1. Put the following in order from lowest to highest vapor pressure:

- pentane
- 2-pentanol
- pentanal
- 2,2-dimethylpropane

2. Which molecule contains the smallest bond angle?

- 109.5°
- 120°
- All 109.5°
- 2 lone pairs
- 1 lone pair

3. Which statement does NOT describe benzene?
A. All the carbon-carbon bond lengths are identical
B. It has at least one sp² hybridized carbon
C. The carbon-carbon bond order is 1.5
D. It is expected to be soluble in carbon tetrachloride
E. It has 3 delocalized electrons

4. Consider mixing ethyl methyl ether with water. How will the vapor pressure of the solution compare to the vapor pressure predicted by Raoult's Law?

H-bonding between solute + solvent
⇒ negative deviation from Raoult's Law
so vapor pressure is lower
5. Which of the following molecules can be reacted to produce the given compound?

A. butanoic acid and 1-propanol
B. propanoic acid and 1-butanol
C. butanoic acid and 2-propanol
D. propanoic acid and 1-propanol
E. propanoic acid and 2-propanol

6. Draw a segment of the polymer that is a result of the following monomer:

a. propene

b. 3-bromo-2-pentene

7. Give the monomer(s) needed to make the following polymer:

a. \(-\text{CH}_2\text{F}_2\text{CH}_2\text{CH}_2\text{F}_2\) or \(-\text{CH}_2\text{F}_2\text{CH}_2\text{F}_2\) 

b. \(-\text{CH}_3\text{CH}_{2}\text{CH}_{2}\text{CH}_3\) or \(-\text{CH}_3\text{CH}_{2}\text{CH}_{2}\text{CH}_3\)

c. \(-\text{CH}_3\text{O}\text{CH}_2\text{O}\text{CH}_2\text{O}\text{CH}_2\text{O}\text{CH}_2\text{O}\)

d. \(-\text{HO}\text{CH}_{2}\text{O}\text{CH}_{2}\text{O}\text{HO}\text{CH}_{2}\text{O}\text{CH}_{2}\text{O}\)