Review packet for Milestone Test

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. One example of a physical change is
a. burning paper.
b. baking cookies.
c. heating table sugar.
d. dissolving salt in water.

____ 2. One example of a chemical change is
a. filtering.
b. burning wood.
c. boiling water.
d. crushing a can.

____ 3. The energy of matter in motion is called
a. kinetic energy.
b. potential energy.
c. chemical energy.
d. electromagnetic energy.

____ 4. Radio waves, visible light from the sun, infrared "rays" from heat lamps, the waves that heat food in a microwave oven, ultraviolet rays, and X-rays are all considered types of
a. electrical energy.
b. electromagnetic energy.
c. chemical energy.
d. potential energy.

____ 5. Substances that CANNOT be broken down chemically into other substances are
a. elements.
b. compounds.
c. mixtures.
d. solutions.

____ 6. All elements are composed of extremely small particles called
a. compounds.
b. mixtures.
c. atoms.
d. molecules.

____ 7. Which of the following is NOT an example of a chemical change?
a. gas burning on a stove
b. rust forming on an iron fence
c. salt dissolving in a glass of water
d. using electricity to break down water into hydrogen and oxygen

____ 8. How would you calculate the density of an object?
a. Divide its weight by its volume.
b. Divide its mass by its volume.
c. Multiply its volume times its mass.

d. Multiply its weight times its mass.

____ 9. A disturbance that transfers energy from place to place is called a
a. wave.
b. medium.
c. vibration.
d. compression.

____ 10. Mechanical waves are created when a source of energy causes a medium to
a. move.
b. compress.
c. expand.
d. vibrate.

____ 11. The highest parts of a transverse wave are called
a. troughs.
b. crests.
c. nodes.
d. wavelengths.

____ 12. Waves that move the particles of the medium parallel to the direction in which the waves are traveling are called
a. longitudinal waves.
b. transverse waves.
c. surface waves.
d. combination waves.

____ 13. The maximum distance that the particles of a medium move from the rest position is the
a. amplitude of the wave.
b. wavelength of the wave.
c. frequency of the wave.
d. speed of the wave.

____ 14. The distance between two corresponding parts of a wave is the wave's
a. amplitude.
b. wavelength.
c. frequency.
d. speed.

____ 15. The speed of a wave is its wavelength multiplied by its
a. amplitude.
b. vibration.
c. frequency.
d. reflection.

____ 16. The bending of waves due to a change in speed is called
a. reflection.
b. refraction.
c. diffraction.
d. interference.

____ 17. The bending of waves around the edge of a barrier is known as
a. reflection.

b. refraction.
c. diffraction.
d. interference.

____ 18. The interaction between two waves that meet is called
a. reflection.
b. refraction.
c. diffraction.
d. interference.

____ 19. What occurs when vibrations traveling through an object match the object's natural frequency?
a. reflection
b. refraction
c. diffraction
d. resonance

____ 20. Mechanical waves are classified according to
a. their size.
b. their shape.
c. how they move.
d. their source.

____ 21. Refraction occurs when a wave
a. enters a new medium at an angle.
b. hits a surface through which it cannot pass.
c. moves around a barrier.
d. interferes with another wave.

____ 22. When a wave moves through an opening in a barrier, it
a. is reflected.
b. bends and spreads out.
c. forms nodes and antinodes.
d. speeds up.

____ 23. As in the case of unlike magnetic poles, unlike electric charges
a. attract each other.
b. repel each other.
c. exist in pairs.
d. do not interact.

____ 24. The buildup of charges on an object is called
a. static discharge.
b. static electricity.
c. positive charge.
d. negative charge.

____ 25. Clothes in a dryer acquire static cling by
a. friction.
b. conduction.
c. induction.
d. static discharge.

____ 26. The loss of static electricity as electric charges move off an object is called

a. friction.
b. conduction.
c. induction.
d. static discharge.

____ 27. Suppose you acquire a positive charge from walking across a carpet. You then touch a doorknob and receive a shock. This leaves you
a. positively charged.
b. negatively charged.
c. uncharged.
d. electrically neutral.

____ 28. What causes charges to move in a circuit?
a. voltage
b. energy
c. electricity
d. magnetism

____ 29. An electric current will always follow
a. the path of least resistance.
b. a path toward the north pole.
c. a path toward the south pole.
d. the path that leads through insulators.

____ 30. According to Ohm's law, what is the resistance of a light if the voltage is 9.0 volts and the current is 0.30 amps?
a. 0.033 ohms
b. 2.7 ohms
c. 30 ohms
d. 8.7 ohms

____ 31. In a series circuit with three bulbs,
a. there are many paths for the current to take.
b. the remaining two bulbs are not affected if one bulb burns out.
c. all of the bulbs become dimmer as more bulbs are added.
d. a switch is never used.

____ 32. In a series circuit with three bulbs, adding another bulb will
a. make the nearest bulb brighter.
b. make some of the bulbs dimmer.
c. make all the bulbs brighter.
d. make all the bulbs dimmer.

____ 33. In a parallel circuit with three bulbs,
a. the bulbs must all be located on the same branch.
b. there is only one path for the current to take.
c. current from each bulb has its own path.
d. the overall resistance increases if a new branch is added.

____ 34. A device to measure electrical potential energy difference, or voltage, is called a(an)
a. ammeter.
b. voltmeter.
c. series meter.

d. Ohm meter.

____ 35. A connection that allows current to take the path of least resistance is called a
a. short circuit.
b. series circuit.
c. parallel circuit.
d. grounded circuit.

____ 36. A complete, unbroken path through which electric charges can flow is a(an)
a. electric circuit.
b. electrical resistance.
c. magnetic field line.
d. magnetic pole.

____ 37. Materials that allow the charges of an electric current to move freely through them are called
a. insulators.
b. conductors.
c. resistors.
d. magnets.

____ 38. A device used to open and close an electric circuit is a(an)
a. light bulb.
b. energy source.
c. switch.
d. resistor.

____ 39. Mendeleev created the first periodic table by arranging elements in order of
a. decreasing atomic mass.
b. increasing atomic mass.
c. increasing atomic number.
d. increasing melting points and densities.

____ 40. Which of the following scientists inferred that an atom's positive charge must be clustered in the nucleus?
a. Niels Bohr
b. John Dalton
c. Ernest Rutherford
d. J.J. Thomson

____ 41. Most metals are NOT
a. ductile.
b. good conductors of heat and electricity.
c. liquid at room temperature.
d. malleable.

____ 42. In general, which of the following statements about metals is true?
a. Metals need to be stored in sealed containers for safety.
b. Metals show a wide range of chemical properties.
c. Metals are highly reactive substances.
d. Metals do not react with oxygen.

____ 43. In the periodic table, the most reactive metals are found
a. in Group 1, the first column on the left.
b. in Period 1, the first row across the top.

c. in Groups 13 through 16 in the center.
d. in Periods 6 and 7 at the bottom.

____ 44. Which group contains the most elements?
a. metalloids
b. nonmetals
c. metals
d. transition elements

____ 45. A material is said to be ductile if it
a. can be pulled out, or drawn, into a long wire.
b. can be hammered or rolled into flat sheets and other shapes.
c. can transfer heat or electricity to another material.
d. is a mixture of a metal with at least one other element.

____ 46. The elements in a column of the periodic table
a. have similar properties.
b. are in the same period.
c. have the same atomic mass.
d. have very similar chemical symbols.

____ 47. What information in the periodic table indicates the number of protons in an atom?
a. the position of the element in its column
b. the element's chemical symbol
c. the element's atomic number
d. the element's atomic mass

____ 48. The two most common alkaline earth metals are
a. copper and zinc.
b. iron and silver.
c. sodium and potassium.
d. calcium and magnesium.

____ 49. Which of the following statements about transition metals is true?
a. They are never found uncombined in nature.
b. They include familiar metals such as gold, silver, copper, and nickel.
c. They are so soft that they can be cut with an ordinary knife.
d. They are the most reactive of all the types of metals.

____ 50. Which group of elements shares characteristics with both metals and nonmetals?
a. salts
b. metalloids
c. halogens
d. lanthanides

____ 51. The elements that do not ordinarily form compounds are
a. elements in the carbon family.
b. metals.
c. halogens.
d. noble gases.

____ 52. Fluorine, chlorine, bromine, and iodine are part of a family called
a. noble gases.

b. metalloids.
c. halogens.
d. alkali metals.

