

15SU 1025 exam 4 practice

Name _____

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

- 1) Which temperature scales have equal sized degrees? 1) _____
A) Fahrenheit and Kelvin
B) Celsius and Kelvin
C) Fahrenheit and Celsius
D) none of the above
- 2) During a very cold winter, water pipes sometimes burst due to 2) _____
A) the ground contracting when colder.
B) water contracting when freezing.
C) water expanding when freezing.
D) thawing producing pressure on the pipes.
E) none of the above
- 3) One of water's interesting thermal properties is that when heated it takes a relatively 3) _____
A) short time in changing temperature.
B) same amount of time to cool.
C) long time in changing temperature.
D) none of the above
- 4) Tomatoes have a higher specific heat capacity than dough. This means that when you bite into a 4) _____
hot pizza
A) since sauce and dough are at the same temperature, neither feels hotter.
B) the dough feels hotter than the tomato sauce.
C) the tomato sauce feels hotter than the dough.
- 5) A closed, sealed can of air placed on a hot stove. The contained air undergoes an increase in 5) _____
A) mass.
B) temperature.
C) both of these
D) neither of these
- 6) If the temperature of a sample of water at 4°C is slightly lowered, its volume 6) _____
A) remains the same.
B) increases.
C) decreases.
- 7) When most substances are heated, molecules inside move faster and take up more space, 7) _____
resulting in thermal
A) expansion.
B) heat.
C) bending.
D) contraction.
- 8) The fact that gasoline overflows a full tank on a hot day is evidence that 8) _____
A) gasoline expands more with increasing temperature than its tank.
B) the tank contracts while gasoline expands with temperature.
C) both of these
D) neither of these

- 9) Which of these is correct? 9) _____
A) a piece of solid aluminum floats in molten aluminum.
B) a piece of solid iron floats in molten iron.
C) a piece of ice floats in water.
D) all the above
E) none of the above
- 10) Before ice can form on a lake, all the water in the lake must be cooled to 10) _____
A) 4°C. B) -32°C.
C) zero°C. D) none of the above
- 11) The moderate temperatures of islands throughout the world has much to do with water's 11) _____
A) high evaporation rate.
B) absorption of solar energy.
C) vast supply of internal energy.
D) high specific heat capacity.
E) good conductivity.
- 12) If the specific heat of water were lower than it is, ponds in the cold of winter would be 12) _____
A) less likely to freeze.
B) neither more nor less likely to freeze.
C) more likely to freeze.
- 13) A region of expanding air tends to 13) _____
A) warm. B) cool.
C) both of the these D) neither of these
- 14) When a hot object makes thermal contact with a cold object, the direction of 14) _____
A) temperature is from hot to cold. B) internal energy flow is from hot to cold
C) both of these D) neither of these
- 15) Both black and white road surfaces radiate energy. At midnight on a starry night the warmer road surface is the 15) _____
A) white surface.
B) black surface.
C) neither, as no noticeable difference.
- 16) Soaring birds and glider pilots can remain aloft for hours without expending power, due to 16) _____
A) radiation. B) conduction.
C) convection. D) all of the above
- 17) Energy transfer by convection is primarily restricted to 17) _____
A) gases.
B) liquids.
C) solids.
D) fluids.
E) none of the above

- 18) A water-filled paper cup held in a flame will not catch fire. This is because 18) _____
A) water is an excellent conductor of heat.
B) the paper cup cannot become appreciably hotter than the water it contains.
C) the inside of the paper is wet.
D) paper is a poor conductor of heat.
- 19) A good heat conductor is 19) _____
A) a good insulator. B) a poor insulator. C) neither of these
- 20) If you were caught in freezing weather with only a candle for heat, you would be warmer in 20) _____
A) a wooden house. B) a tent.
C) a car. D) an igloo.
- 21) When moth balls sublime to gas they 21) _____
A) absorb energy. B) release energy.
C) both of these D) neither of these
- 22) When liquids change to a solids, they 22) _____
A) absorb energy. B) release energy.
C) both of these D) neither of these
- 23) The addition of salt to water affects its 23) _____
A) viscosity.
B) liquidity.
C) crystal composition.
D) freezing point.
E) none of the above
- 24) If you quickly run away from the orchestra at a concert, the frequency of the sound you hear will 24) _____
be
A) increased. B) decreased. C) neither of these.
- 25) The vibrations of a transverse wave move 25) _____
A) that changes with speed.
B) at right angles to the direction of wave travel.
C) along the direction of wave travel.
- 26) A floating leaf oscillates up and down two complete cycles in one second as a 10-meter long 26) _____
water wave passes by. What is the wave's speed?
A) 40 m/s
B) 2 m/s
C) 20 m/s
D) 10 m/s
E) more than 40 m/s

