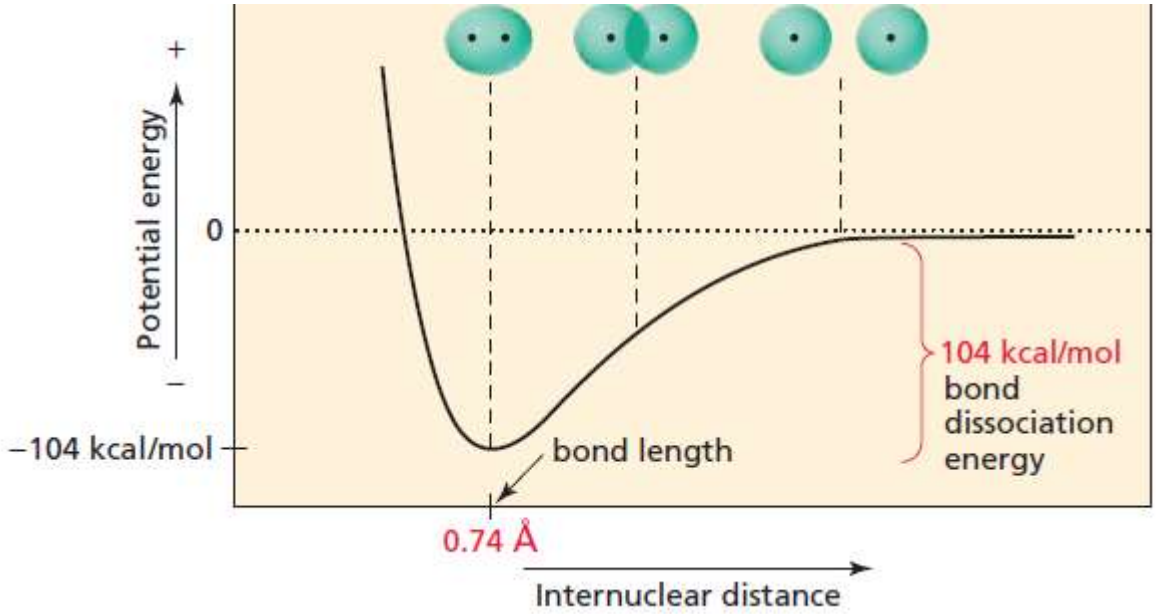
Mera Chunk: Activity I
18/02/22

Do activity with your chunk. **Only with your chunk.**
(You shall not covet your neighbor's partner)

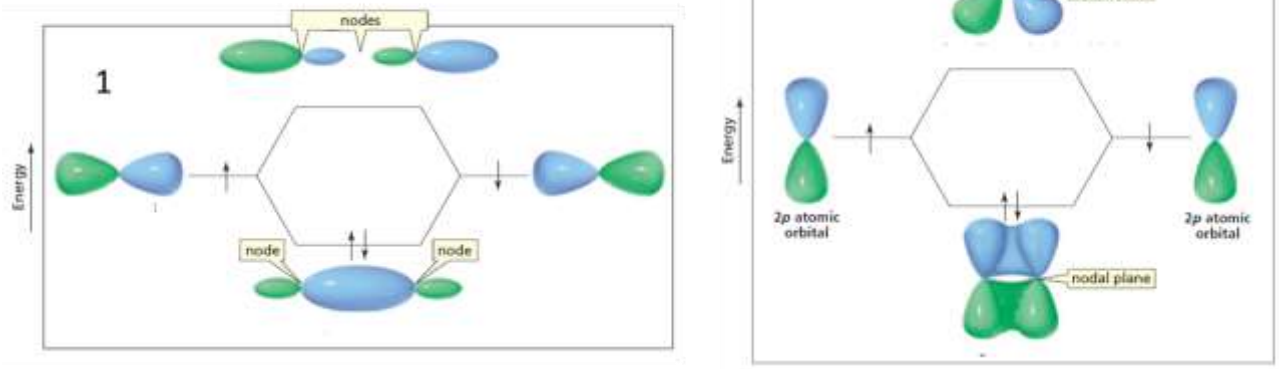
1. **Identify and name the orbitals given below**