____ 53. The ability to do work is called
a. velocity.
b. energy.
c. conversion.
d. friction.

____ 54. Energy is measured in units called
a. joules.
b. pounds.
c. meters.
d. horsepower.

____ 55. The energy associated with motion is called
a. kinetic energy.
b. elastic potential energy.
c. gravitational potential energy.
d. nuclear energy.

____ 56. Kinetic energy increases as
a. mass increases and velocity decreases.
b. mass decreases and velocity increases.
c. both mass and velocity increase.
d. both mass and velocity decrease.

____ 57. The total potential and kinetic energy of the particles in an object is called
a. mechanical energy.
b. thermal energy.
c. chemical energy.
d. electrical energy.

____ 58. An example of something that stores chemical energy is
a. lightning.
b. a microwave.
c. a match.
d. light.

____ 59. Moving water can be used to produce electricity because
a. most forms of energy can be converted into other forms.
b. energy cannot be converted into other forms of energy.
c. potential energy can be converted into kinetic energy, but not vice versa.
d. kinetic energy can be converted into potential energy, but not vice versa.

____ 60. When you rub your hands together on a cold day, you use friction to convert
a. mechanical energy into thermal energy.
b. thermal energy into nuclear energy.
c. nuclear energy into electrical energy.
d. electrical energy into electromagnetic energy.

____ 61. The scientist who suggested that energy can be created under certain conditions was

a. Newton.
b. Einstein.
c. Wright.
d. Pascal.

____ 62. The process of burning a fuel is called
a. combustion.
b. meltdown.
c. acceleration.
d. conduction.

____ 63. The type of energy stored by fossil fuels such as coal is
a. kinetic energy.
b. mechanical energy.
c. chemical potential energy.
d. electromagnetic energy.

____ 64. Which of the following has kinetic energy?
a. a rock poised for a fall
b. an archer's bow that is drawn back
c. a rolling bowling ball
d. a car waiting at a red light

____ 65. Potential energy that depends on height is called
a. kinetic energy.
b. gravitational potential energy.
c. elastic potential energy.
d. mechanical energy.

____ 66. Energy stored in the nucleus of an atom is called
a. electromagnetic energy.
b. nuclear energy.
c. mechanical energy.
d. chemical energy.

____ 67. Visible light is an example of
a. chemical energy.
b. electrical energy.
c. electromagnetic energy.
d. nuclear energy.

____ 68. Niagara Falls is a good example of
a. kinetic energy being converted into potential energy.
b. potential energy being converted into kinetic energy.
c. energy being lost.
d. energy being created.

____ 69. The law of conservation of energy states that when one form of energy is converted into another,
a. energy is destroyed in the process.
b. no energy is destroyed in the process.
c. energy is created in the process.
d. some amount of energy cannot be accounted for.

____ 70. The rate at which energy is transferred is called
a. joules.
b. power.
c. work.
d. time.

____ 71. The energy associated with the motion and position of an object is
a. kinetic energy.
b. potential energy.
c. gravitational potential energy.
d. mechanical energy.

____ 72. A change from one form of energy into another is called
a. gravitational potential energy.
b. work.
c. conservation of energy.
d. an energy transformation.

____ 73. A pole-vaulter first converts kinetic energy into
a. thermal energy.
b. chemical energy.
c. mechanical energy.
d. elastic potential energy.

____ 74. Which of the following is an example of exerting a force?
a. a child running through a field
b. a train speeding down a track
c. a carpenter hammering a nail
d. an airplane soaring through the sky

____ 75. What happens when two forces act in the same direction?
a. They cancel each other out.
b. The stronger one prevails.
c. They add together.
d. Their sum divided by two is the total force.

____ 76. The tendency of an object to resist change in its motion is known as
a. mass.
b. inertia.
c. force.
d. balance.

____ 77. The greater the mass of an object,
a. the easier the object starts moving.
b. the greater its inertia.
c. the more balanced it is.
d. the more space it takes up.

____ 78. The force of gravity on a person or object on the surface of a planet is called
a. mass.
b. terminal velocity.
c. weight.
d. free fall.

____ 79. The force that one surface exerts on another when the two rub against each other is called
a. friction.
b. acceleration.
c. inertia.
d. gravity.

____ 80. Which of the following is an example of rolling friction?
a. your shoes on a sidewalk as you walk
b. bike tires on the road as you ride
c. a boat on the water as it sails
d. two hands rubbing together

____ 81. When the only force acting on a falling object is gravity, the object is said to be
a. stationary.
b. decelerating.
c. in free fall.
d. a projectile.

____ 82. Air resistance is a type of
a. motion.
b. acceleration.
c. velocity.
d. friction.

____ 83. The force of gravity on a person or object at the surface of a planet is known as
a. mass.
b. inertia.
c. air resistance.
d. weight.

____ 84. The law of universal gravitation states that any two objects in the universe, without exception,
a. attract each other.
b. repel each other.
c. combine to provide a balanced force.
d. create friction.

____ 85. Forces can be added together only if they are
a. acting on the same object.
b. balanced forces.
c. unaffected by gravity.
d. substantial.

____ 86. The product of an object's mass and velocity is called its
a. inertia.
b. momentum.
c. acceleration.
d. force.

____ 87. The achievement of lifting a rocket off the ground and into space can be explained by
a. Newton's first law.
b. Newton's second law.
c. Newton's third law.

d. the law of conservation of momentum.

____ 88. Any force that causes an object to move in a circle is called a(an)
a. balanced force.
b. unbalanced force.
c. gravitational force.
d. centripetal force.

____ 89. In physical science, a push or a pull is called a(an)
a. force.
b. acceleration.
c. inertia.
d. motion.

____ 90. The momentum of an object is in the same direction as its
a. force.
b. acceleration.
c. velocity.
d. inertia.

____ 91. How can you increase the momentum of an object?
a. by decreasing its velocity
b. by increasing its mass
c. by increasing its friction
d. by decreasing its acceleration

____ 92. Which of the following is an example of increasing friction intentionally?
a. waxing skis
b. adding grease to gears on a bike
c. throwing sand on an icy driveway
d. oiling a squeaky door

____ 93. The force that pulls falling objects toward Earth is called
a. gravity.
b. free fall.
c. acceleration.
d. air resistance.

____ 94. Balanced forces acting on an object
a. always change the object's motion.
b. sometimes change the object's motion.
c. never change the object's motion.
d. are not related to motion.

____ 95. A material that reflects or absorbs any light that strikes it is
a. opaque.
b. transparent.
c. translucent.
d. concave.

____ 96. What happens when parallel rays of light hit a smooth surface?
a. diffuse reflection
b. diffraction

c. refraction
d. regular reflection

____ 97. When the surface of a mirror curves inward, like the inside of a bowl, it is called a
a. plane mirror.
b. convex mirror.
c. concave mirror.
d. diffuse mirror.

____ 98. The bending of light rays as they enter a new medium is called
a. diffuse reflection.
b. regular reflection.
c. refraction.
d. diffraction.

____ 99. What happens when light passes from air into water?
a. The light speeds up.
b. The light continues at the same speed.
c. The light slows down.
d. The light forms a mirage.

____ 100. A curved piece of glass or other transparent material that is used to refract light is called a(an)
a. mirror.
b. lens.
c. reflector.
d. optical fiber.

____ 101. How would a tomato look under blue light?
a. The tomato would seem to disappear.
b. The tomato would still appear red.
c. The tomato would appear black.
d. The tomato would appear white.

____ 102. The primary colors of light are
a. red, yellow, and blue.
b. yellow, cyan, and magenta.
c. red, green, and blue.
d. red, orange, yellow, green, blue, and violet.

____ 103. Colored substances that are used to color other materials are called
a. pigments.
b. lenses.
c. mirages.
d. filters.

____ 104. The colored ring of muscle that controls the size of the pupil is called the
a. cornea.
b. iris.
c. lens.
d. retina.

____ 105. The signals generated by the rods and cones are carried to your brain by the
a. cornea.

b. pupil.
c. optic nerve.
d. lens.

____ 106. A person is nearsighted if he or she
a. can see far away things very well.
b. has eyeballs that are a little too short.
c. has eyeballs that are a little too long.
d. sees nearby objects as blurry.

____ 107. Farsightedness can usually be corrected using
a. convex mirrors.
b. concave mirrors.
c. convex lenses.
d. concave lenses.

