socrative

Name _____
Date _____

Unit 5 (Phases and Phase Changes) Socrative Questions

Score _____

1. During the process of freezing, a liquid

(A) loses kinetic energy

(B) gains kinetic energy

(C) loses potential energy

(D) gains potential energy

2. A 100. milliliter sample of a gas at a pressure of 50.65 kPa is reduced to 25.33 kPa at constant temperature. What is the new volume of the gas?

(A) 290 mL

(B) 90.0 mL

(C) 50.0 mL

(D) 200.0 mL

3. Samples of $SO_2(g)$ and $N_2(g)$ contain equal numbers of molecules. If the gases are at STP, the samples have

(A) the same density

(B) equal volumes

(C) equal number of atoms

(D) the same molecular mass

4. The volume of a gas is inversely proportional to the kelvin temperature of a gas.

(T) True

(F) False

5. How much heat energy must be absorbed to completely melt 35.0 g of ice at 0^oC?

(A) 79,100 J

(B) 11,700 J

(C) 146 J

(D) 9.54 J

6. The concept of an ideal gas is used to explain the behavior of a gas sample.

(T) True

(F) False

7. A real gas behaves more like an ideal gas when the gas molecules are

(A) close and have strong attractive forces between them

(B) far apart and have weak attractive forces between them

(C) close and have weak attractive forces between them

(D) far apart and have strong attractive forces between them

8. Which change of phase is exothermic?

(A) gas to a liquid

(B) liquid to a gas

(C) solid to a liquid

(D) solid to a gas

9. Which statement is true?

(A) At a given temperature, the average kinetic energy of the particles is constantly changing.

(B) At a given temperature, the temperature value is a measure of the average kinetic energy of all the particles.

(C) At a given temperature, the temperature value is a measure of the total kinetic energy of all the particles.

(D) At a given temperature, all the particles have the same amount of kinetic energy.

10. A student determines that a sample of water absorbed 2,200 J of heat to change from 47°C to 59°C. What is the mass of the water sample?

(A) 43.85g

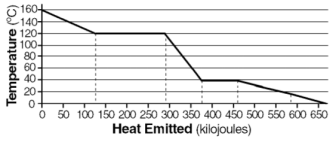
(B) 1104 g

(C) 4.39 g

(D) 11.04 g

11. What is the boiling point of the substance?

The graph below represents the uniform cooling of a substance starting as a gas at 160° C.



(A) 160°C

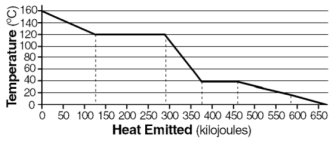
(B) 120°C

(C) 40°C

(D) 0°C

12. What energy change is occurring at 40°C?

The graph below represents the uniform cooling of a substance starting as a gas at 160 °C.



(A) The potential energy is increasing

(B) The potential energy is decreasing

(C) The kinetic energy is increasing

(D) The kinetic energy is decreasing

13. A sample of oxygen gas in a closed system has a volume of 200 milliliters at 600 K. If the pressure is held constant and the temperature is lowered to 300 K, the new volume of the gas will be

(A) 300 mL

(B) 100 mL

(C) 400 mL

(D) 200 mL

14. A real gas behaves least like an ideal gas under what conditions?

(A) 273K and 1atm

(B) 273K and 2atm

(C) 546K and 1atm

(D) 546K and 2atm

15. Under which conditions would a volume of a given sample of a gas certainly decrease?

(A) Decreased Pressure and Increased Temperature

(B) Decreased Pressure and Decreased Temperature

(C) Increased Pressure and Decreased Temperature

(D) Increased Pressure and Increased Temperature

16. A gas has a pressure of 120 kPa and a volume of 50 mL when its temperature is 127°C. What volume will the gas occupy at a pressure of 60 kPa and a temperature of -73°C?

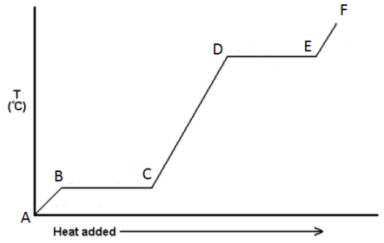
(A) 12.5mL

(B) 50mL

(C) 100mL

(D) 200mL

17. Between points B and C, the heat added is being used to



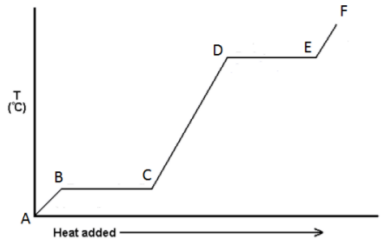
(A) increase temperature

(B) break (or weaken) the particle attractions of the solid

(C) break (or weaken) the particle attractions of the liquid

(D) boil the subtance

18. If heat is REMOVED from point E and the temperature is not changed, the substance will



(A) condense

(B) vaporize

(C) sublime

(D) freeze

19. The specific heat capacity of water is 4.18 J/ g oC. Adding 4.18 Joules of heat to a 1-gram sample of water will cause the water to

(A) change from solid to liquid

(B) change from a liquid to a solid

(C) change its temperature 1 degree Celsius

(D) change its temperature 4.18 degrees Celsius

20. Air in a closed cylinder is heated from 25°C to 36°C. If the initial pressure is 3.80 atm, what is the final pressure?

(A) 3.7 atm

(B) 3.9 atm

(C) 5.8 atm

(D) 2.0 atm

21. As liquid boils at its normal boiling point, its temperature

(A) decreases

(B) remains the same

(C) increases

22. The melting point of bromine is

(A) 266 degrees celcius

(B) -266 degrees celcius

(C) -7 degrees celcius

(D) 7 degrees celcius

23. How many grams are present in 10L of fluorine gas?

(A) 4.2 g

(B) 158 g

(C) 50 g

(D) 10 g