

Chapter 12 Practice Questions

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) Which statement about surface tension is FALSE?
 - A) Increased intermolecular forces increase surface tension.
 - B) Items with densities lower than water will sink due to surface tension.
 - C) Liquids tend to minimize their surface area.
 - D) Molecules on the surface of the liquid have fewer molecules to interact with.
 - E) All of the above statements are true.

- 2) The rate of vaporization of a liquid can be increased by:
 1. increasing the surface area
 2. increasing the temperature
 3. increasing the strength of the intermolecular forces

A) 1 only B) 2 only C) 3 only D) 1 and 2 only E) 2 and 3 only

- 3) Compare a small pot of water that is boiling vigorously to a large pot of water that is boiling gently. Which statement is TRUE?
 - A) Both pots are boiling at the same temperature.
 - B) The vapor pressure of the liquid is greater than the pressure above the pot in each case.
 - C) The small pot is boiling at higher temperature than the large pot.
 - D) The large pot is boiling at a higher temperature than the small pot.
 - E) none of the above

- 4) What is the heat of vaporization(kJ/mol) if it takes 3,452 J of heat to completely vaporize 2.68 moles of the liquid at its boiling point?
 - A) 12.2
 - B) 1.29
 - C) 1288
 - D) 0.776
 - E) none of the above

- 5) If we supply additional heat to a solid in equilibrium with its liquid at the melting point, the thermal energy added is used to:
 - A) change solid to liquid.
 - B) change the liquid back to solid.
 - C) overcome the intermolecular forces that hold the solid together.
 - D) expand the solid.
 - E) raise the temperature of the solid above its melting point.

- 6) Which intermolecular force is present in all molecules and atoms?
 - A) X-forces
 - B) dispersion forces
 - C) dipole-dipole forces
 - D) hydrogen bonding
 - E) none of the above

7) The ability of sodium chloride to mix with water is most likely due to:

- A) dipole-dipole force
- B) ion-dipole force
- C) dispersion force
- D) hydrogen bonding
- E) none of the above

8) Which substance below has dipole-dipole forces?

- A) F_2
- B) CO_2
- C) H_2S
- D) CH_4
- E) none of the above

9) Which molecule below has hydrogen bonding?

- A) CH_3CH_2OH
- B) HCl
- C) H_2
- D) CH_4
- E) all of the above

10) Which intermolecular forces are found in CCl_4 ?

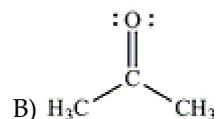
- A) X-forces
- B) hydrogen bonding
- C) dispersion forces
- D) dipole-dipole forces
- E) none of the above

11) Dry ice (solid CO_2) is which type of solid?

- A) metallic atomic solid
- B) ionic solid
- C) covalent atomic solid
- D) molecular solid
- E) nonbonding atomic solid

12) Which compound will have the highest boiling point?

A) CH_4



C) CH_3CH_2OH

D) CH_3CH_3

E) $CH_3CH_2CH_3$

Answer Key

Testname: PRACTICEQ_CH12

- 1) B
- 2) D
- 3) A
- 4) B
- 5) A
- 6) B
- 7) B
- 8) C
- 9) A
- 10) C
- 11) D
- 12) C