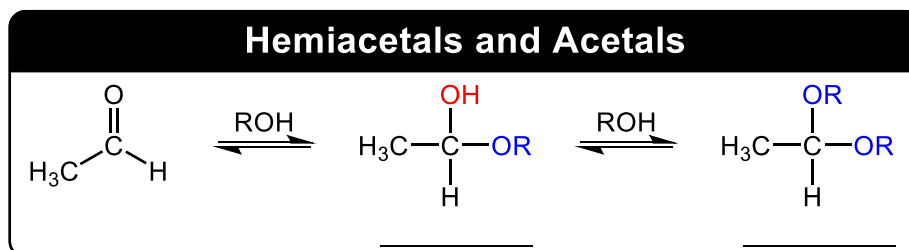
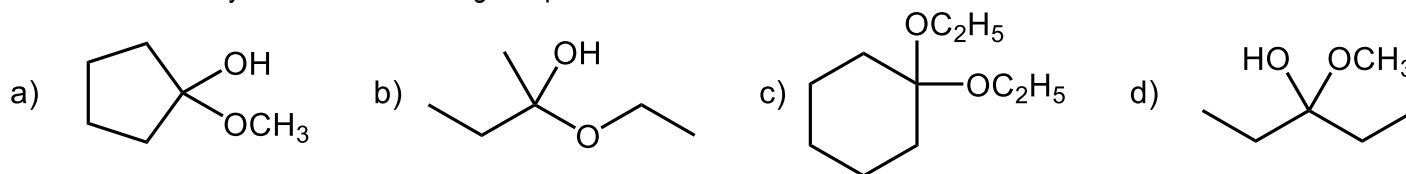


CONCEPT: HEMIACETAL AND ACETAL FORMATION

- Aldehydes and ketones react with _____ to form hemiacetals and acetals.
- ☐ **Hemiacetal:** A compound with a **hydroxy** (____) group and an **alkoxy** (____) group on the same carbon atom.
- ☐ **Acetal:** A compound with _____ **alkoxy** groups on the same carbon atom.

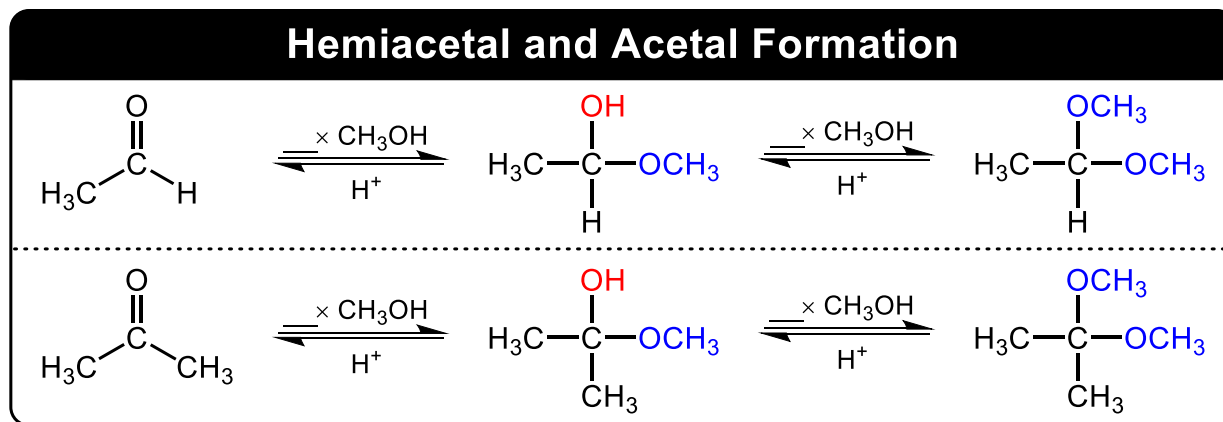


EXAMPLE: Identify each of the following compounds as an acetal or hemiacetal.

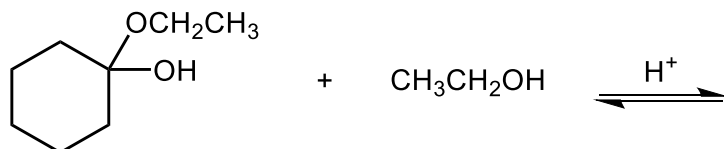


Formation of Hemiacetals and Acetals

- 1 mol alcohol produces _____ and 2 mol alcohol produce _____.

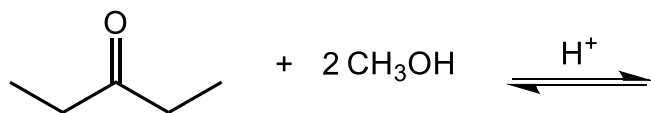


EXAMPLE: Draw the structure of the acetal formed in the following reaction.



CONCEPT: HEMIACETAL AND ACETAL FORMATION

PRACTICE: What would be the product of the following reaction?



PRACTICE: Draw the intermediate in the following reaction.



PRACTICE: Draw the structure of the product when one mole of cyclopentanone reacts with two moles of methanol in an acidic solution.