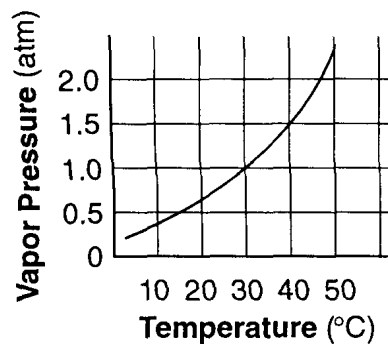


Name \_\_\_\_\_

- \_\_\_\_\_ 1) When the vapor pressure of a liquid is equal to the atmospheric pressure, the liquid will
- A) freeze                      B) boil  
C) melt                         D) condense
- \_\_\_\_\_ 2) Solid substances are most likely to sublime if they have
- A) high vapor pressures and strong intermolecular attractions  
B) high vapor pressures and weak intermolecular attractions  
C) low vapor pressures and strong intermolecular attractions  
D) low vapor pressures and weak intermolecular attractions
- \_\_\_\_\_ 3) At which temperature is the vapor pressure of ethanol equal to the vapor pressure of propanone at 35°C?
- A) 35°C                         B) 60.°C  
C) 82°C                         D) 95°C
- \_\_\_\_\_ 4) Which liquid has the lowest vapor pressure at 65°C?
- A) ethanoic acid                B) ethanol  
C) propanone                    D) water
- \_\_\_\_\_ 5) Based on intermolecular forces, which of these substances would have the highest boiling point?
- A) He    B) O<sub>2</sub>    C) CH<sub>4</sub>    D) NH<sub>3</sub>
- \_\_\_\_\_ 6) Using your knowledge of chemistry and the information in Reference Table *H*, which statement concerning propanone and water at 50°C is true?
- A) Propanone has a higher vapor pressure and stronger intermolecular forces than water.  
B) Propanone has a higher vapor pressure and weaker intermolecular forces than water.  
C) Propanone has a lower vapor pressure and stronger intermolecular forces than water.  
D) Propanone has a lower vapor pressure and weaker intermolecular forces than water.
- \_\_\_\_\_ 7) According to Reference Table *H*, what is the vapor pressure of propanone at 45°C?
- A) 22 kPa                         B) 33 kPa  
C) 70 kPa                         D) 98 kPa

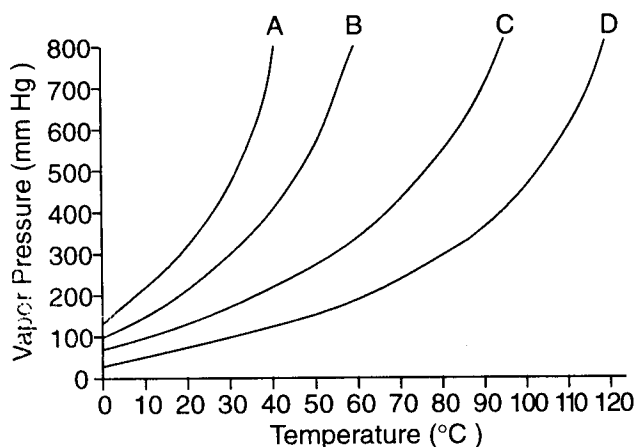
- \_\_\_\_\_ 8) As the temperature of a liquid increases, its vapor pressure
- A) decreases                    B) increases  
C) remains the same
- \_\_\_\_\_ 9) Based on Reference Table *H*, which sample has the highest vapor pressure?
- A) water at 20°C                B) water at 80°C  
C) ethanol at 50°C               D) ethanol at 65°C
- \_\_\_\_\_ 10) Which sample of water has the *lowest* vapor pressure?
- A) 100 mL at 50°C    B) 200 mL at 30°C  
C) 300 mL at 40°C    D) 400 mL at 20°C
- \_\_\_\_\_ 11) Based on Reference Table *H*, which substance has the weakest intermolecular forces?
- A) ethanoic acid                B) ethanol  
C) propanone                    D) water
- \_\_\_\_\_ 12) The graph below shows the relationship between vapor pressure and temperature for substance *X*.



What is the normal boiling point for substance *X*?

- A) 50°C    B) 20°C    C) 30°C    D) 40°C
- \_\_\_\_\_ 13) When the vapor pressure of water is 30 kPa, the temperature of the water is
- A) 20°C                         B) 40°C  
C) 70°C                         D) 100°C

14) The graph below represents the vapor curves of four liquids.



Which liquid has the highest normal boiling point?

- A) *A*    B) *B*    C) *C*    D) *D*

15) Which sample of water will have the highest vapor pressure?

- A) 10.0 ml at 62°C    B) 20.0 ml at 52°C  
C) 30.0 ml at 42°C    D) 40.0 ml at 32°C

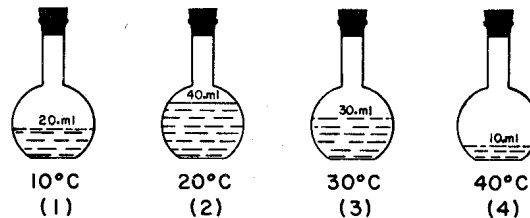
16) A sample of pure water at 50.°C has a vapor pressure closest to

- A) 5.0 kPa                  B) 12 kPa  
C) 50 kPa                  D) 101.3 kPa

17) In a closed system, as the temperature of a liquid increases, the vapor pressure of the liquid

- A) decreases  
B) increases  
C) remains the same

18) Base your answer to the following question on the diagrams below of four sealed flasks, each of which contains  $\text{H}_2\text{O}(\ell)$  at the temperature shown.



In which flask is the equilibrium vapor pressure of water the greatest?

- A) 1    B) 2    C) 3    D) 4

19) The vapor pressure of ethanol at its normal boiling point is

- A) 80 kPa                  B) 100 kPa  
C) 101.3 kPa              D) 273 kPa

20) The vapor pressure of 25 milliliters of water at 25°C will be the same as

- A) 50. ml of water at 25°C  
B) 25 ml of water at 50°C  
C) 50. ml of alcohol at 25°C  
D) 25 ml of alcohol at 50°C