____ 108. Clear glass, water, and air are examples of what kind of material?
a. opaque
b. fluid
c. translucent
d. transparent

____ 109. What occurs when parallel rays of light hit a rough or bumpy surface?
a. regular reflection
b. diffuse reflection
c. refraction
d. diffraction

____ 110. An image of a distant object caused by refraction of light is called a
a. prism.
b. mirage.
c. rainbow.
d. hologram.

____ 111. Any two primary colors of light combined in equal amounts produce
a. a complementary color.
b. a secondary color.
c. a fluorescent color.
d. the third primary color.

____ 112. Rods and cones are the light-sensitive cells on the
a. cornea.
b. iris.
c. pupil.
d. retina.

____ 113. What type of image does a plane mirror produce?
a. real and inverted
b. virtual and inverted
c. real and upright
d. virtual and upright

____ 114. A flat sheet of glass with a silver-colored coating on one side is a

a. plane lens.
b. plane mirror.
c. convex mirror.
d. concave lens.

____ 115. What happens if you break a magnet in half?
a. One half will have a north pole only and one half will have a south pole only.
b. Neither half will have a pole.
c. Each half will be a new magnet, with both a north and south pole.
d. Neither half will be able to attract or repel.

____ 116. Magnetic poles that are alike
a. attract each other.
b. repel each other.
c. do not interact.
d. have the same shape.

____ 117. The region around a magnet where the magnetic force is exerted is known as its
a. magnetic pole.
b. lodestone.
c. magnetic field.
d. magnetic domain.

____ 118. An example of a common ferromagnetic material is
a. plastic.
b. hydrogen.
c. nickel.
d. copper.

____ 119. Magnetic field lines around a bar magnet
a. are only perpendicular to the magnet.
b. spread out from one pole and curve around to the other.
c. cross back and forth over one another.
d. are perfectly straight.

____ 120. Where is the magnetic pole in the Northern Hemisphere?
a. at the geographic north pole
b. at the geographic south pole
c. along the coast of Antarctica
d. in northern Canada

____ 121. Magnetism can be considered a
a. nuclear property.
b. physical property.
c. chemical property.
d. nonmetallic property.

____ 122. What is magnetism?
a. the force of attraction or repulsion of magnetic materials
b. a property of all rocks
c. a type of rock
d. a lodestar

____ 123. Magnetic poles that are unlike
a. attract each other.
b. repel each other.
c. do not interact.
d. point in the same direction.

____ 124. What is an electron?
a. a particle that carries a negative charge
b. a particle that carries a positive charge
c. a particle that does not carry an electric charge
d. the smallest particle of an element that has the element's properties

____ 125. Most materials are not magnetic because
a. they lack magnetic fields.
b. their magnetism has worn off.
c. their magnetic domains are arranged randomly.
d. Earth's heat has destroyed their magnetism.

____ 126. Every magnet, regardless of its shape, has two
a. magnetic poles.
b. magnetic charges.
c. magnetic fields.
d. magnetic domains.

____ 127. The magnetic properties of a material depend on its
a. shape.
b. atomic structure.
c. position.
d. magnetic poles.

____ 128. What is one way you can destroy a magnet's magnetism?
a. by putting it in water
b. by cooling it
c. by heating it
d. by breaking it into pieces

____ 129. A temporary magnet
a. keeps its magnetism for a long time.
b. cannot be destroyed.
c. easily loses its magnetism.
d. has two north poles.

____ 130. When an object's distance from another object is changing,
a. it is in motion.
b. it is speeding.
c. it has a high velocity.
d. it is accelerating.

____ 131. Speed equals distance divided by
a. time.
b. velocity.
c. size.
d. motion.

____ 132. When you know both the speed and direction of an object's motion, you know the
a. average speed of the object.
b. acceleration of the object.
c. distance the object has traveled.
d. velocity of the object.

____ 133. You can show the motion of an object on a line graph in which you plot distance against
a. velocity.
b. time.
c. speed.
d. direction.

____ 134. The steepness of a line on a graph is called the
a. rise.
b. run.
c. slope.
d. the vertical axis.

____ 135. The rate at which velocity changes is called
a. instantaneous speed.
b. direction.
c. acceleration.
d. motion.

____ 136. Which of these is an example of deceleration?
a. a bird taking off for flight
b. a roller coaster moving down a steep hill
c. a car approaching a red light
d. an airplane following a straight flight path

____ 137. To determine the acceleration rate of an object, you must calculate the change in speed during each unit of
a. velocity.
b. time.
c. motion.
d. deceleration.

____ 138. Average speed is
a. equivalent to velocity.
b. the rate at which an object is moving at a given instant.
c. the rate at which a slope changes.
d. the total distance traveled divided by the total time.

____ 139. A place or object used for comparison to determine if something is in motion is called
a. a position.
b. a reference point.
c. a constant.
d. velocity.

____ 140. On a graph showing distance versus time, a horizontal line represents an object that is
a. moving at a constant speed.
b. increasing its speed.
c. decreasing its speed.

d. not moving at all.

____ 141. If you know the distance an object has traveled in a certain amount of time, you can determine
a. the size of the object.
b. the speed of the object.
c. the location of the object.
d. the acceleration of the object.

____ 142. If the speed of an object does NOT change, the object is traveling at a
a. constant speed.
b. average speed.
c. increasing speed.
d. decreasing speed.

____ 143. Changing direction is an example of a kind of
a. acceleration.
b. speed.
c. velocity.
d. constant rate.

____ 144. If a bicyclist travels 30 kilometers in two hours, her average speed is
a. 30 km/h.
b. 60 km/h.
c. 15 km/h.
d. 2 km/h.

____ 145. The moon accelerates because it is
a. in a vacuum in space.
b. continuously changing direction.
c. a very large sphere.
d. constantly increasing its speed of orbit.

____ 146. If an object moves in the same direction and at a constant speed for 4 hours, which of the following is true?
a. The object's speed changed during the 4 hours.
b. The object's velocity did not change.
c. The object accelerated during the 4 hours.
d. The object decelerated during the 4 hours.

____ 147. In an acceleration graph showing speed versus time, a straight line shows the acceleration is
a. decreasing.
b. increasing.
c. changing.
d. constant.

____ 148. What kind of line on a distance-versus-time graph indicates that the object is accelerating?
a. curved
b. horizontal
c. diagonal
d. vertical

____ 149. A solid is a state of matter that has a(an)
a. indefinite volume and an indefinite shape.
b. definite volume and a definite shape.

c. definite volume and an indefinite shape.
d. indefinite volume and a definite shape.

____ 150. The resistance of a liquid to flowing is its
a. pressure.
b. temperature.
c. viscosity.
d. volume.

____ 151. Particles of a liquid
a. are tightly packed together and stay in a fixed position.
b. have no viscosity.
c. decrease in volume with increasing temperature.
d. are free to move in a container but remain in close contact with one another.

____ 152. In which state of matter do the particles spread apart and fill all the space available to them?
a. crystal
b. liquid
c. gas
d. solid

____ 153. The force of a gas's outward push divided by the area of the walls of the container is the gas's
a. volume.
b. temperature.
c. pressure.
d. density.

____ 154. During the process of sublimation,
a. a solid turns directly into a gas.
b. a solid turns into a liquid.
c. a gas turns directly into a solid.
d. a liquid turns into a gas.

____ 155. The surface of water can act like a sort of skin due to a property of liquids called
a. viscosity.
b. surface tension.
c. condensation.
d. evaporation.

____ 156. The change from liquid to solid, or the reverse of melting, is called
a. condensation.
b. boiling.
c. sublimation.
d. freezing.

____ 157. What is vaporization?
a. a gas becoming a liquid
b. a liquid becoming a solid
c. a gas becoming a solid
d. a liquid becoming a gas

____ 158. An uncovered pot of soup is simmering on a stove, and there are water droplets on the wall above the back of the stove. What sequence can you infer has occurred?

a. melting, then boiling
b. freezing, then thawing
c. vaporization, then condensation
d. condensation, then vaporization

____ 159. The opposite of vaporization is called
a. condensation.
b. sublimation.
c. evaporation.
d. freezing.

____ 160. In which state of matter are particles packed tightly together in fixed positions?
a. gas
b. solid
c. liquid
d. compound

____ 161. The state of matter in which particles are arranged in either a crystalline or an amorphous form is
a. liquid.
b. gas.
c. solid.
d. fluid.

____ 162. Sound is a disturbance that travels through a medium as a
a. longitudinal wave.
b. surface wave.
c. standing wave.
d. transverse wave.

