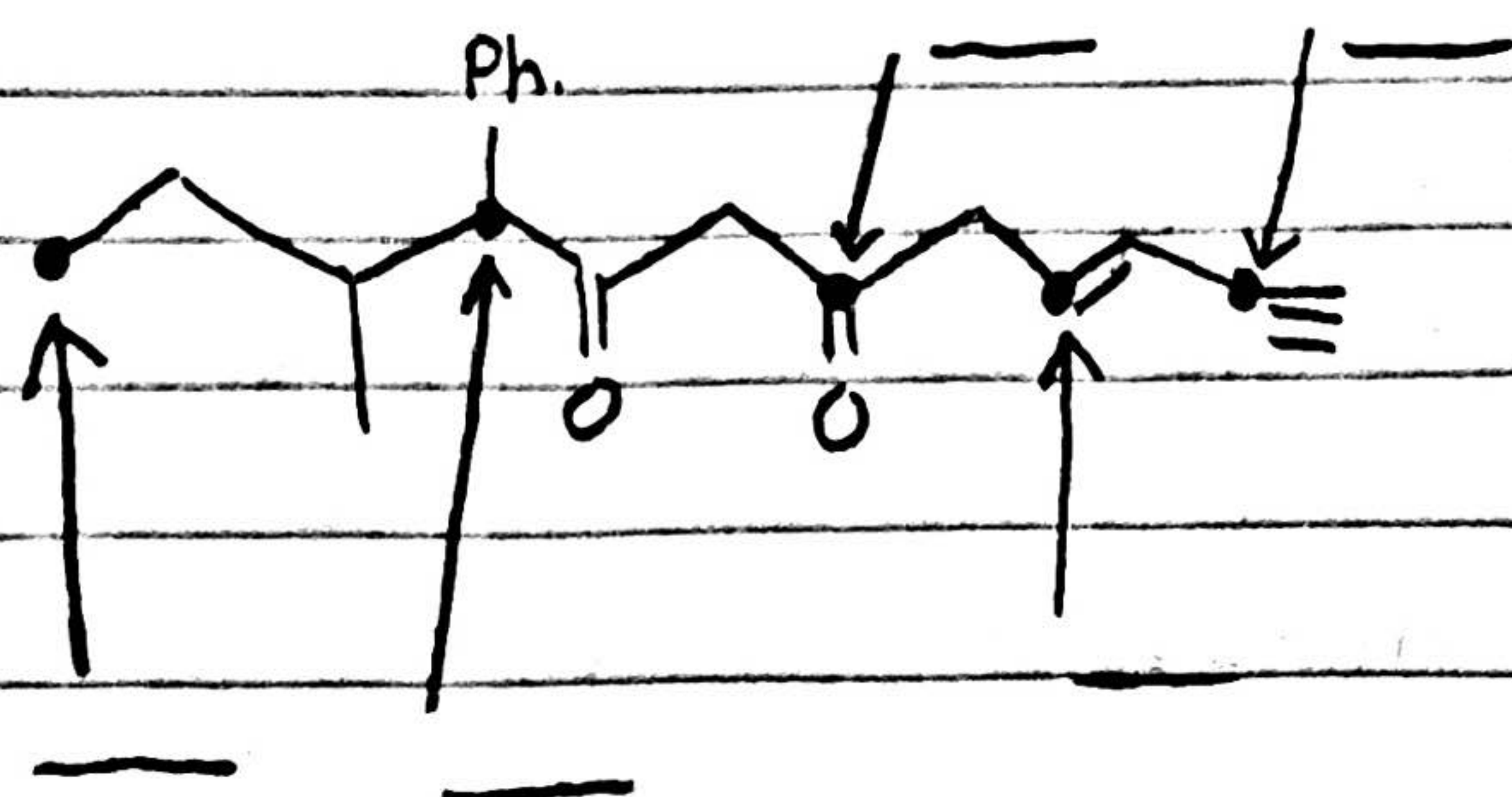


① SHOW ALL RESONANCE FORMS OF BENZENE, INCLUDING ALL INTERMEDIATES



HINT: "Timber" "stand up on head"

