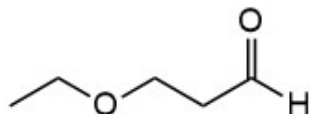
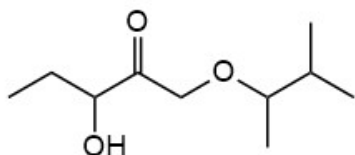




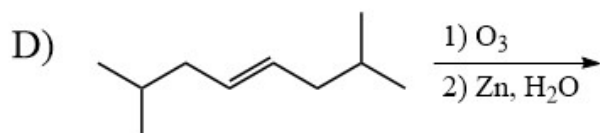
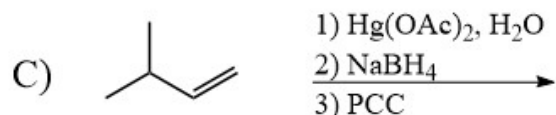
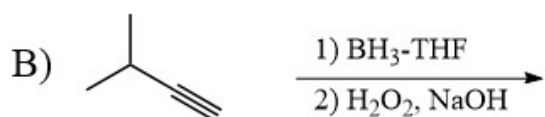
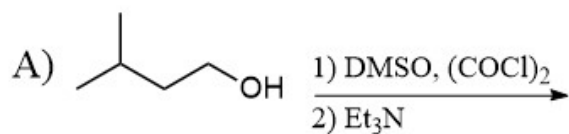
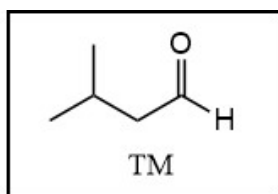
Provide the IUPAC name 1
for the following compound.



2

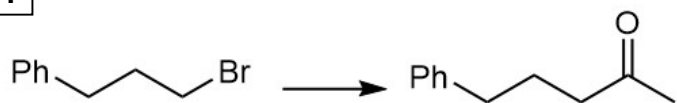


3 Which of the following syntheses would NOT produce the target molecule (TM) shown?



E) None of the above (all would produce TM)

4 Identify the suitable set(s) of reagents for the following synthesis.




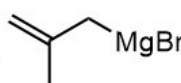
I 1. $\text{HC}\equiv\text{CNa}$; 2. $\text{BH}_3\text{-THF}$; 3. NaBH_4

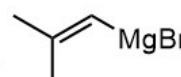
II 1. $\text{HC}\equiv\text{CNa}$; 2. H_2O , H_2SO_4 , HgSO_4

III 1. Mg ; 2. ethanal; 3. H_3O^+ ; 4. PCC

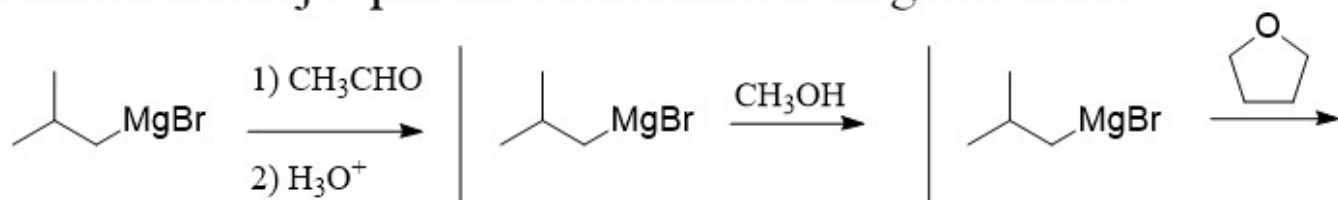
IV 1. Mg ; 2. propanone; 3. H_3O^+ ; 4. PCC

V 1. Mg ; 2.  3. H_3O^+ ; 4. PCC

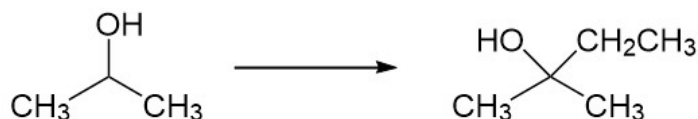
VI 1.  2. H_3O^+ ; 3. O_3 ; 4. DMS

VII 1.  2. H_3O^+ ; 3. O_3 ; 4. DMS

5 Predict the major products for the following reactions.

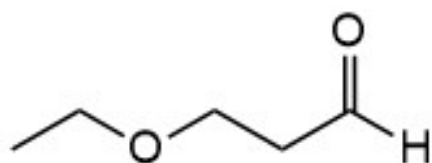


6 Which reagents would be best to accomplish the following transformation?



1

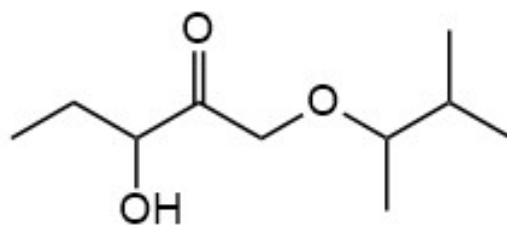
Provide the IUPAC name for the following compound.