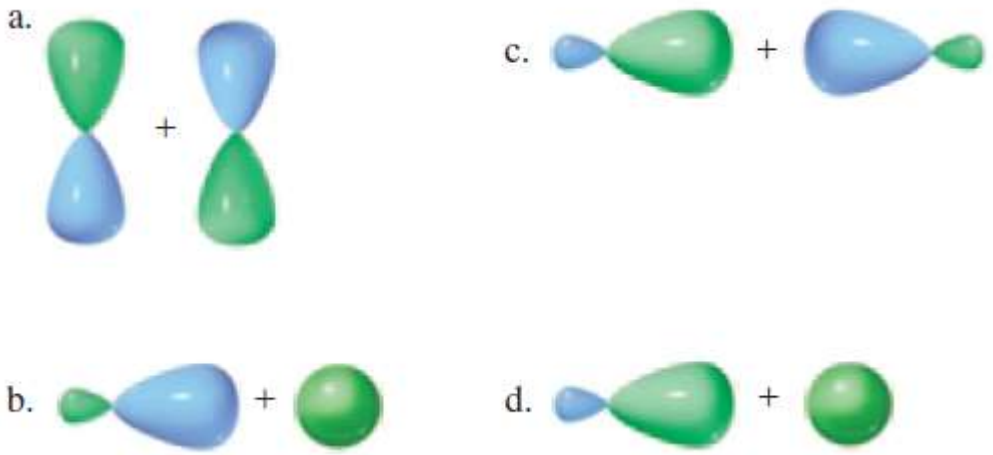
2. Examine the figure given below. Discuss with your partner and make a note on the given figure



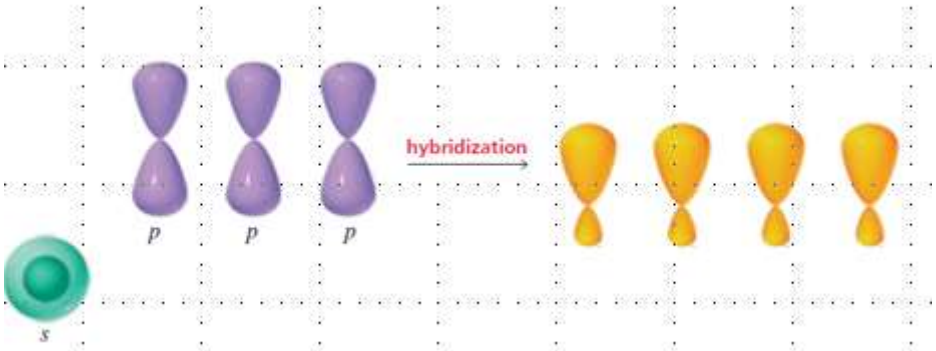
3. Shown below is the Molecular Orbital diagram for two MOs. Identify the Atomic orbitals taking part in the formation of MOs, the type of overlap between the atomic orbitals and the molecular orbitals formed. Differentiate between the Molecular Orbitals 1 and 2.



4. Indicate the kind of molecular orbital (σ, σ*, π, π*) that results when the orbitals are combined as indicated:



5. Show below is the illustration of a hybridization. Identify the hybridization. Discuss with your partner and find why the size of two yellow lobes are different.

