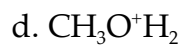
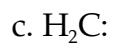
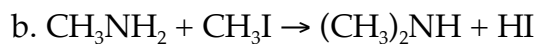
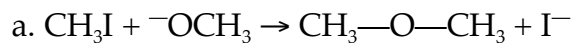


Exercise 5: Electrophiles, nucleophiles and radicals

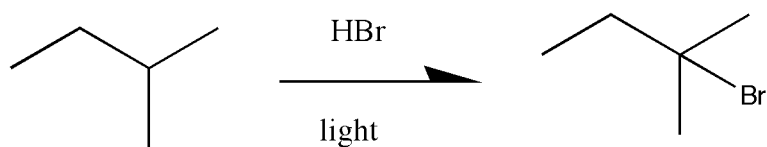
1. Draw Lewis structures and identify each of the following as an **electrophile**, a **nucleophile**, **both** or **neither** by evaluating whether they will react appreciably with the hydroxide ion or hydronium ion. If they react with either, write the **equation** of the reaction.



2. Identify the **electrophile** and the **nucleophile** in each of the following reactions:



3. a. Write **equations** to show reasonable radical-chain initiation, propagation and termination steps in the monobromination of 2-methylbutane shown below. Explain clearly why the products of the chain termination are obtained in trace amounts only.



b. Use the bond energies in bond energy table in the text (Table 3.2 on page 146) to estimate ΔH° for each of the propagation steps leading to the two observed products. Which propagation step in the formation of 2-bromo-2-methylbutane is expected to be the **slow step**?