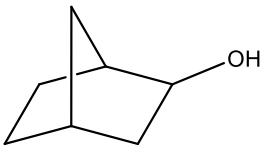
Chem 343 Name_____

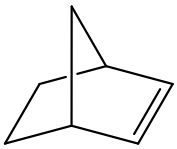
Quiz 9 Section_____

True or False:

1. *Endo*- and *exo*-borneol are diastereomers.
2. Diastereomers can be differentiated by melting point.
3. Sodium sulfate granules can be used to remove trace amounts of water from an organic extract.
4. Sulfuric acid will act as both catalyst and nucleophile in this hydration reaction.
5. To promote the hydration of norbornene, the reaction today is performed at an elevated temperature.
6. In this reaction, the melting point is obtained only after sealing the capillary tube containing the sample. Why do we need to seal the tube?
7. After the addition of NaOH to the norbornene reaction medium, the following species are left in the solution:



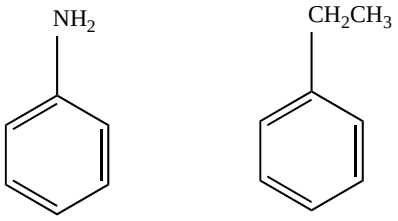
H_2O $NaHSO_4$



You then are instructed to transfer the solution to a separatory funnel and "extract" it twice with 3-4 mL portions of dichloromethane.

Which of the above components will dissolve into the dichloromethane layer?
(Circle all those that apply).

8. By now, you've had time to let the concepts underlying extraction sink in a bit. Suppose you have a mixture of the following two compounds and need to separate them:



Both are dissolved in dimethyl ether, transferred to a sep funnel, and water is added. To isolate the aniline, you could perform the following steps. (circle appropriate answer and fill in the blank)

First:

a) make the aqueous layer basic by addition of KOH(aq)
b) make the aqueous layer acidic by addition of HCl (aq)
c) add a third layer of dichloromethane to selectively solvate the aniline.

Second, shake and separate, then draw off:

a) the aqueous layer that contains the ethylbenzene
b) the aqueous layer that contains the water-soluble salt of the aniline
c) the dichloromethane layer that contains the aniline
d) the dichloromethane layer that contains the salt of the aniline

Third, return whatever layer you selected above to a sep funnel, add diethyl ether, and then:

a) make the aqueous layer basic by addition of KOH(aq)
b) make the aqueous layer acidic by addition of HCl (aq)
c) at this point, I'm so confused I don't know

Fourth, shake and separate the organic and aqueous layers. Voila! The aniline is now separated and retrievable and in:

a) the aqueous layer
b) the organic layer
c) I'm still lost and haven't a clue.