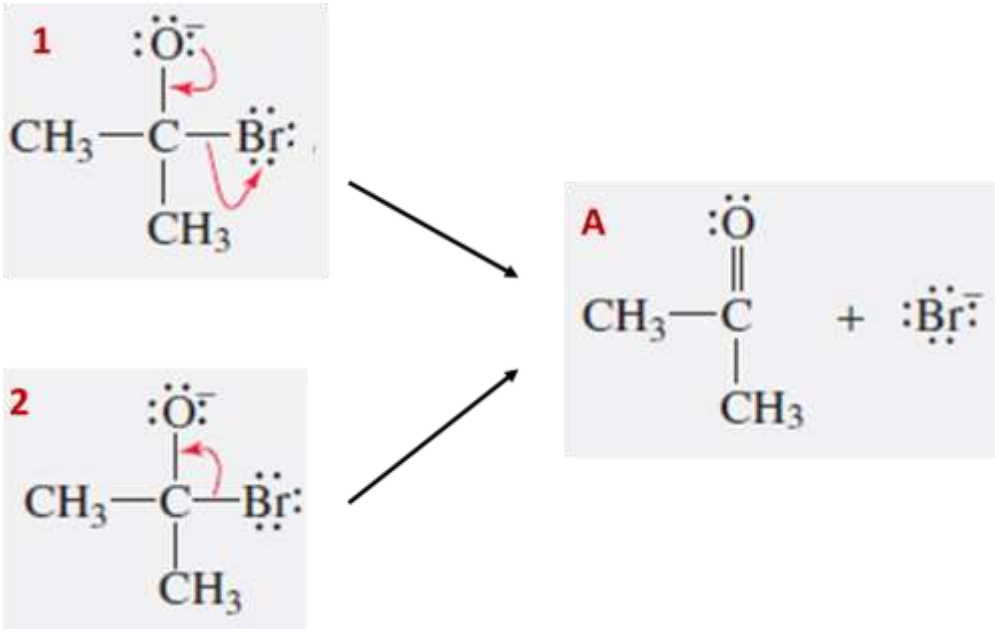


Mera Chunk: Activity II
15/03/22

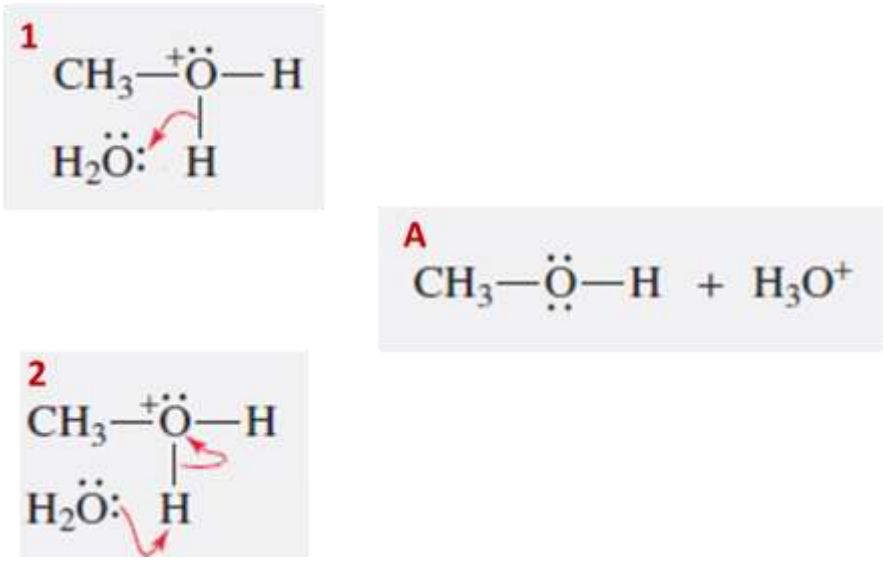
Do activity alone and discuss with your chunk.

1. Shown below is the movement of electrons in a chemical reaction predicted by two students 1 and 2 to form the organic compound A. Identify which student is correct in each case and discuss it with your partner

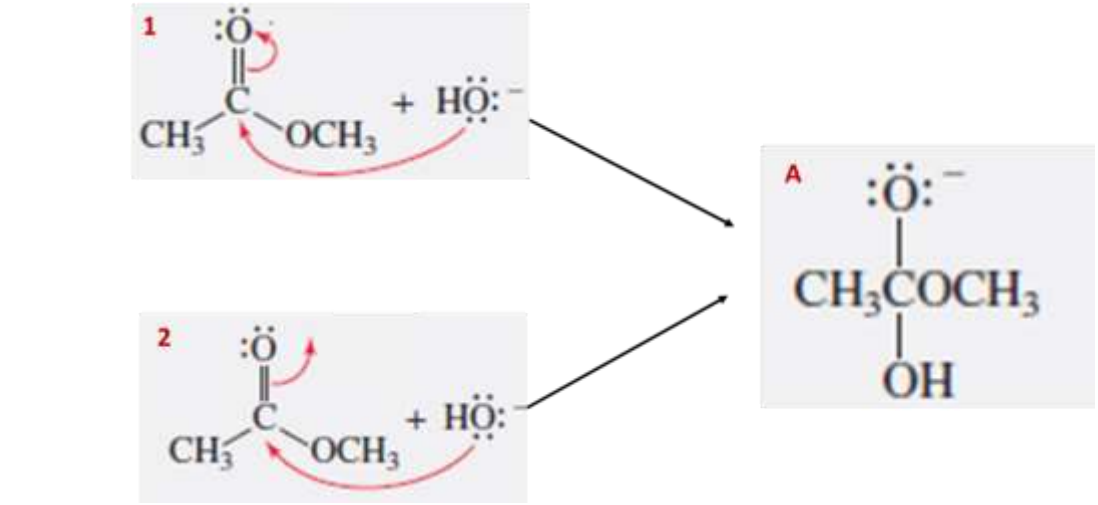
a.



