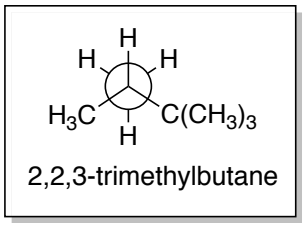
You are not allowed to post this quiz on the internet!

Questions 1 to 9. Multiple choice (2 pts each); please use the front of the Scantron form.

1. The Newman of 2,2,3-trimethylbutane is shown in the box. Predict the number of signals in ^{13}C NMR. – Please remember that NMR cannot distinguish between conformers.

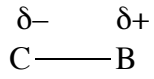


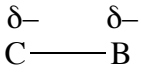
2,2,3-trimethylbutane

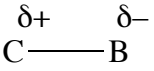
A) three signals B) four signals

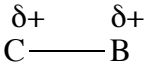
C) six signals D) seven signals

2. Which of the following correctly describes polarity (partial charges) of a carbon-boron bond?

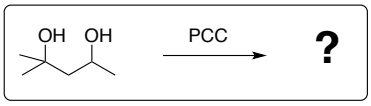
A) 

B) 

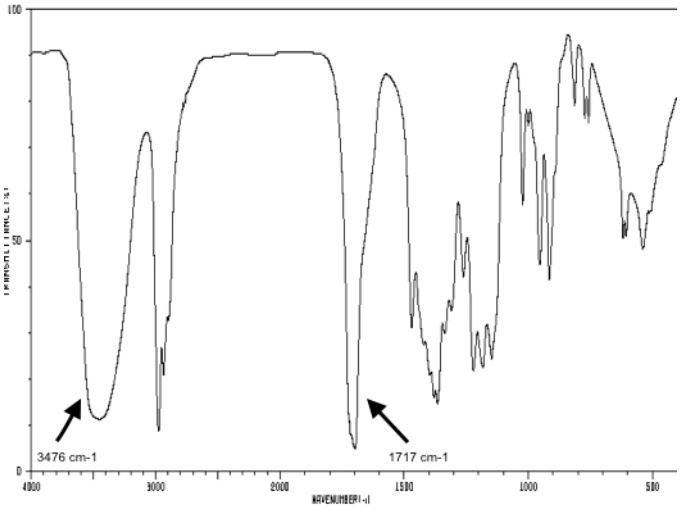
C) 

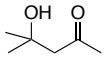
D) 

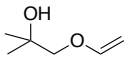
3. According to the IR spectrum which of the following is a product of the reaction shown in the box? – Remember PCC – an oxidation agent - does not break carbon-carbon bonds.

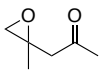


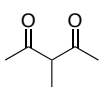
IR spectrum of the product:



A) 

B) 

C) 

D) 

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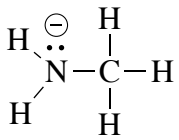
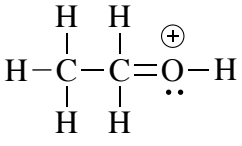
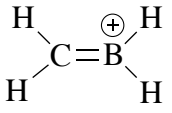
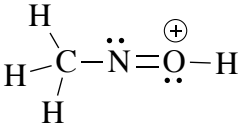
4. Which of the following is correct?

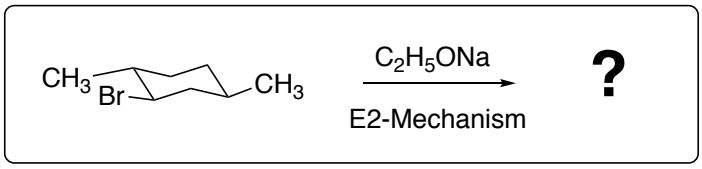
A) 

B) 

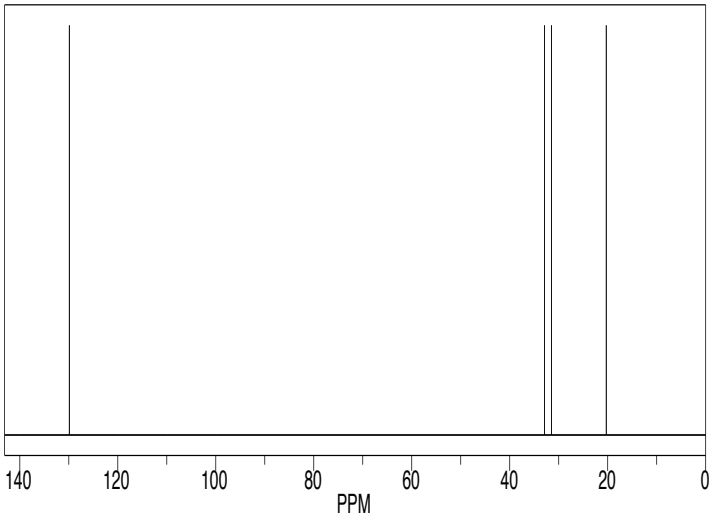
C) 

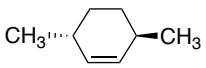
D) 

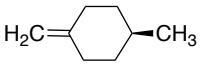
5. According to ^{13}C NMR spectrum, what is a major product of the reaction shown in the box?

