

Name \_\_\_\_\_

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

- 1) Evaporation is a cooling process and condensation is
  - A) a warming process.
  - B) a cooling process also.
  - C) neither a warming nor cooling process.
  
- 2) Evaporation is a cooling process because
  - A) the more energetic molecules are able to escape the liquid.
  - B) the temperature of the remaining liquid decreases.
  - C) of conduction and convection.
  - D) heat is radiated during the process.
  - E) none of these
  
- 3) Steam burns are more damaging than burns caused by boiling water because steam
  - A) has more energy per kilogram than boiling water.
  - B) gives up additional energy when it condenses.
  - C) Choices A and B are both correct.
  - D) Choices B and C are both incorrect.
  
- 4) We feel uncomfortably warm on a muggy day because water molecules are
  - A) evaporating and condensing on our bodies at the same rate.
  - B) condensing on our bodies.
  - C) evaporating from our moist bodies.
  
- 5) When a gas is changed to a liquid state, the gas
  - A) absorbs energy. B) releases energy.
  - C) neither releases nor absorbs energy. D) both releases and absorbs energy.
  
- 6) When a solid is changed to a liquid state, the solid
  - A) absorbs energy. B) releases energy.
  - C) neither releases nor absorbs energy. D) both releases and absorbs energy.
  
- 7) When heat is added to boiling water, its temperature
  - A) decreases. B) does not change. C) increases.
  
- 8) Boiling water does not increase in temperature when additional heat is applied because
  - A) the temperature doesn't change in a Change of Phase.
  - B) the increased heating produces increased boiling, and therefore increased cooling.
  - C) added input energy doesn't increase the water's internal energy.
  - D) none of these

- 9) For increased atmospheric pressure, the boiling temperature of a liquid
- A) goes up.
  - B) remains at 100 degrees C.
  - C) goes down.
- 10) Near the top of a mountain, water in an open pot boils at
- A) a lower temperature than at sea level.
  - B) a higher temperature than at sea level.
  - C) the same temperature as at sea level.
  - D) None of the above choices are true.
- 11) A volume of air has a temperature of 0 degrees Celsius. An equal volume of air that is twice as hot has a temperature of
- A) 273 degrees C.
  - B) 100 degrees C.
  - C) 64 degrees C.
  - D) 0 degrees C.
  - E) None of the above choices are correct.
- 12) The greater the difference in temperature between the input reservoir and the output reservoir for a heat engine, the
- A) less the efficiency.
  - B) greater the efficiency.
  - C) Neither – efficiency of a heat engine doesn't depend on temperature difference.
- 13) The first law of thermodynamics is a restatement of the
- A) principle of entropy.
  - B) Carnot cycle.
  - C) conservation of energy.
  - D) law of heat addition.
  - E) none of these
- 14) Systems that are left alone, tend to move toward a state of
- A) no entropy.
  - B) less entropy.
  - C) more entropy.
- 15) Entropy measures
- A) temperature at constant pressure.
  - B) temperature as volume increases.
  - C) messiness.
  - D) temperature at constant volume.
  - E) temperature as pressure increases.
- 16) During an adiabatic compression of an ideal gas
- A) no work is done on the gas.
  - B) no heat is supplied to or removed from the gas.
  - C) the internal energy of the gas remains constant.
  - D) the temperature of the gas does not change.
  - E) None of the above choices are true.

17) Suppose you rapidly stir some raw eggs with an eggbeater. The temperature of the eggs will

- A) remain unchanged. B) decrease. C) increase.

18) When a volume of air is compressed and no heat enters or leaves, the air temperature will

- A) decrease. B) increase. C) remain unchanged.

19) To wholly convert a given amount of heat energy into mechanical energy is

- A) possible using an atomic reactor.
- B) impossible regardless of the technique used.
- C) possible using a steam engine.
- D) possible using a simple machine.

20) To totally convert a given amount of mechanical energy into heat is

- A) possible.
- B) impossible.
- C) impossible to answer without additional information