____ 163. The speed of sound depends on
a. the loudness of the sound.
b. the pitch of the sound.
c. the source of the sound.
d. the properties of the medium it travels through.

____ 164. The amount of energy a sound wave carries per second through a unit area is its
a. loudness.
b. intensity.
c. frequency.
d. pitch.

____ 165. Loudness, or sound level, is measured in units called
a. decibels.
b. hertz.
c. meters per second.
d. watts per square meter.

____ 166. Which term refers to how high or low a sound seems to a person?
a. loudness
b. intensity
c. frequency
d. pitch

____ 167. The pitch of a sound that you hear depends on the sound wave's
a. loudness.
b. frequency.
c. intensity.
d. speed.

____ 168. The changing pitch of a police car's siren as it moves by you is an example of
a. the Doppler effect.
b. resonance.
c. the speed of sound.
d. intensity.

____ 169. A fundamental tone has only one
a. frequency.
b. pitch.
c. timbre.
d. intensity.

____ 170. What occurs when two or more sound waves interact?
a. interference
b. Doppler effect
c. resonance
d. ultrasound

____ 171. How well sounds can be heard in a particular room or hall is described by
a. pitch.
b. resonance.
c. acoustics.
d. timbre.

____ 172. Which part of your ear do sound waves enter through?
a. ear canal
b. eardrum
c. earlobe
d. cochlea

____ 173. A system of detecting reflected sound waves is
a. dissonance.
b. infrasound.
c. sonar.
d. acoustics.

____ 174. What do some bats use to locate food and to navigate?
a. dissonance
b. echolocation
c. infrasound
d. acoustics

____ 175. Doctors are able to make sonograms through the use of
a. ultrasound.
b. infrasound.
c. sonar.
d. acoustics.

____ 176. You can hear sounds from around corners because of
a. refraction.
b. reflection.
c. diffraction.
d. elasticity.

____ 177. The compressions and rarefraction that make up a sound wave traveling through the air are
a. differences in air pressure.
b. echoes.
c. differences in pitch.
d. an example of infrasound.

____ 178. What is a mixture of sound waves that do not sound pleasing together called?
a. music
b. noise
c. timbre
d. pitch

____ 179. Which waves have some electrical properties and some magnetic properties?
a. longitudinal waves
b. transverse waves
c. mechanical waves
d. electromagnetic waves

____ 180. Electromagnetic waves can transfer energy without a(an)
a. medium.
b. electric field.
c. magnetic field.
d. change in either a magnetic or an electric field.

____ 181. Light that has passed through a polarizing filter is called
a. transverse light.
b. polarized light.
c. white light.
d. photoelectric light.

____ 182. In a vacuum, all electromagnetic waves have the same
a. wavelength.
b. frequency.
c. speed.
d. amplitude.

____ 183. Visible light has a higher frequency than
a. X-rays.
b. ultraviolet rays.
c. infrared rays.
d. gamma rays.

____ 184. The range of electromagnetic waves placed in a certain order is called the
a. electromagnetic spectrum.
b. electromagnetic wavelength.
c. electromagnetic frequency.

d. electromagnetic field.

____ 185. The electromagnetic waves with the highest frequencies are called
a. radio waves.
b. gamma rays.
c. X-rays.
d. visible light.

____ 186. When a police officer uses radar for speed control, the officer is using what kind of electromagnetic waves?
a. radio waves
b. gamma rays
c. ultraviolet rays
d. X-rays

____ 187. Visible light can be separated into various colors to form a(an)
a. spectrum.
b. thermogram.
c. MRI.
d. X-ray picture.

____ 188. What kind of waves do cellular telephones use to transmit and receive signals?
a. gamma rays
b. microwaves
c. ultraviolet rays
d. infrared rays

____ 189. What is transferred by electromagnetic waves?
a. sound
b. electricity
c. electromagnetic radiation
d. resonance

____ 190. Which electromagnetic waves have the longest wavelengths and lowest frequencies?
a. infrared waves
b. radio waves
c. ultraviolet rays
d. gamma rays

____ 191. Which of the following is true of ultraviolet rays?
a. They are visible.
b. They carry information to televisions and radios.
c. They help your body produce vitamin D.
d. They provide the energy that makes your morning toast.

____ 192. A packet of light energy is called a
a. wavicle.
b. photon.
c. wave.
d. photoelectron.

____ 193. The speed of an electromagnetic wave is equal to
a. wavelength plus frequency.
b. wavelength times frequency.

c. wavelength divided by frequency.
d. frequency divided by wavelength.

____ 194. For work to be done on an object,
a. some force need only be exerted on the object.
b. the object must move some distance as a result of a force.
c. the object must move, whether or not a force is exerted on it.
d. the object must not move.

____ 195. Which of these is an example of work being done on an object?
a. holding a heavy piece of wood at a construction site
b. trying to push a car that doesn't move out of deep snow
c. pushing a child on a swing
d. holding a door shut on a windy day so it doesn't blow open

____ 196. If you exert a force of 20 newtons to push a desk 10 meters, how much work do you do on the desk?
a. 200 joules
b. 30 joules
c. 10 joules
d. 100 joules

____ 197. Work is measured in
a. meters.
b. pounds.
c. joules.
d. newtons.

____ 198. What do machines do?
a. change the amount of force you exert or the distance over which you exert the force
b. increase the amount of work that is done
c. decrease the amount of work that is done
d. eliminate friction

____ 199. Pulling down on a rope to hoist a sail on a sailboat is an example of a machine
a. multiplying the force you exert.
b. multiplying the distance over which a force is exerted.
c. changing the direction over which a force is exerted.
d. reducing friction.

____ 200. A ramp is an example of a simple machine called a(an)
a. inclined plane.
b. wedge.
c. lever.
d. pulley.

____ 201. The ideal mechanical advantage for an inclined plane is equal to the length of the incline divided by the
a. mass of the incline.
b. slope of the incline.
c. height of the incline.
d. angle of the incline.

____ 202. Which of these is an example of a third-class lever?
a. scissors

b. pliers
c. fishing pole
d. nutcracker

____ 203. The ideal mechanical advantage of a wheel and axle is equal to the
a. radius of the wheel divided by the radius of the axle.
b. radius of the axle divided by the radius of the wheel.
c. radius of the wheel divided by the length of the axle.
d. length of the axle divided by the radius of the wheel.

____ 204. One example of a compound machine is a
a. door.
b. pliers.
c. bicycle.
d. shovel.

____ 205. Which body parts act as the fulcrums of levers?
a. muscles
b. bones
c. joints
d. tendons

____ 206. Which body parts are shaped like wedges?
a. muscles
b. tendons
c. incisors
d. bones in your legs

____ 207. A simple machine that might be thought of as an inclined plane that moves is a
a. lever.
b. wheel and axle.
c. wedge.
d. pulley.

____ 208. Which of these could be considered an inclined plane wrapped around a cylinder?
a. lever
b. screw
c. wheel and axle
d. pulley

____ 209. The fixed point that a lever pivots around is called the
a. axle.
b. pulley.
c. gear.
d. fulcrum.

____ 210. In order to do work on an object, the force you exert must be
a. the maximum amount of force you are able to exert.
b. in the same direction as the object's motion.
c. in a direction opposite to Earth's gravitational force.
d. quick and deliberate.

____ 211. Work equals force times

a. energy.
b. velocity.
c. distance.
d. mass.

____ 212. When you raise or lower a flag on a flagpole, you are using a(an)
a. wheel and axle.
b. pulley.
c. wedge.
d. inclined plane.

____ 213. How can a hockey stick be considered a machine?
a. It multiplies force.
b. It multiplies distance.
c. It changes direction.
d. It reduces friction.

____ 214. The mechanical advantage of a machine that changes only the direction of force is
a. 1.
b. less than 1.
c. greater than 1.
d. 0.

____ 215. Most of the machines in your body consist of bones and muscles and are called
a. wedges.
b. levers.
c. pulleys.
d. compound machines.

____ 216. If tight scissors have an efficiency of 50 percent, half of your work is wasted due to
a. the output force.
b. the input force.
c. friction.
d. changes in direction.

____ 217. Power is measured in units called
a. joules.
b. pounds.
c. watts.
d. newtons.

____ 218. The wedge, screw, and lever are all
a. simple machines.
b. compound machines.
c. found in the human body.
d. 100 percent efficient.