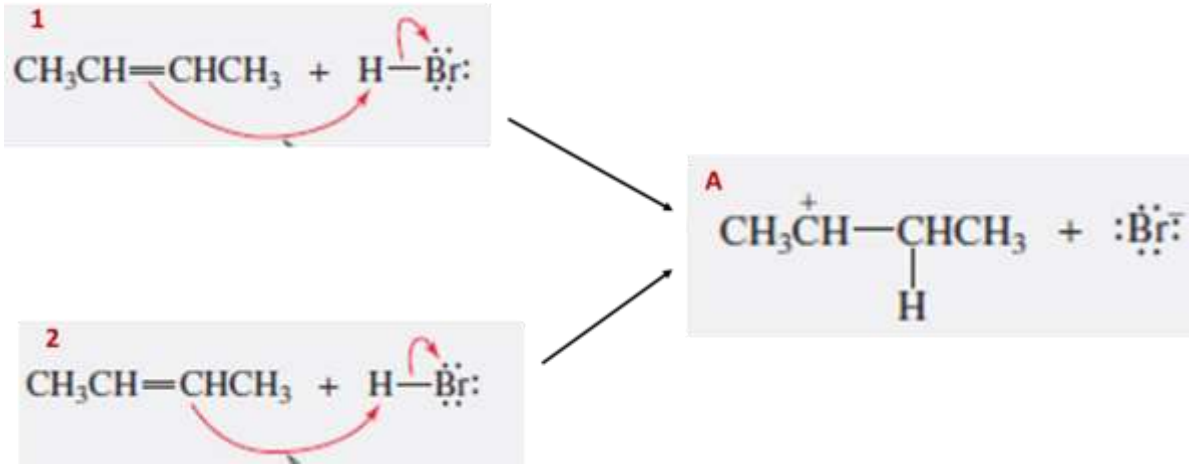
b.



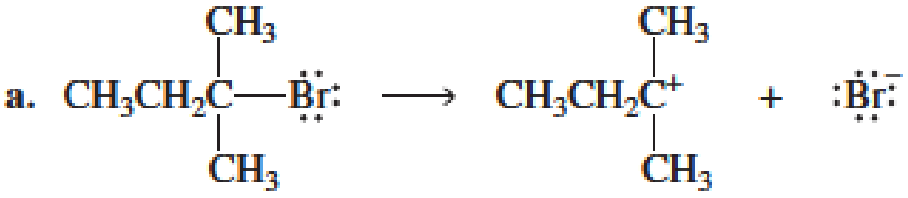
c.

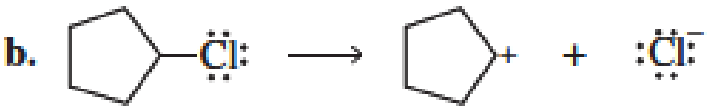


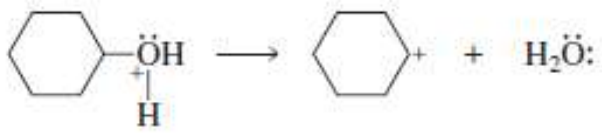
d.



2. Draw curved arrows to show the movement of the electrons in the following reaction steps.



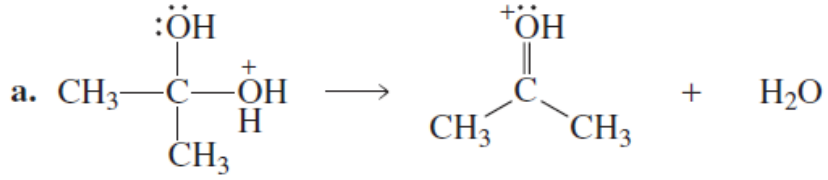


c. 

d. $CH_3CH_2—MgBr \longrightarrow CH_3\dot{C}H_2^- + {}^+MgBr$

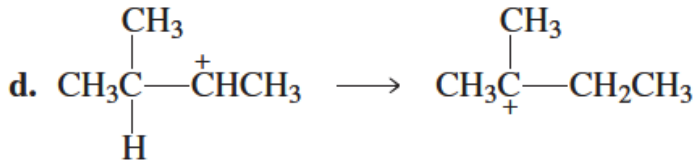
e. $CH_3CH_2\overset{+}{C}HCH_3 + :\ddot{B}r:^- \longrightarrow CH_3CH_2CHCH_3$ (:Br: below CHCH$_3$)