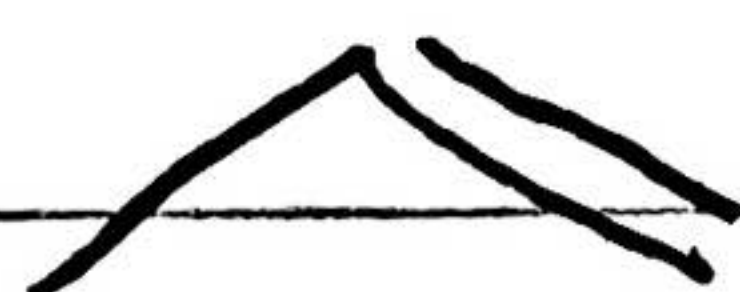
② Determine the hybridization of the indicated centers



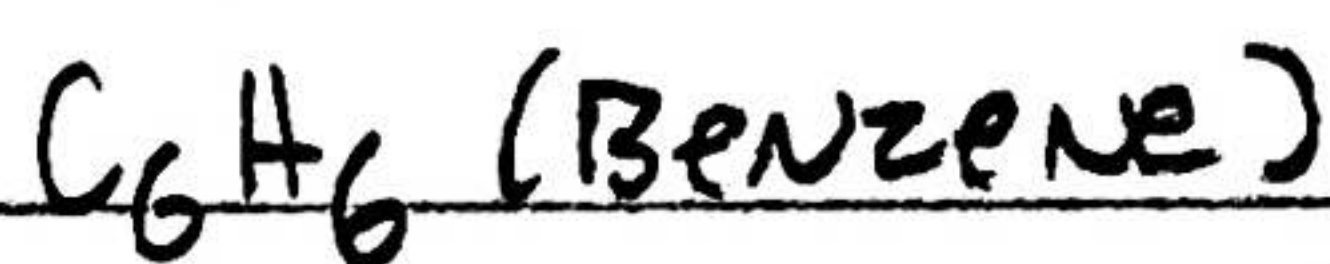
Ph = Phenyl Ring substituent.

③ Draw the dipole moment on the following, ALL Dipoles + Overall dipole
 BF_3 , H_2O , HCl , SF_6 , HF

④ DRAW 2 Resonance forms for the following molecule, show all formal charges



⑤ Draw the following molecules in 1) Lewis type straight line (with hydrogens)



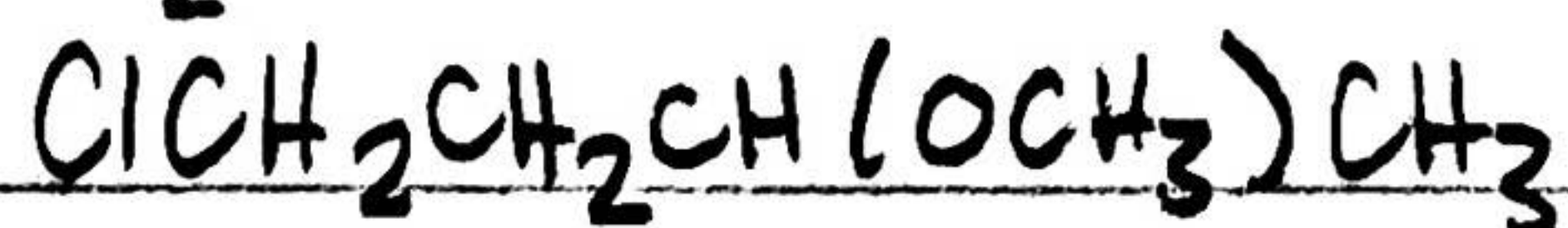
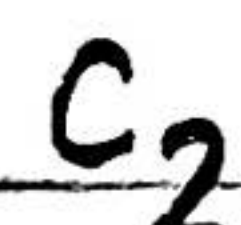
(with hydrogens)



2) skeletal formula

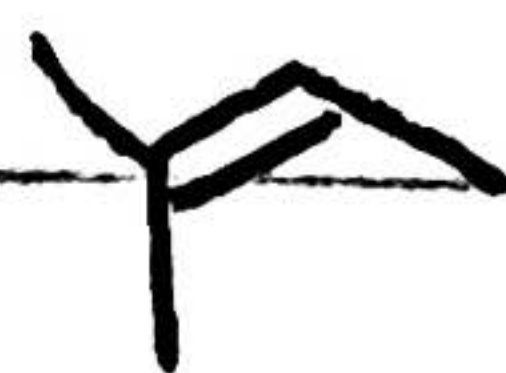


(without hydrogens)