Review packet for Milestone Test
Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: L2
   OBJ: PS.2.3.1 Describe what a physical change is. STA: S8CS3.d| S8P1.e
   BLM: application
2. ANS: B PTS: 1 DIF: L2
   OBJ: PS.2.3.2 Describe what a chemical change is. STA: S8CS3.d| S8P1.e| S8P2
   BLM: application
3. ANS: A PTS: 1 DIF: L1
   OBJ: PS.2.4.1 Identify forms of energy that are related to changes in matter.
   STA: S8CS3.d| S8P1.e| S8P2 BLM: knowledge
4. ANS: B PTS: 1 DIF: L2
   OBJ: PS.2.4.1 Identify forms of energy that are related to changes in matter.
   STA: S8P1 BLM: comprehension
5. ANS: A PTS: 1 DIF: L1
   OBJ: PS.2.1.2 Define elements and explain how they relate to compounds.
   STA: S8CS3.d| S8P3 BLM: knowledge
6. ANS: C PTS: 1 DIF: L2
   OBJ: PS.2.1.2 Define elements and explain how they relate to compounds.
   STA: S8CS3.d| S8P1.e BLM: comprehension
7. ANS: C PTS: 1 DIF: L2
   OBJ: PS.2.3.2 Describe what a chemical change is. STA: S8CS3.d| S8P1.e| S8P2
   BLM: application
8. ANS: B PTS: 1 DIF: L2
   OBJ: PS.2.2.3 Describe how the density of a material is determined.
   STA: S8CS3.d| S8P3 BLM: comprehension
9. ANS: A PTS: 1 DIF: L1
   OBJ: PS.15.1.1 Explain what causes mechanical waves. STA: S8P4.a| S8P4.b
   BLM: knowledge
10. ANS: D PTS: 1 DIF: L1
    OBJ: PS.15.1.1 Explain what causes mechanical waves. STA: S8P4.a| S8P4.b
    BLM: knowledge
11. ANS: B PTS: 1 DIF: L1
    OBJ: PS.15.1.2 Describe two types of waves and how they can be represented.
    STA: S8P4.a| S8P4.b BLM: knowledge
12. ANS: A PTS: 1 DIF: L1
    OBJ: PS.15.1.2 Describe two types of waves and how they can be represented.
    STA: S8CS5.a| S8P4.b| S8P4.d BLM: knowledge
13. ANS: A PTS: 1 DIF: L1
    OBJ: PS.15.2.1 Describe the basic properties of waves. STA: S8CS5.a| S8P4.b| S8P4.d
    BLM: knowledge
14. ANS: B PTS: 1 DIF: L1
    OBJ: PS.15.2.1 Describe the basic properties of waves. STA: S8P4.d
    BLM: knowledge
15. ANS: C PTS: 1 DIF: L2

OBJ: PS.15.2.2 Explain how a wave's speed is related to its wavelength and frequency.
STA: S8P4.b| S8P4.d BLM: comprehension

16. ANS: B PTS: 1 DIF: L2
OBJ: PS.15.3.1 Describe how reflection, refraction, and diffraction change a wave's direction.
STA: S8P4.b| S8P4.d BLM: comprehension

17. ANS: C PTS: 1 DIF: L2
OBJ: PS.15.3.1 Describe how reflection, refraction, and diffraction change a wave's direction.
STA: S8P4.b| S8P4.d BLM: comprehension

18. ANS: D PTS: 1 DIF: L1
OBJ: PS.15.3.2 State the different types of interference. STA: S8P4.b| S8P4.d
BLM: knowledge

19. ANS: D PTS: 1 DIF: L2
OBJ: PS.15.3.3 Explain how standing waves form. STA: S8P4.e
BLM: comprehension

20. ANS: C PTS: 1 DIF: L1
OBJ: PS.15.1.2 Describe two types of waves and how they can be represented.
STA: S8CS5.a| S8P4.b| S8P4.d BLM: knowledge

21. ANS: A PTS: 1 DIF: L2
OBJ: PS.15.3.1 Describe how reflection, refraction, and diffraction change a wave's direction.
STA: S8P4.b| S8P4.d BLM: comprehension

22. ANS: B PTS: 1 DIF: L1
OBJ: PS.15.3.1 Describe how reflection, refraction, and diffraction change a wave's direction.
STA: S8P4.d BLM: knowledge

23. ANS: A PTS: 1 DIF: L2
OBJ: PS.20.1.1 Explain how electric charges interact. STA: S8P5| S8P5.c
BLM: comprehension

24. ANS: B PTS: 1 DIF: L1
OBJ: PS.20.1.3 Describe how static electricity builds up and transfers.
STA: S8P5| S8P5.c BLM: knowledge

25. ANS: A PTS: 1 DIF: L2
OBJ: PS.20.1.3 Describe how static electricity builds up and transfers.
STA: S8P5| S8P5.c BLM: comprehension

26. ANS: D PTS: 1 DIF: L1
OBJ: PS.20.1.3 Describe how static electricity builds up and transfers.
STA: S8P5| S8P5.c BLM: knowledge

27. ANS: D PTS: 1 DIF: L2
OBJ: PS.20.1.3 Describe how static electricity builds up and transfers.
STA: S8P5.b| S8P5.c BLM: application

28. ANS: A PTS: 1 DIF: L2
OBJ: PS.20.2.3 Describe what causes electric charges to flow in a circuit.
BLM: comprehension

29. ANS: A PTS: 1 DIF: L2
OBJ: PS.20.2.4 Explain how resistance affects current. STA: S8P5.b
BLM: comprehension

30. ANS: C PTS: 1 DIF: L2
OBJ: PS.20.4.1 Explain what Ohm's law is. STA: S8CS3.b| S8CS4| S8P2
BLM: analysis

31. ANS: C PTS: 1 DIF: L2
OBJ: PS.20.4.3 Identify how many paths currents can take in series and parallel circuits.

STA: S8CS3.b| S8CS4| S8P2 BLM: comprehension

32. ANS: D PTS: 1 DIF: L2
OBJ: PS.20.4.3 Identify how many paths currents can take in series and parallel circuits.
STA: S8CS3.b| S8CS4| S8P2 BLM: comprehension

33. ANS: C PTS: 1 DIF: L2
OBJ: PS.20.4.3 Identify how many paths currents can take in series and parallel circuits.
STA: S8CS3.b| S8CS4| S8P2 BLM: comprehension

34. ANS: B PTS: 1 DIF: L1
OBJ: PS.20.4.3 Identify how many paths currents can take in series and parallel circuits.
STA: S8P5 BLM: knowledge

35. ANS: A PTS: 1 DIF: L1
OBJ: PS.20.5.1 Describe measures that help protect people from electrical shocks and short circuits.
STA: S8P5 BLM: knowledge

36. ANS: A PTS: 1 DIF: L1
OBJ: PS.20.2.1 Explain how an electric current is produced. STA: S8P5.b| S8P5.c
BLM: knowledge

37. ANS: B PTS: 1 DIF: L1
OBJ: PS.20.2.2 Explain how conductors are different from insulators.
STA: S8P5.b| S8P5.c BLM: knowledge

38. ANS: C PTS: 1 DIF: L2
OBJ: PS.20.4.2 Describe the basic features of an electric circuit.
BLM: comprehension

39. ANS: B PTS: 1 DIF: L2
OBJ: PS.4.2.1 Explain how Mendeleev discovered the pattern that led to the periodic table.
STA: S8CS5.b| S8CS6.c| S8P1.f BLM: comprehension

40. ANS: C PTS: 1 DIF: L2
OBJ: PS.4.1.1 Describe how atomic theory developed and changed.
STA: S8P1| S8P1.d| S8P1.f BLM: comprehension

41. ANS: C PTS: 1 DIF: L2
OBJ: PS.4.3.1 List the physical properties of metals. STA: S8P1.c| S8P1.d| S8P1.f
BLM: comprehension

42. ANS: B PTS: 1 DIF: L2
OBJ: PS.4.3.1 List the physical properties of metals. STA: S8P1.b| S8P1.d| S8P1.f
BLM: application

43. ANS: A PTS: 1 DIF: L2
OBJ: PS.4.3.2 Explain how the reactivity of metals changes across the periodic table.
STA: S8P1.b| S8P1.d| S8P1.f BLM: comprehension

44. ANS: C PTS: 1 DIF: L2
OBJ: PS.4.3.1 List the physical properties of metals. STA: S8P1.b| S8P1.d| S8P1.f
BLM: application