3. Draw curved arrows to show the movement of the electrons that result in the formation of the given product(s).

a. 

b. $CH_3CH_2CH{=}CH_2 + H—Cl \longrightarrow CH_3CH_2\overset{+}{C}H—CH_3 + Cl^-$

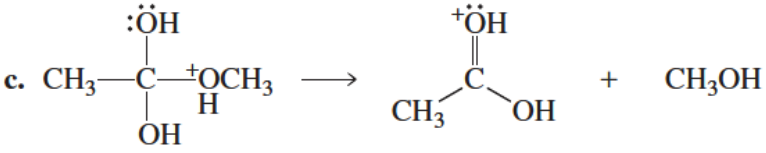
c. $CH_3CH_2—Br + \ddot{N}H_3 \longrightarrow CH_3CH_2—\overset{+}{N}H_3 + Br^-$

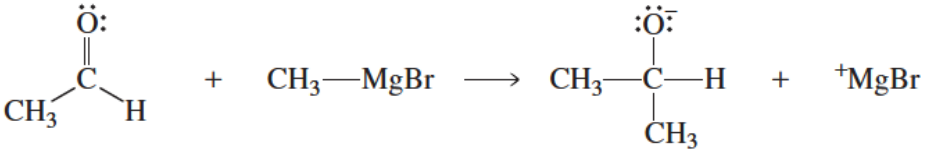
d. 

4. Draw curved arrows to show the movement of the electrons that result in formation of the given product(s).

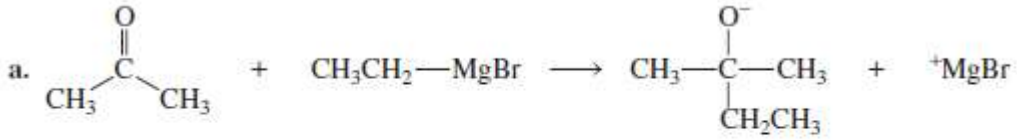
a. $CH_3CH{=}CHCH_3 + H—\overset{+}{O}(H)—H \longrightarrow CH_3\overset{+}{C}H—CH_2CH_3 + H_2O$

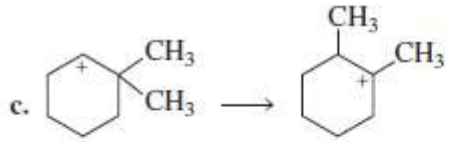
b. $CH_3CH_2CH_2CH_2—Cl + {}^-\ddot{C}{\equiv}N \longrightarrow CH_3CH_2CH_2CH_2—C{\equiv}N + Cl^-$

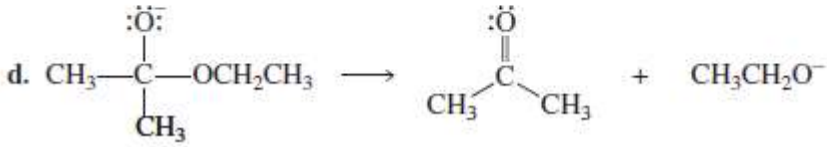
c. 

d. 

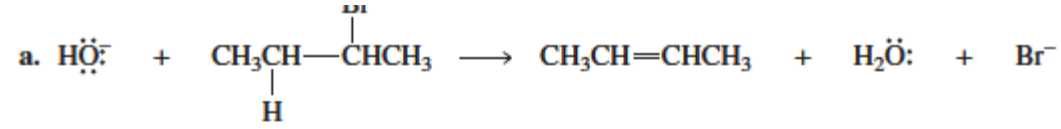
5. Draw curved arrows to show the movement of the electrons that result in formation of the given product(s).

