Chapter 15 Pracitce

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

1) Translational motion is characterized by 1) _____
A) motion that carries a molecule from one place to another.
B) the motion used in measuring temperature.
C) both of these
D) neither of these

2) Which temperature scales have equal sized degrees? 2) _____
A) Fahrenheit and Celsius
B) Fahrenheit and Kelvin
C) Celsius and Kelvin
D) none of the above

3) Which temperature scale has the smallest sized degrees? 3) _____
A) Fahrenheit
B) Celsius
C) Kelvin
D) none of the above

4) In which is the temperature greater? 4) _____
A) boiling-hot tea in a cup
B) boiling-hot tea in a fire-engine pail
C) both the same

5) Internal energy is greater in a 5) _____
A) cup of boiling-hot tea.
B) fire-engine pail of boiling-hot tea.
C) both the same

6) When you touch a cold piece of ice with your finger, energy flows 6) _____
A) from your finger to the ice.
B) from the ice to your finger.
C) actually, both ways.

7) Compared to a giant iceberg, a hot cup of coffee has 7) _____
A) more internal energy and higher temperature.
B) higher temperature, but less internal energy.
C) a greater specific heat and more internal energy.
D) none of the above

8) Heat energy is measured in units of 8) _____
A) joules.
B) calories.
C) both of these
D) neither of these

9) When 10 grams of hot water cool by 1°C, the amount of heat given off is 9) _____
A) 41.9 calories.
B) 41.9 Calories.
C) 41.9 joules.
D) more than 41.9 joules.
E) none of the above

10) Which unit represents the most energy? 10) _____
A) calorie B) Calorie C) joule D) all the same

11) White-hot sparks from a 4th-of-July-type sparkler that strike your skin have relatively 11) _____
A) high temperatures.
B) few molecules per spark.
C) low transfer of energy.
D) all of the above
E) none of the above

12) Pour a liter of water at 40°C into a liter of water at 20°C and the final temperature of the two becomes 12) _____
A) less than 30°C. B) at or about 30°C. C) more than 30°C.

13) Pour two liters of water at 40°C into one liter of water at 20°C and the final temperature of the two becomes 13) _____
A) less than 30°C. B) at or about 30°C. C) more than 30°C.

14) Place a 1-kilogram block of iron at 40°C into 1 kilogram of water at 20°C and the final temperature of the two becomes 14) _____
A) less than 30°C. B) at or about 30°C. C) more than 30°C.

15) A substance with a high thermal inertia has a high 15) _____
A) temperature, in many cases. B) heat conductivity.
C) specific heat capacity. D) energy content.

16) The quantity of heat that a substance can transfer relates to its 16) _____
A) mass B) specific heat capacity
C) change in its temperature. D) all of the above

17) The specific heat capacity is highest for substances that absorb or release large quantities of heat for correspondingly 17) _____
A) small temperature changes. B) large temperature changes.
C) small or large changes in temperature. D) none of the above

18) Aluminum has a higher specific heat capacity than iron. This means that for equal masses of aluminum and iron, the metal that heats more quickly when the same amount of heat is applied is 18) _____
A) aluminum.
B) iron.
C) need more information

19) Tomatoes have a higher specific heat capacity than dough. This means that when you bite into a hot pizza 19) _____

A) the dough feels hotter than the tomato sauce.
B) the tomato sauce feels hotter than the dough.
C) since sauce and dough are at the same temperature, neither feels hotter.

20) A substance that cools down faster than others has a 20) _____

A) low specific heat capacity. B) high specific heat capacity.
C) either of these D) neither of these

21) Aluminum has a specific heat capacity more than twice that of copper. Place equal masses of aluminum and copper wire in a flame and the one to undergo the fastest increase in temperature will be 21) _____

A) copper. B) aluminum. C) both the same

22) If the specific heat capacity of water were lower than it is, a nice hot bath would be a 22) _____

A) shorter experience.
B) longer experience.
C) same regardless of water's specific heat capacity.

23) In terms of thermal expansion it is important that 23) _____

A) a key and its lock are made of similar or the same material.
B) the fillings in your teeth expand at the same rate as teeth.
C) iron rods and concrete in which they're embedded expand equally.
D) all of the above
E) none of the above

24) When most substances are heated, molecules inside move faster and take up more space, resulting in thermal 24) _____

A) bending. B) expansion. C) contraction. D) heat.

25) When a bimetallic bar made of copper and iron strips is heated, the bar bends toward the iron strip. The reason for this is 25) _____

A) iron gets hotter before copper.
B) copper gets hotter before iron.
C) copper expands more than iron.
D) iron expands more than copper.
E) none of the above

26) It is important that the two metals that compose a bimetallic strip have 26) _____

A) different conductivities.
B) different rates of expansion.
C) equal thicknesses.
D) all of the above
E) none of the above

27) Which of these expands when the temperature is lowered? 27) _____

A) iron
B) wood
C) ice water
D) helium
E) none of the above

28) A body of water will be deeper when its 28) _____

A) temperature rises. B) temperature drops. C) neither of these

29) Which of these is correct? 29) _____

A) a piece of solid iron floats in molten iron.
B) a piece of solid aluminum floats in molten aluminum.
C) a piece of ice floats in water.
D) all the above
E) none of the above

30) When ice water at 0°C is heated 30) _____

A) thermal expansion occurs.
B) thermal contraction occurs.
C) both occur until 4°C is reached

31) Open spaces in ice crystals contribute to 31) _____

A) decreased density. B) increased density. C) neither of these

32) Ice tends to form first at the 32) _____

A) surface of bodies of water.
B) bottom of bodies of water.
C) either depending on water depth.

33) If the temperature of a sample of water at 0°C is slightly increased, its volume 33) _____

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

34) If the temperature of a sample of water at 4°C is slightly increased, its volume 34) _____

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

35) If the temperature of a sample of water at 4°C is slightly lowered, its volume 35) _____

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

36) Before ice can form on a lake, all the water in the lake must be cooled to 36) _____

A) zero°C. B) 4°C.
C) –32°C. D) none of the above

Answer Key
Testname: CHAPTER 15 PRACTICE HEAT

1) C
2) C
3) A
4) C
5) B
6) A
7) B
8) C
9) C
10) B
11) D
12) B
13) C
14) A
15) C
16) D
17) A
18) B
19) B
20) A
21) A
22) A
23) B
24) B
25) C
26) B
27) C
28) A
29) C
30) C
31) A
32) A
33) B
34) A
35) A
36) B