45. ANS: A PTS: 1 DIF: L1
OBJ: PS.4.3.1 List the physical properties of metals. STA: S8CS5| S8CS5.b| S8CS6.c| S8P1.f
BLM: knowledge

46. ANS: A PTS: 1 DIF: L2
OBJ: PS.4.2.2 Tell what data about elements is found in the periodic table.
STA: S8CS5.a| S8CS5.b| S8P1.f BLM: application

47. ANS: C PTS: 1 DIF: L2
OBJ: PS.4.2.2 Tell what data about elements is found in the periodic table.
STA: S8CS5.b| S8CS6.c| S8P1.f BLM: comprehension

48. ANS: D PTS: 1 DIF: L1
OBJ: PS.4.3.2 Explain how the reactivity of metals changes across the periodic table.
STA: S8P1.b| S8P1.d| S8P1.f BLM: knowledge
49. ANS: B PTS: 1 DIF: L2
OBJ: PS.4.3.2 Explain how the reactivity of metals changes across the periodic table.
STA: S8P1 BLM: comprehension
50. ANS: B PTS: 1 DIF: L1
OBJ: PS.4.4.2 Tell how metalloids are useful. STA: S8P1.b| S8P1.d| S8P1.f
BLM: knowledge
51. ANS: D PTS: 1 DIF: L2
OBJ: PS.4.4.1 Describe the properties of nonmetals. STA: S8CS5.a| S8P1.a
BLM: comprehension
52. ANS: C PTS: 1 DIF: L2
OBJ: PS.4.4.1 Describe the properties of nonmetals. STA: S8P2.c
BLM: comprehension
53. ANS: B PTS: 1 DIF: L1
OBJ: PS.13.1.1 Describe how energy, work, and power are related.
STA: S8CS3.b| S8P2| S8P3.c BLM: knowledge
54. ANS: A PTS: 1 DIF: L1
OBJ: PS.13.1.1 Describe how energy, work, and power are related.
STA: S8P2| S8P2.c BLM: knowledge
55. ANS: A PTS: 1 DIF: L1
OBJ: PS.13.1.2 Name and describe the two basic kinds of energy.
STA: S8P2| S8P2.c BLM: knowledge
56. ANS: C PTS: 1 DIF: L2
OBJ: PS.13.1.2 Name and describe the two basic kinds of energy.
STA: S8P2 BLM: comprehension
57. ANS: B PTS: 1 DIF: L1
OBJ: PS.13.2.2 Name some forms of energy associated with the particles that make up objects.
STA: S8P2 BLM: knowledge
58. ANS: C PTS: 1 DIF: L2
OBJ: PS.13.2.2 Name some forms of energy associated with the particles that make up objects.
STA: S8P1.g BLM: comprehension
59. ANS: A PTS: 1 DIF: L2
OBJ: PS.13.3.1 Describe how different forms of energy are related.
STA: S8P1.g BLM: comprehension
60. ANS: A PTS: 1 DIF: L2
OBJ: PS.13.3.3 State the law of conservation of energy. STA: S8P2
BLM: comprehension
61. ANS: B PTS: 1 DIF: L2
OBJ: PS.13.3.3 State the law of conservation of energy. STA: S8CS4.b| S8P2.c
BLM: comprehension
62. ANS: A PTS: 1 DIF: L1
OBJ: PS.13.4.2 Describe how energy is transformed when fossil fuels are used.
STA: S8CS5.a| S8P2.c BLM: knowledge
63. ANS: C PTS: 1 DIF: L2
OBJ: PS.13.4.1 Identify the source of the energy stored in fossil fuels.
STA: S8P2| S8P2.c BLM: comprehension
64. ANS: C PTS: 1 DIF: L2

OBJ: PS.13.1.2 Name and describe the two basic kinds of energy.
STA: S8P2| S8P2.c BLM: application

65. ANS: B PTS: 1 DIF: L1
OBJ: PS.13.1.2 Name and describe the two basic kinds of energy.
STA: S8CS5.a| S8P2.c BLM: knowledge

66. ANS: B PTS: 1 DIF: L1
OBJ: PS.13.2.2 Name some forms of energy associated with the particles that make up objects.
STA: S8P2 BLM: knowledge

67. ANS: C PTS: 1 DIF: L2
OBJ: PS.13.2.2 Name some forms of energy associated with the particles that make up objects.
STA: S8P2 BLM: comprehension

68. ANS: B PTS: 1 DIF: L2
OBJ: PS.13.3.2 Name common energy transformations. STA: S8P2
BLM: comprehension

69. ANS: B PTS: 1 DIF: L1
OBJ: PS.13.3.3 State the law of conservation of energy. STA: S8CS3.b| S8P2| S8P3.c
BLM: knowledge

70. ANS: B PTS: 1 DIF: L1
OBJ: PS.13.1.1 Describe how energy, work, and power are related.
STA: S8P2.c BLM: knowledge

71. ANS: D PTS: 1 DIF: L1
OBJ: PS.13.2.1 Explain how an object's mechanical energy is determined.
STA: S8P2.c BLM: knowledge

72. ANS: D PTS: 1 DIF: L1
OBJ: PS.13.3.1 Describe how different forms of energy are related.
STA: S8P2 BLM: knowledge

73. ANS: D PTS: 1 DIF: L1
OBJ: PS.13.3.2 Name common energy transformations. STA: S8CS5.a| S8P2.c
BLM: knowledge

74. ANS: C PTS: 1 DIF: L2 OBJ: PS.10.1.1 Describe what a force is.
STA: S8P3.b| S8P5| S8P5.a BLM: application

75. ANS: C PTS: 1 DIF: L2
OBJ: PS.10.1.2 Explain how balanced and unbalanced forces are related to an object's motion.
STA: S8CS7.b| S8CS8| S8P3.b BLM: comprehension

76. ANS: B PTS: 1 DIF: L1
OBJ: PS.10.3.1 State Newton's first law of motion. STA: S8CS7.b| S8CS8| S8P3.b
BLM: knowledge

77. ANS: B PTS: 1 DIF: L2
OBJ: PS.10.3.1 State Newton's first law of motion. STA: S8CS7.b| S8P3| S8P3.b
BLM: comprehension

78. ANS: C PTS: 1 DIF: L1
OBJ: PS.10.2.2 Identify the factors that affect the gravitational force between two objects.
STA: S8CS7.b| S8P3| S8P3.b BLM: knowledge

79. ANS: A PTS: 1 DIF: L1
OBJ: PS.10.2.1 Describe friction, and identify factors that determine the friction force between two objects.
STA: S8CS3.b| S8P3.a BLM: knowledge

80. ANS: B PTS: 1 DIF: L2
OBJ: PS.10.2.1 Describe friction, and identify factors that determine the friction force between two objects.
STA: S8CS7.b| S8CS8| S8P3.b BLM: application

81. ANS: C PTS: 1 DIF: L2
OBJ: PS.10.2.3 Explain why objects accelerate during free fall.
STA: S8CS7.b| S8CS8| S8P3.b BLM: comprehension
82. ANS: D PTS: 1 DIF: L2
OBJ: PS.10.2.3 Explain why objects accelerate during free fall.
STA: S8CS7.b| S8P3| S8P3.b BLM: comprehension
83. ANS: D PTS: 1 DIF: L1
OBJ: PS.10.2.2 Identify the factors that affect the gravitational force between two objects.
STA: S8CS7.b| S8P3| S8P3.b BLM: knowledge
84. ANS: A PTS: 1 DIF: L1
OBJ: PS.10.2.2 Identify the factors that affect the gravitational force between two objects.
STA: S8CS5.b| S8P3.b BLM: knowledge
85. ANS: A PTS: 1 DIF: L2 OBJ: PS.10.1.1 Describe what a force is.
STA: S8P3.b BLM: comprehension
86. ANS: B PTS: 1 DIF: L1
OBJ: PS.10.4.2 Explain how an object's momentum is determined.
STA: S8P3.b| S8P5.a BLM: knowledge
87. ANS: C PTS: 1 DIF: L2
OBJ: PS.10.5.1 Explain how a rocket lifts off the ground. STA: S8P1.d| S8P3.b
BLM: comprehension
88. ANS: D PTS: 1 DIF: L1
OBJ: PS.10.5.2 Describe the forces that keep a satellite in orbit.
STA: S8CS5.b| S8P3.b BLM: knowledge
89. ANS: A PTS: 1 DIF: L1 OBJ: PS.10.1.1 Describe what a force is.
STA: S8P3.b BLM: knowledge
90. ANS: C PTS: 1 DIF: L2
OBJ: PS.10.4.2 Explain how an object's momentum is determined.
STA: S8P3.b BLM: application
91. ANS: B PTS: 1 DIF: L2
OBJ: PS.10.4.2 Explain how an object's momentum is determined.
STA: S8CS7.b| S8P3| S8P3.b BLM: application
92. ANS: C PTS: 1 DIF: L2
OBJ: PS.10.2.1 Describe friction, and identify factors that determine the friction force between two objects.
STA: S8CS7.b| S8P3| S8P3.b BLM: application
93. ANS: A PTS: 1 DIF: L1
OBJ: PS.10.2.2 Identify the factors that affect the gravitational force between two objects.
STA: S8CS7.b| S8CS8| S8P3.b BLM: knowledge
94. ANS: C PTS: 1 DIF: L1
OBJ: PS.10.1.2 Explain how balanced and unbalanced forces are related to an object's motion.
STA: S8P3.b| S8P5.a BLM: knowledge
95. ANS: A PTS: 1 DIF: L1
OBJ: PS.18.1.1 State what happens to the light that strikes an object.
STA: S8CS3.d| S8P4.b| S8P4.c BLM: knowledge
96. ANS: D PTS: 1 DIF: L1
OBJ: PS.18.2.1 Identify the kinds of reflection. STA: S8CS3.d| S8P4.d
BLM: knowledge
97. ANS: C PTS: 1 DIF: L1
OBJ: PS.18.2.2 Describe the types of images produced by plane, concave, and convex mirrors.
STA: S8CS3.d| S8P4.c BLM: knowledge