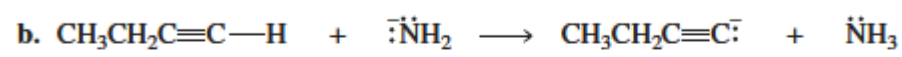


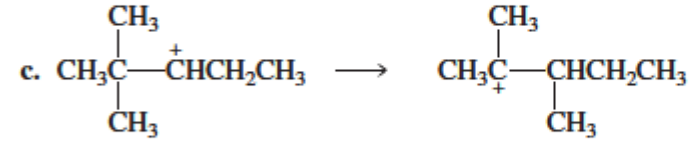


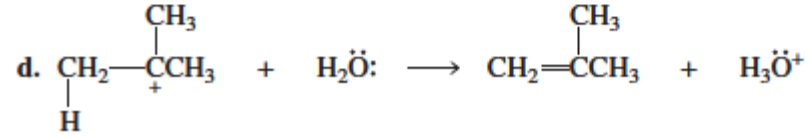


6. Draw curved arrows to show the movement of the electrons that result in formation of the given product(s).

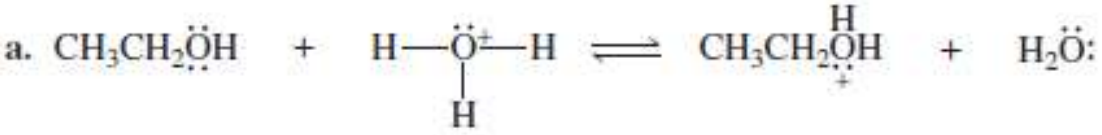


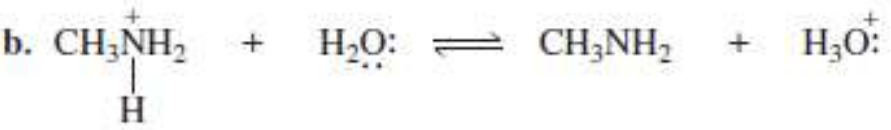




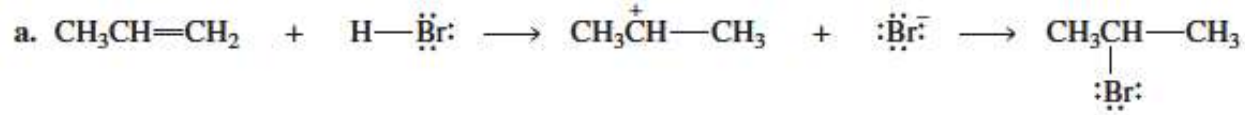


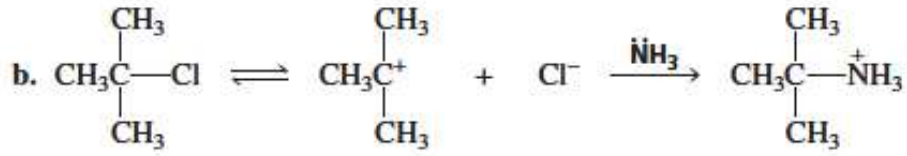
7. Draw curved arrows to show the movement of the electrons that result in formation of the given product(s).

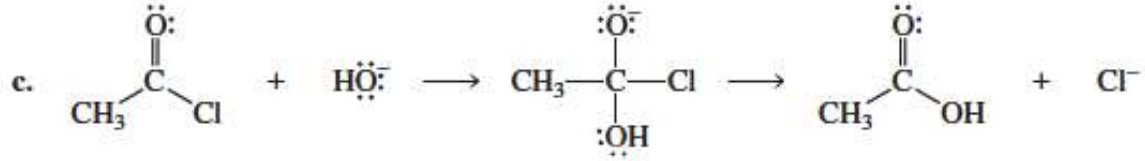




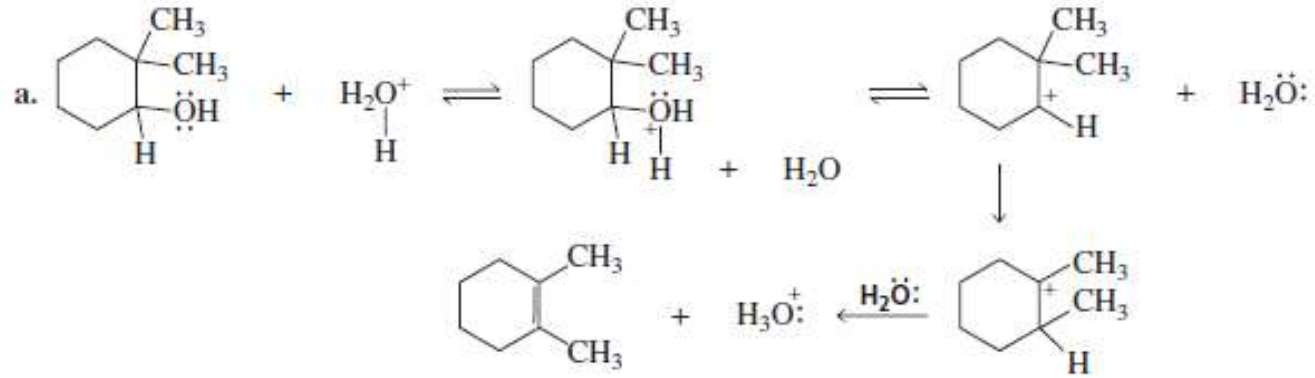
8. Draw curved arrows to show the movement of the electrons in each step of the following reaction sequences