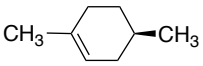


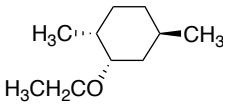
^{13}C NMR spectrum of the major product:



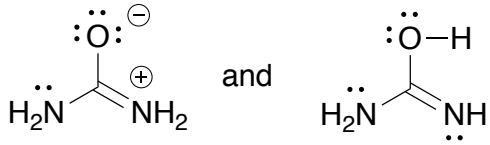
A) 

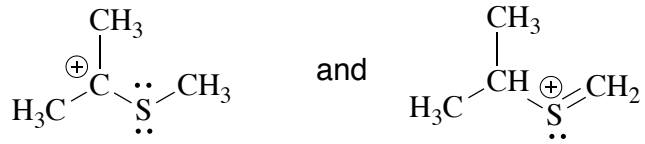
B) 

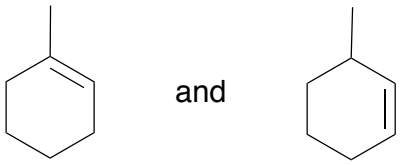
C) 

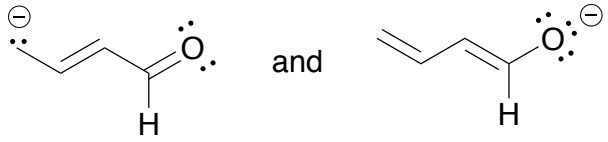
D) 

6. Which of the following pairs depicts resonance structures?

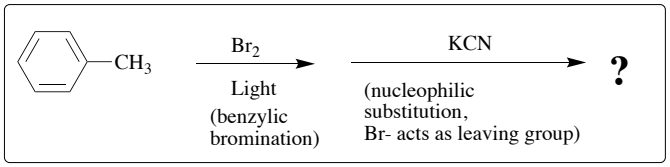
A) 

B) 

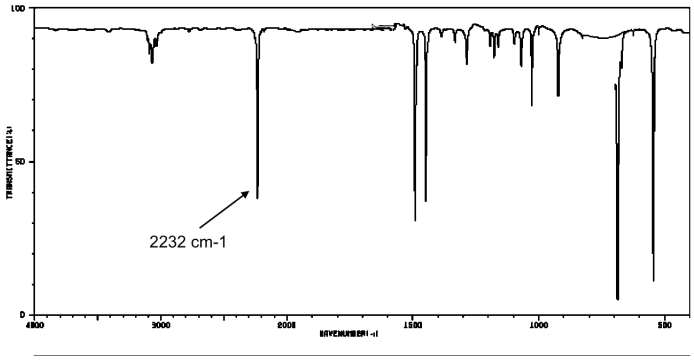
C) 

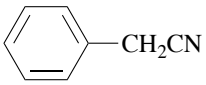
D) 

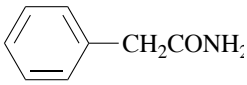
7. According to the IR spectrum what is the major product of the reaction sequence shown in the box?

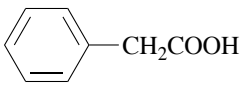


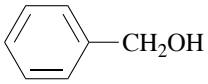
IR spectrum of the major product:



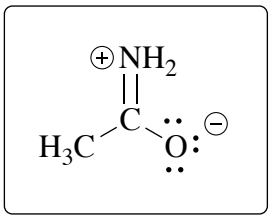
A) 

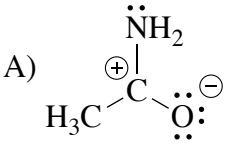
B) 

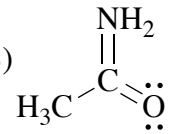
C) 

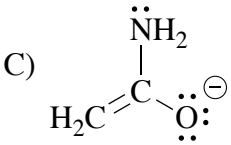
D) 

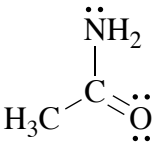
8. Which one of the following structures represents major resonance contributor of molecule in the box?



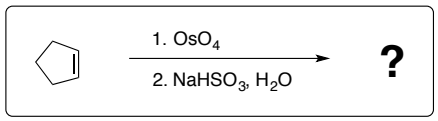
A) 

B) 

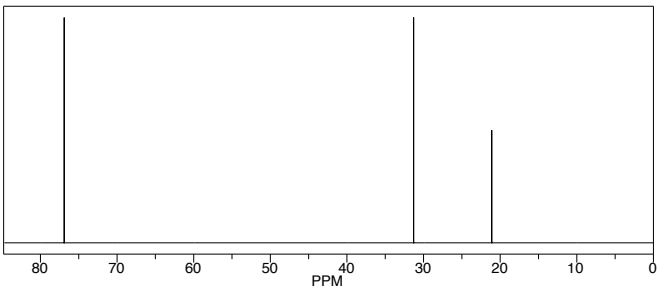
C) 

D) 

9. According to the 13C NMR, what is a major product of the reaction in the box?



^{13}C NMR of the major product:



A) 

B) 

C) 

D) 

Question 10 – write –in. Please use the back of the Scantron form.

10. The functional groups in the picture below are labeled using the numbers 66 to 71. Identify the functional groups indicated by numbers in the molecule shown below, and write answer into lines 66 to 71 on the back of the Scantron form (1 pt for each functional group, 6 pts total).