98. ANS: C PTS: 1 DIF: L2
OBJ: PS.18.3.1 Explain why light rays bend when they enter a medium at an angle.
STA: S8CS3.d| S8P4.c BLM: comprehension
99. ANS: C PTS: 1 DIF: L2
OBJ: PS.18.3.1 Explain why light rays bend when they enter a medium at an angle.
STA: S8P4.c BLM: comprehension
100. ANS: B PTS: 1 DIF: L1
OBJ: PS.18.3.2 Identify what determines the types of images formed by convex and concave lenses.
STA: S8P4.c BLM: knowledge
101. ANS: C PTS: 1 DIF: L2
OBJ: PS.18.1.2 Describe what determines the color of an opaque, transparent, or translucent object.
STA: S8CS3.d| S8P4.d BLM: application
102. ANS: C PTS: 1 DIF: L2
OBJ: PS.18.1.3 Explain how mixing pigments is different from mixing colors of light.
STA: S8CS3.d| S8P4.d BLM: comprehension
103. ANS: A PTS: 1 DIF: L1
OBJ: PS.18.1.3 Explain how mixing pigments is different from mixing colors of light.
STA: S8CS4.c| S8P4.c BLM: knowledge
104. ANS: B PTS: 1 DIF: L1
OBJ: PS.18.4.1 Explain how one sees objects. STA: S8CS4.c| S8P4.c
BLM: knowledge
105. ANS: C PTS: 1 DIF: L1
OBJ: PS.18.4.1 Explain how one sees objects. STA: S8CS3.d| S8P4.a
BLM: knowledge
106. ANS: C PTS: 1 DIF: L2
OBJ: PS.18.4.2 Identify the types of lenses that are used to correct vision problems.
STA: S8CS3.d| S8P4.a BLM: comprehension
107. ANS: C PTS: 1 DIF: L2
OBJ: PS.18.4.2 Identify the types of lenses that are used to correct vision problems.
STA: S8CS3.d| S8P4.a BLM: comprehension
108. ANS: D PTS: 1 DIF: L2
OBJ: PS.18.1.1 State what happens to the light that strikes an object.
STA: S8P4.b| S8P4.d BLM: comprehension
109. ANS: B PTS: 1 DIF: L1
OBJ: PS.18.2.1 Identify the kinds of reflection. STA: S8CS3.d| S8P4.c
BLM: knowledge
110. ANS: B PTS: 1 DIF: L1
OBJ: PS.18.3.1 Explain why light rays bend when they enter a medium at an angle.
STA: S8CS3| S8CS4| S8CS6.c BLM: knowledge
111. ANS: B PTS: 1 DIF: L1
OBJ: PS.18.1.3 Explain how mixing pigments is different from mixing colors of light.
STA: S8CS4.c| S8P4.c BLM: knowledge
112. ANS: D PTS: 1 DIF: L2
OBJ: PS.18.4.1 Explain how one sees objects. STA: S8CS3.d| S8P4.d
BLM: comprehension
113. ANS: D PTS: 1 DIF: L1
OBJ: PS.18.2.2 Describe the types of images produced by plane, concave, and convex mirrors.
STA: S8CS3.d| S8P4.d BLM: knowledge
114. ANS: B PTS: 1 DIF: L1

OBJ: PS.18.2.2 Describe the types of images produced by plane, concave, and convex mirrors.
STA: S8CS3.d| S8P4.b| S8P4.c BLM: knowledge

115. ANS: C PTS: 1 DIF: L2
OBJ: PS.19.2.3 Explain how magnets can be changed. STA: S8CS5.b| S8P5| S8P5.a
BLM: comprehension

116. ANS: B PTS: 1 DIF: L1
OBJ: PS.19.1.2 Explain how magnetic poles interact. STA: S8CS3.d| S8P5| S8P5.a
BLM: knowledge

117. ANS: C PTS: 1 DIF: L2
OBJ: PS.19.1.3 Describe the shape of a magnetic field. STA: S8P5.a
BLM: comprehension

118. ANS: C PTS: 1 DIF: L2
OBJ: PS.19.2.2 Describe how magnetic domains are arranged in a magnetic material.
STA: S8CS3.d| S8P5| S8P5.a BLM: comprehension

119. ANS: B PTS: 1 DIF: L2
OBJ: PS.19.1.3 Describe the shape of a magnetic field. BLM: comprehension

120. ANS: D PTS: 1 DIF: L2
OBJ: PS.19.3.1 Explain how Earth is like a bar magnet. STA: S8P5.b| S8P5.c
BLM: comprehension

121. ANS: B PTS: 1 DIF: L2
OBJ: PS.19.1.1 Explain what the properties of a magnet are. STA: S8P5.c
BLM: application

122. ANS: A PTS: 1 DIF: L1
OBJ: PS.19.1.1 Explain what the properties of a magnet are. STA: S8P5
BLM: knowledge

123. ANS: A PTS: 1 DIF: L1
OBJ: PS.19.1.2 Explain how magnetic poles interact. STA: S8P5.c
BLM: knowledge

124. ANS: A PTS: 1 DIF: L1
OBJ: PS.19.2.1 Explain how an atom can behave like a magnet.
STA: S8P5.a BLM: knowledge

125. ANS: C PTS: 1 DIF: L2
OBJ: PS.19.2.2 Describe how magnetic domains are arranged in a magnetic material.
STA: S8CS5.b| S8P5| S8P5.a BLM: comprehension

126. ANS: A PTS: 1 DIF: L1
OBJ: PS.19.1.2 Explain how magnetic poles interact. STA: S8P5.c
BLM: knowledge

127. ANS: B PTS: 1 DIF: L2
OBJ: PS.19.2.1 Explain how an atom can behave like a magnet.
STA: S8P3.b| S8P5.a BLM: comprehension

128. ANS: C PTS: 1 DIF: L2
OBJ: PS.19.2.3 Explain how magnets can be changed. STA: S8P3.b| S8P5.a
BLM: comprehension

129. ANS: C PTS: 1 DIF: L1
OBJ: PS.19.2.3 Explain how magnets can be changed. BLM: knowledge

130. ANS: A PTS: 1 DIF: L1
OBJ: PS.9.1.1 Determine when an object is in motion. STA: S8CS4.b
BLM: knowledge

131. ANS: A PTS: 1 DIF: L1

OBJ: PS.9.2.1 Calculate an object's speed and velocity. BLM: knowledge

132. ANS: D PTS: 1 DIF: L1
OBJ: PS.9.2.1 Calculate an object's speed and velocity. BLM: knowledge

133. ANS: B PTS: 1 DIF: L1
OBJ: PS.9.2.2 Demonstrate how to graph motion. BLM: knowledge

134. ANS: A PTS: 1 DIF: L1
OBJ: PS.9.2.2 Demonstrate how to graph motion. STA: S8CS6.b| S8CS6.c| S8P3.a
BLM: knowledge

135. ANS: C PTS: 1 DIF: L1
OBJ: PS.9.3.1 Describe the motion of an object as it accelerates.
STA: S8CS6.b| S8CS6.c| S8P3.a BLM: knowledge