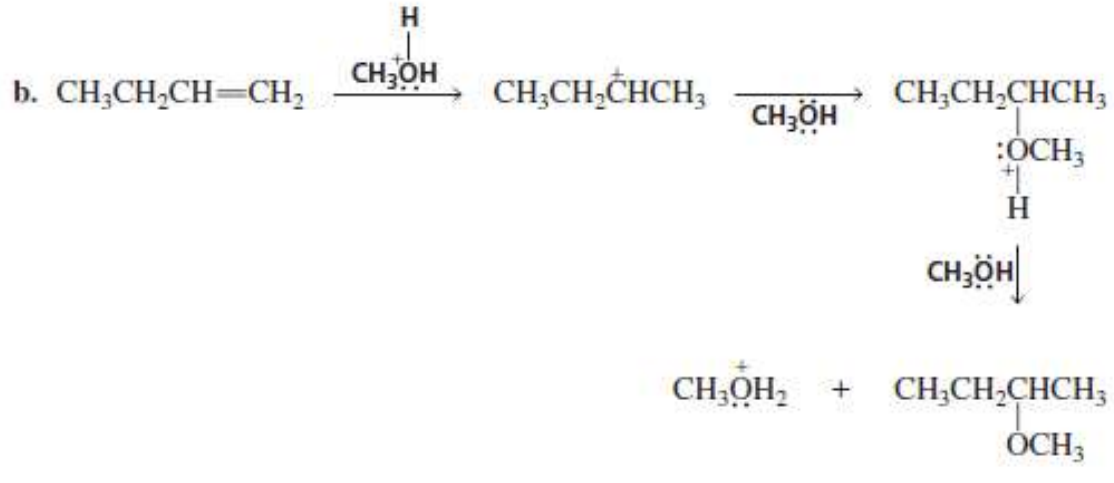


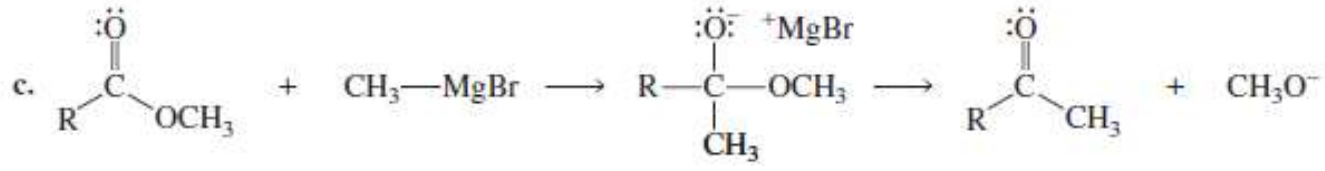




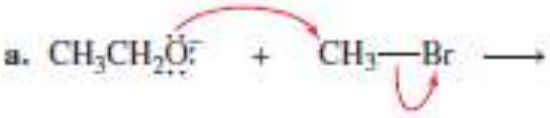
9. Draw curved arrows to show the movement of the electrons in each step of the following reaction sequences

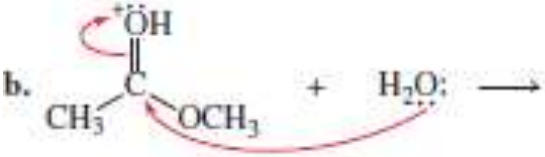


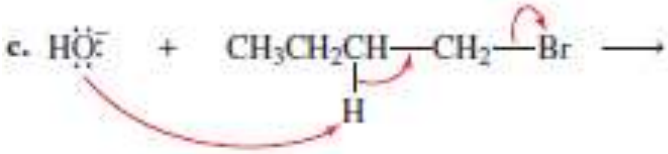


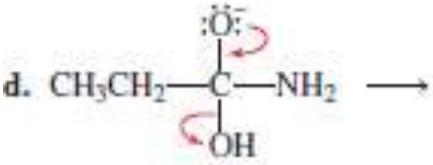


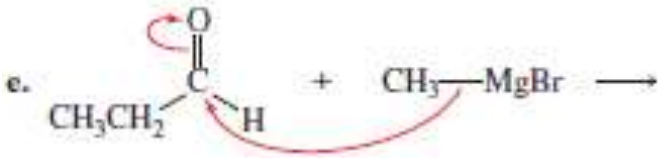
10. Use what the curved arrows tell you about electron movement to determine the product(s) of each reaction step

