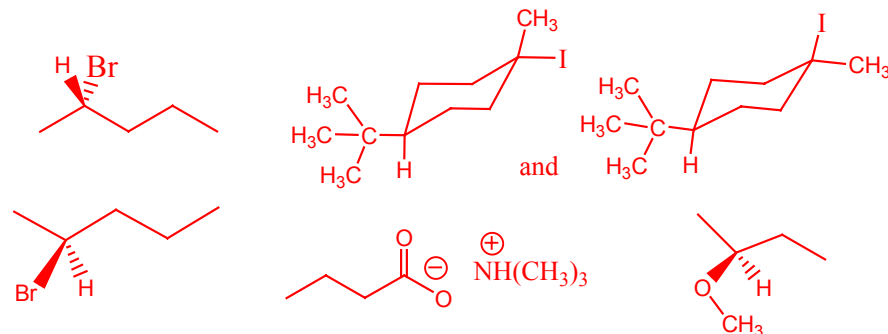


Practice Exam 3ii - Answers

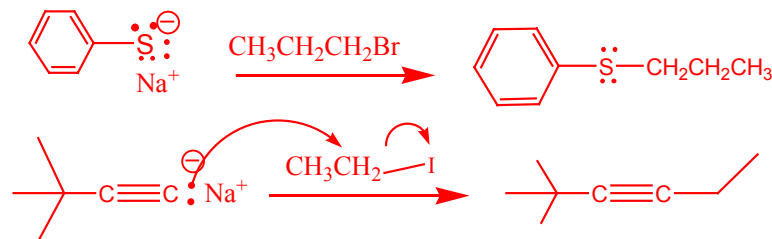
1. B, H, K, M, T, X, AA, FF

2.

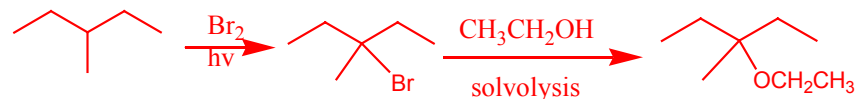


3. see Solomons problem 11.18 b

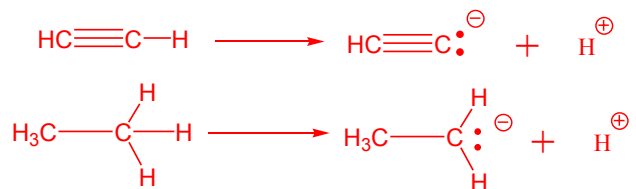
4.



5.



6a. The two acid dissociation reactions are shown below



The H in the acetylene is attached to an sp hybridized carbon in which the electron pair is more tightly held than in the sp^3 hybridized orbital of the ethane. We know that from Table 3.1 (page 105 in text) the CH_3CH_2^- is the strongest base shown and the acetylide is a weaker base, from this we can imply that, acetylene, the conjugate acid of the acetylide, is a stronger acid than ethane, the conjugate acid of the ethanide (CH_3CH_2^-).

b. The electron pair on the nitrogen of CH_3CN is in an sp orbital and thus more tightly held (less available for donation) than the electron pair in the sp^3 orbital on the trimethyl amine. (This explanation is similar to the discussion for the greater basicity of the ethanide anion vs that of the acetylide anion.)