- A) 3-ethoxypropanal
- B) 1-ethoxy-3-propanone
- C) 1-ethoxy-3-propanal
- D) 3-ethoxy-1-propanone
- E) 3-ethoxy-1-propanal

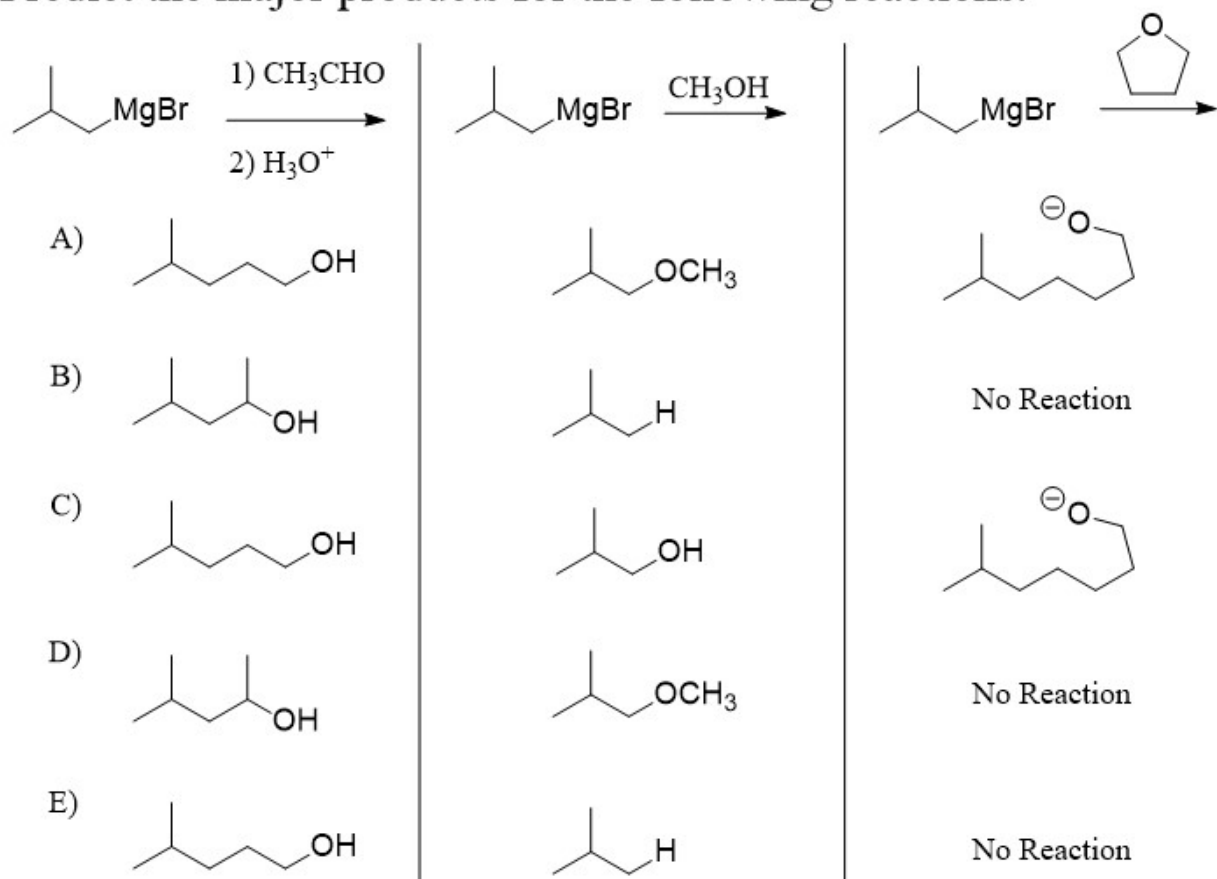
2

Provide the IUPAC name for the following compound.



- A) 3-hydroxy-1-(1,2-dimethylpropoxy)-2-pentanone
- B) 3-hydroxy-1-(3-methyl-2-butoxy)-2-pentanone
- C) 1-(1,2-dimethylpropoxy)-pentan-4-on-3-ol
- D) 1-(3-methyl-2-butoxy)-pentan-4-on-3-ol
- E) None of the above

5 Predict the major products for the following reactions.



6

Which reagents would be best to achieve the following synthesis?



- | | | |
|--|--|---|
| A) 1) H_2SO_4 , heat | B) 1) NaNH_2 | C) 1) $\text{CH}_3\text{CH}_2\text{MgBr}$ |
| 2) $\text{CH}_3\text{CH}_2\text{MgBr}$ | 2) $\text{CH}_3\text{CH}_2\text{Br}$ | 2) H_3O^+ |
| 3) H_3O^+ | | |
| D) 1) PCC | E) 1) H_2SO_4 , heat | |
| 2) $\text{CH}_3\text{CH}_2\text{MgBr}$ | 2) mCPBA | |
| 3) H_3O^+ | 3) $\text{CH}_3\text{CH}_2\text{MgBr}$ | |
| | 4) H_3O^+ | |