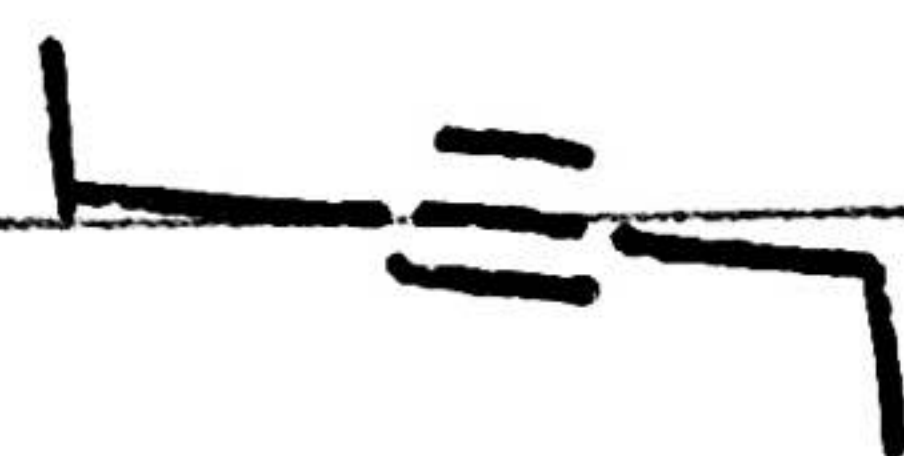


⑥ How many carbons are in the following drawings? How many hydrogens?

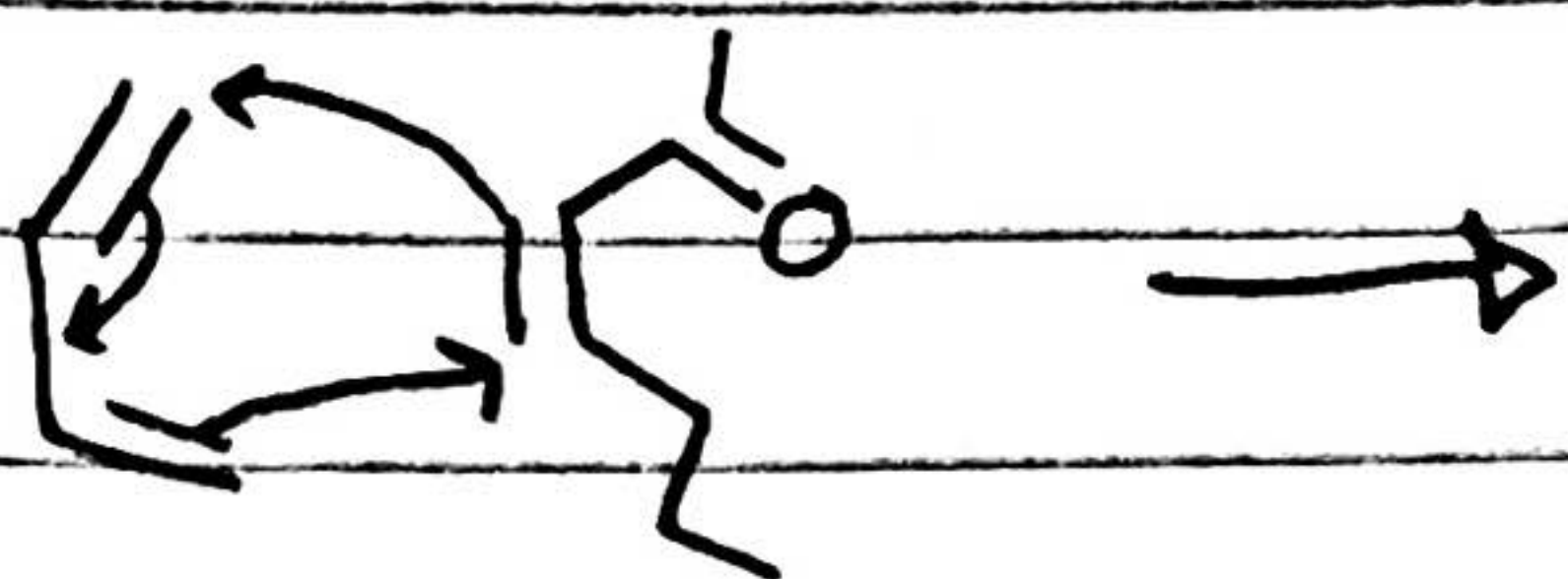
a)



b)



9) Show the product resulting from the electron flow.



10) Make a question about any reaction, pretend you are writing the test, make your answer and give reasoning to why you chose the specific question and answer to your question.

Example:

question: is How many carbons are in the following molecule



Answer: 3 carbons.