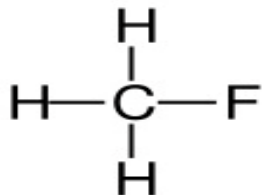


CHEM132

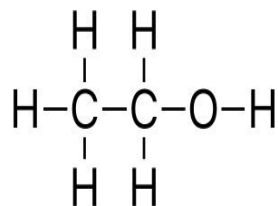
Quiz:

1. Which of the following substances exhibit no H bonding?

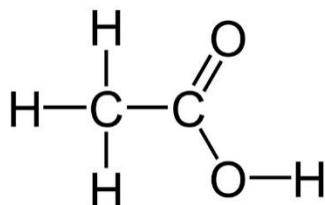
a.



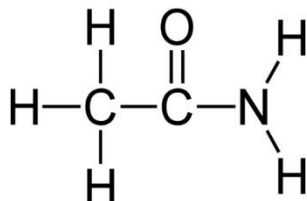
b.



c.



d.



Answer: a

2. In which of the following pair the higher boiling point substance listed first?

- a. CH_3F and CH_3Br
- b. $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$ and $\text{CH}_3\text{CH}_2\text{OCH}_3$
- c. CH_3F and CH_3NH_2
- d. C_2H_6 , and C_3H_8

Answer: b

3. **The strongest intermolecular interactions between pentane (C_5H_{12}) molecules arise from?**

- a. Dipole-dipole forces
- b. London dispersion forces
- c. Hydrogen bonding
- d. Ion-dipole interactions
- e. Carbon-carbon bonds

Answer: b

4. **Which of the following pairs is arranged with the particle of higher polarizability listed first?**

- a. CCl_4 , Cl_4
- b. H_2O , H_2Se
- c. C_6H_{14} , C_4H_{10}
- d. NH_3 , NF_3
- e. None of these choices is correct

Answer: c

5. **Comparing the energies of the following intermolecular forces on a KJ/ mol basis, which would normally have the highest energy (i.e., be the strongest force)?**

- a. Ion-induced dipole
- b. Dipole-induced dipole
- c. Ion-dipole
- d. Dipole-dipole
- e. Dispersion

Answer: c

6. **What is the molality of a solution consisting of 44.0 mL of benzene (C_6H_6 ; $d = 0.877 \text{ g/mL}$) in**

167 mL of hexane (C₆H₁₄; $d = 0.660$ g/mL, molar mass= 86.18g/mol)?

- a. 3.48
- b. 4.48
- c. 5.48
- d. 6.96

Answer: b

7. Which of the following aqueous solution will have the highest osmotic pressure?

- a. 0.02 M of sucrose at 50° C
- b. 0.012 M CaCl₂ at 50° C
- c. 0.008 M NaCl at 25° C
- d. 0.012 M CaCl₂ at 25° C

Answer: b

8. Calculate the freezing point of a solution made by dissolving 3.50 g of potassium chloride (molar mass= 74.55 g/mol) in 100.0 g of water. Assume ideal behavior for the solution; $K_f = 1.86^\circ\text{C}/\text{m}$.

- a. -1.7°C
- b. -0.9°C
- c. 0.0°C
- d. 0.9°C
- e. 1.7°C

Answer: a

9. Given the following liquids and their boiling points, which has the highest vapor pressure at its normal boiling point?

- a. Ethanol bp= 78°C
- b. Methanol bp= 65°C
- c. Water bp= 100°C
- d. The vapor pressure would all be the same

Answer: d

10. A solution that contains 55.0 g of ascorbic acid (Vitamin C) in 250. g of water freezes at -2.34°C . Calculate the molar mass (in units of g/mol) of the ascorbic acid. K_f of water is $1.86^{\circ}\text{C}/\text{m}$.

- a. 14.26
- b. 10.9
- c. 43.6
- d. 75
- e. 2.77

Answer: d

11. what is the molality of a solution which contains 0.10 ppm of lead (atomic mass= 207.2g/mol)?

- a. 4.8×10^{-10}
- b. 4.8×10^{-7}
- c. 4.8×10^{-4}
- d. 4.8×10^{-1}
- e. None of these choices is correct

Answer: b