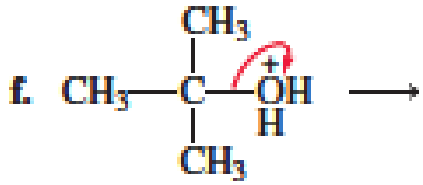
a. 

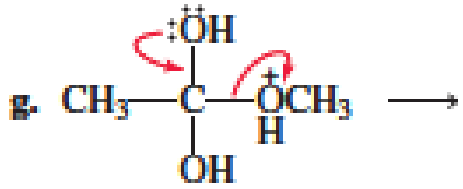
b. 

c. 

d. 

e. 

f. 

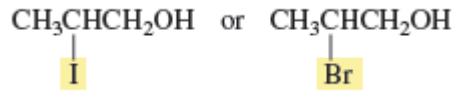
g. 

Mera Chunk: Activity III
21/03/22

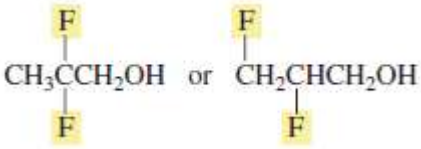
Do activity alone and discuss with your chunk.

1. Which is a stronger acid and why?

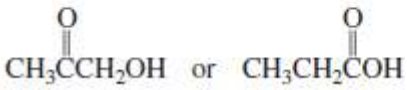
a.



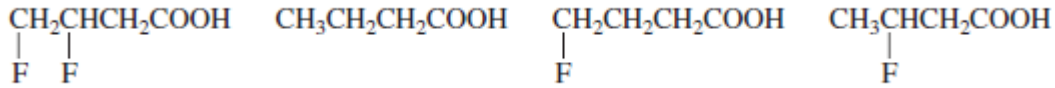
b.



c. $CH_3OCH_2CH_2CH_2OH$ or $CH_3CH_2OCH_2CH_2OH$

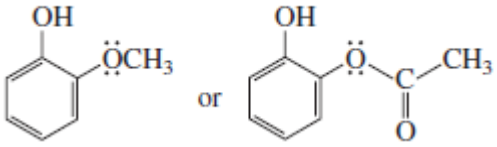
d. 

2. Rank the following compounds from strongest acid to weakest acid



3. If HCl is a weaker acid than HBr, why is $ClCH_2COOH$ a stronger acid than $BrCH_2COOH$?

4. Which is a stronger acid? Explain



III Semester Complimentary Organic Chemistry 02/11/21

Question and Scheme for Peer Assessment

1. What are Carbocations? Discuss the relative stabilities of Carbocations in terms of inductive and hyper conjugative effect (8)
2. Aniline is more reactive than benzene towards electrophilic substitution reaction. Explain. (2)

Scheme

1. Cationic intermediate with a positive charge on carbon with six valence electrons (1 mark). Presence of electron releasing group disperse the positive charge on the carbon and hence stabilize the carbocation (0.5). Alkyl groups show +I effect in the direction of positive charge in the carbocation and thus disperse the positive charge on the carbon. (0.5) Greater the number of alkyl groups attached to positive carbon, greater would be the stability of carbocation. Hence 3^0 carbocation is more stable than 2^0 which is more stable than 1^0 carbocation (1). Depict using a drawing (1). Positive carbon in carbocation is sp2 hybridized hence can make a sigma - p hyperconjugation with its vacant unhybridized p orbital (1). Greater the number of alpha hydrogens attached to positive carbon greater will be the stabilization of carbocation. (1). The number of alpha hydrogens and number of hyperconjugative structures decreases in the order $3^0 > 2^0 > 1^0$ (1). Depict using a drawing (1).

2. +M effect of -NH2 group increases the electron density over the aromatic ring in case of aniline (1 mark). Depict it with drawing (1 mark)