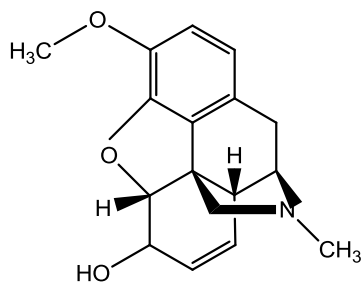


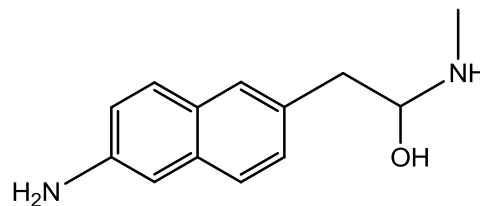
MEDCEM 562

Problem Set 1

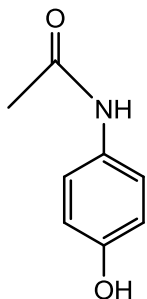
1. Examine the drug structures below. First identify the functional group(s) in each molecule that can exist in a charged form. Then for each group in each structure, indicate the predominant ionization state at pH 3, pH 7 and pH 11.



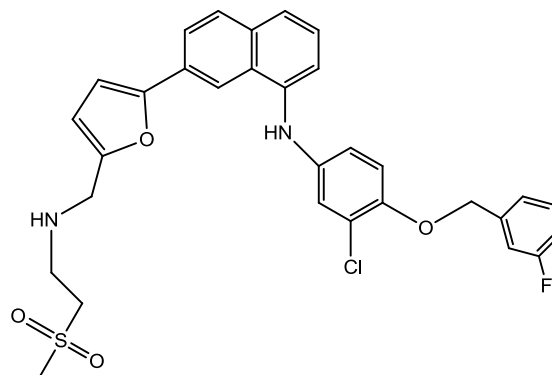
1



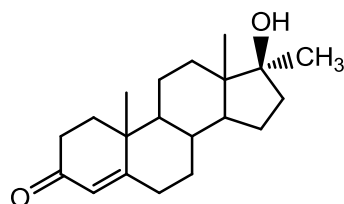
2



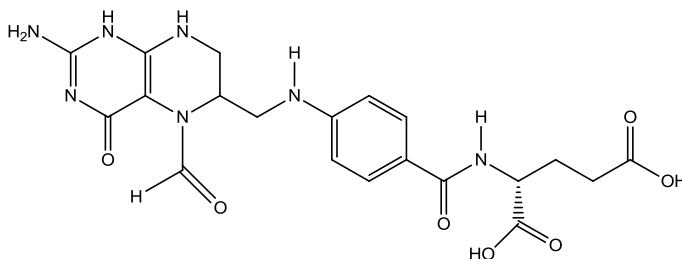
3



4

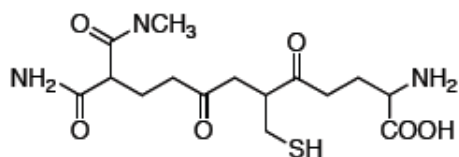
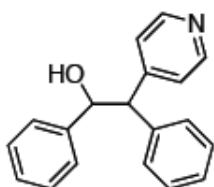
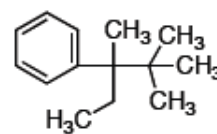
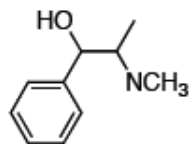
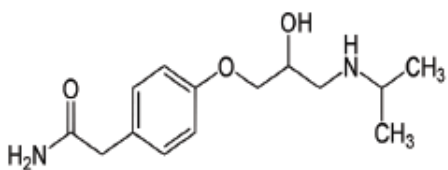
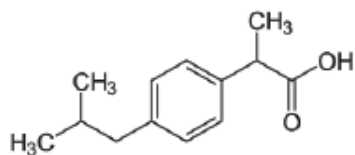
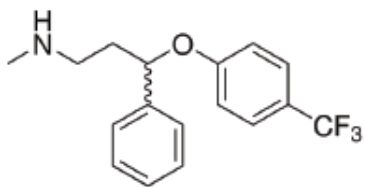


5

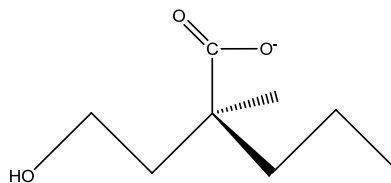
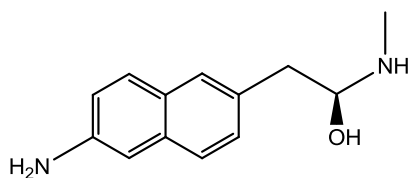


6

2. Examine the drug structures below. First identify the chiral center(s) in each molecule. Indicate if each molecule can exist as an enantiomer or a diastereomer.



3. Examine the structures below. Indicate for each if the chiral center is R or S configuration.



4. Is the following structure a cis or trans isomer?