- 27) The Doppler effect is characteristic of 27) _____
A) sound waves.
B) light waves.
C) water waves.
D) all of the above
E) none of the above
- 28) A bow wave is produced when a speed boat moves 28) _____
A) as fast as the waves it produces. B) faster than the waves it produces.
C) nearly as fast as the waves it produces. D) none of the above
- 29) The number of nodes, including the end points, in a standing wave that is two wavelengths long is 29) _____
A) 1.
B) 3.
C) 2.
D) 4.
E) none of the above
- 30) The phenomenon of beats is a result of sound 30) _____
A) interference.
B) refraction.
C) reflection.
D) all of the above
E) none of the above
- 31) Wave interference occurs in 31) _____
A) longitudinal waves. B) transverse waves.
C) both of the above D) none of the above
- 32) Sound travels faster in air if the air temperature is 32) _____
A) average. B) warm.
C) cold. D) any of the above
- 33) Heat energy travels from an object with a high 33) _____
A) internal energy to an object with a lower internal energy.
B) temperature to an object with a lower temperature.
C) both of the above
D) none of the above
- 34) If you measure the width of an outdoor barn with a steel tape on a very cold day, your measured width will be 34) _____
A) a bit long.
B) a bit short.
C) the same as on an average-temperature day.
- 35) Heat energy is measured in units of 35) _____
A) joules. B) calories.
C) both of these D) neither of these

- 36) 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 36) _____
A) copper. B) aluminum. C) both the same
- 37) Sun's radiant energy is composed of shorter wavelengths than Earth's due to Sun's greater 37) _____
A) surface temperature. B) size.
C) both of these D) neither of these
- 38) Which of these are good insulators? 38) _____
A) wood.
B) feathers.
C) snow.
D) all the above
E) none of the above
- 39) In terms of transferring heat, red-hot wooden coals 39) _____
A) conduct quite well. B) conduct poorly.
C) convect poorly. D) radiate poorly.
- 40) Ice is put in a cooler to cool the contents. To speed up the cooling process, the ice can be 40) _____
A) drained of water periodically.
B) kept away from the food.
C) wrapped in newspaper.
D) broken into smaller pieces.
E) none of the above
- 41) The temperature at which a liquid freezes is 41) _____
A) the same temperature at which its solid form melts.
B) affected by foreign ions.
C) both of these
D) neither of these
- 42) Radio waves travel at the speed of light, 300,000 km/s. The wavelength of a radio wave received 42) _____
at 100 megahertz is
A) 30 m.
B) 0.3 m.
C) 3.0 m.
D) 300 m.
E) none of the above
- 43) A less intense sonic boom at ground level can occur if the aircraft 43) _____
A) is more streamlined.
B) is smaller.
C) flies higher.
D) all of the above
E) none of the above

- 44) A dolphin perceives its environment by the sense of _____
A) sight. B) sound.
C) both of these D) neither of these
- 45) The form of heat transfer that doesn't depend on a medium is _____
A) convection. B) conduction.
C) radiation. D) all of the above
- 46) When condensation occurs inside your bedroom window, the air outside is appreciably _____
A) colder. B) warmer.
C) both of these D) neither of these
- 47) A wave travels an average distance of one meter in one second with a frequency of 1 hertz. Its amplitude is _____
A) 1 meter. B) more than 1 meter.
C) less than 1 meter. D) need more information
- 48) Which of the following normally warms up fastest when heat is applied? _____
A) iron
B) wood
C) water
D) glass
E) all of the above
- 49) A Thermos bottle has double glass walls with silver coating on the glass surfaces that face each other. The silver coating reduces energy transfer by _____
A) conduction.
B) radiation.
C) convection.
D) all the above
E) none of the above
- 50) To illustrate regelation with ice it is important that a _____
A) string is used. B) wire is used.
C) either of these D) none of the above

Answer Key

Testname: 15 SU 1025 TEXT 4 PRACTICE

- 1) B
- 2) C
- 3) C
- 4) C
- 5) B
- 6) B
- 7) A
- 8) A
- 9) C
- 10) A
- 11) D
- 12) C
- 13) B
- 14) B
- 15) A
- 16) C
- 17) D
- 18) B
- 19) B
- 20) D
- 21) B
- 22) B
- 23) D
- 24) B
- 25) B
- 26) C
- 27) D
- 28) B
- 29) E
- 30) A
- 31) C
- 32) B
- 33) B
- 34) A
- 35) C
- 36) A
- 37) A
- 38) D
- 39) B
- 40) D
- 41) A
- 42) C
- 43) D
- 44) C
- 45) C
- 46) A
- 47) D
- 48) A
- 49) B

Answer Key

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50) B