136. ANS: C PTS: 1 DIF: L2
OBJ: PS.9.3.1 Describe the motion of an object as it accelerates.
STA: S8P3 BLM: application

137. ANS: B PTS: 1 DIF: L1 OBJ: PS.9.3.2 Calculate acceleration.
STA: S8P3 BLM: knowledge

138. ANS: D PTS: 1 DIF: L1
OBJ: PS.9.2.1 Calculate an object's speed and velocity. STA: S8CS3.b| S8P3.a
BLM: knowledge

139. ANS: B PTS: 1 DIF: L1
OBJ: PS.9.1.1 Determine when an object is in motion. BLM: knowledge

140. ANS: D PTS: 1 DIF: L2
OBJ: PS.9.2.2 Demonstrate how to graph motion. STA: S8CS4.b
BLM: application

141. ANS: B PTS: 1 DIF: L1
OBJ: PS.9.2.1 Calculate an object's speed and velocity. STA: S8CS6.b| S8CS6.c| S8P3.a
BLM: knowledge

142. ANS: A PTS: 1 DIF: L1
OBJ: PS.9.2.1 Calculate an object's speed and velocity. STA: S8CS6.b| S8CS6.c| S8P3.a
BLM: knowledge

143. ANS: A PTS: 1 DIF: L2
OBJ: PS.9.3.1 Describe the motion of an object as it accelerates.
BLM: comprehension

144. ANS: C PTS: 1 DIF: L2
OBJ: PS.9.2.1 Calculate an object's speed and velocity. STA: S8CS6.b| S8CS6.c| S8P3.a
BLM: application

145. ANS: B PTS: 1 DIF: L2
OBJ: PS.9.3.1 Describe the motion of an object as it accelerates.
BLM: application

146. ANS: B PTS: 1 DIF: L2
OBJ: PS.9.2.1 Calculate an object's speed and velocity. BLM: application

147. ANS: D PTS: 1 DIF: L2
OBJ: PS.9.3.3 Describe what graphs are used to analyze the motion of an accelerating object.
STA: S8CS5.b| S8CS6.c| S8P3.b BLM: application

148. ANS: A PTS: 1 DIF: L1
OBJ: PS.9.3.3 Describe what graphs are used to analyze the motion of an accelerating object.
STA: S8CS4.b BLM: knowledge

149. ANS: B PTS: 1 DIF: L1
OBJ: PS.3.1.1 Describe the characteristics of a solid. STA: S8P1.c

BLM: knowledge

150. ANS: C PTS: 1 DIF: L1
OBJ: PS.3.1.2 Describe the characteristics of a liquid. STA: S8P1.c
BLM: knowledge

151. ANS: D PTS: 1 DIF: L2
OBJ: PS.3.1.2 Describe the characteristics of a liquid. STA: S8P1.c
BLM: comprehension

152. ANS: C PTS: 1 DIF: L1
OBJ: PS.3.1.3 Describe the characteristics of a gas. STA: S8CS4.b| S8CS4.c| S8P1.c
BLM: knowledge

153. ANS: C PTS: 1 DIF: L1
OBJ: PS.3.3.1 List the types of measurements used when working with gases.
STA: S8CS3.b| S8CS4.b| S8P1.c BLM: knowledge

154. ANS: A PTS: 1 DIF: L2
OBJ: PS.3.3.3 Explain how the volume, temperature, and pressure of a gas are related.
STA: S8P1.c BLM: comprehension

155. ANS: B PTS: 1 DIF: L2
OBJ: PS.3.1.2 Describe the characteristics of a liquid. STA: S8P1.c| S8P1.e
BLM: comprehension

156. ANS: D PTS: 1 DIF: L1
OBJ: PS.3.2.1 Explain what happens to a substance during changes between solid and liquid.
STA: S8P1.c| S8P1.e BLM: knowledge

157. ANS: D PTS: 1 DIF: L1
OBJ: PS.3.2.2 Explain what happens to a substance during changes between liquid and gas.
STA: S8P1.c| S8P1.e BLM: knowledge

158. ANS: C PTS: 1 DIF: L2
OBJ: PS.3.2.2 Explain what happens to a substance during changes between liquid and gas.
STA: S8P1.c| S8P1.e BLM: application

159. ANS: A PTS: 1 DIF: L2
OBJ: PS.3.2.2 Explain what happens to a substance during changes between liquid and gas.
STA: S8CS5.b| S8CS6.b| S8CS6.c BLM: comprehension

160. ANS: B PTS: 1 DIF: L2
OBJ: PS.3.1.1 Describe the characteristics of a solid. STA: S8CS4.b| S8CS4.c| S8P1.c
BLM: comprehension

161. ANS: C PTS: 1 DIF: L2
OBJ: PS.3.1.1 Describe the characteristics of a solid. STA: S8P1.c
BLM: comprehension

162. ANS: A PTS: 1 DIF: L1 OBJ: PS.16.1.1 Define sound.
STA: S8P4| S8P4.f BLM: knowledge

163. ANS: D PTS: 1 DIF: L1
OBJ: PS.16.1.3 Identify factors that affect the speed of sound. STA: S8P4| S8P4.f
BLM: knowledge

164. ANS: B PTS: 1 DIF: L1
OBJ: PS.16.2.1 Identify factors that affect the loudness of a sound.
STA: S8CS8| S8P4.a| S8P5 BLM: knowledge

165. ANS: A PTS: 1 DIF: L1
OBJ: PS.16.2.1 Identify factors that affect the loudness of a sound.
STA: S8P4.d| S8P4.e BLM: knowledge

166. ANS: D PTS: 1 DIF: L1

OBJ: PS.16.2.2 State what the pitch of a sound depends on. STA: S8P4.d| S8P4.e
BLM: knowledge

167. ANS: B PTS: 1 DIF: L1
OBJ: PS.16.2.2 State what the pitch of a sound depends on. STA: S8CS5.b
BLM: knowledge

168. ANS: A PTS: 1 DIF: L2
OBJ: PS.16.2.3 Explain what causes the Doppler effect. STA: S8CS5.b
BLM: application

169. ANS: A PTS: 1 DIF: L2
OBJ: PS.16.3.1 Identify what determines the sound quality of a musical instrument.
STA: S8CS5.a| S8P4.e BLM: comprehension

170. ANS: A PTS: 1 DIF: L2
OBJ: PS.16.3.3 Describe how acoustics is used in concert hall design.
BLM: application

171. ANS: C PTS: 1 DIF: L2
OBJ: PS.16.3.3 Describe how acoustics is used in concert hall design.
STA: S8CS5.a BLM: comprehension

172. ANS: A PTS: 1 DIF: L2
OBJ: PS.16.4.1 Describe the function of each section of the ear.
STA: S8CS5.a BLM: comprehension

173. ANS: C PTS: 1 DIF: L1
OBJ: PS.16.5.2 State the uses of ultrasound technologies. STA: S8P4| S8P4.a
BLM: knowledge

174. ANS: B PTS: 1 DIF: L2
OBJ: PS.16.5.1 Explain why some animals use echolocation. STA: S8P4.d| S8P4.e
BLM: comprehension

175. ANS: A PTS: 1 DIF: L2
OBJ: PS.16.5.2 State the uses of ultrasound technologies. STA: S8P4| S8P4.f
BLM: comprehension

176. ANS: C PTS: 1 DIF: L2
OBJ: PS.16.1.2 Explain how sound waves interact. STA: S8P4| S8P4.f
BLM: comprehension

177. ANS: A PTS: 1 DIF: L2 OBJ: PS.16.1.1 Define sound.
STA: S8CS8| S8P4.a| S8P5 BLM: application

178. ANS: B PTS: 1 DIF: L1
OBJ: PS.16.3.1 Identify what determines the sound quality of a musical instrument.
STA: S8P4.e BLM: knowledge

179. ANS: D PTS: 1 DIF: L2
OBJ: PS.17.1.1 State what an electromagnetic wave consists of.
STA: S8CS5.b| S8P4.a BLM: comprehension

180. ANS: A PTS: 1 DIF: L2
OBJ: PS.17.1.1 State what an electromagnetic wave consists of.
STA: S8CS3.d| S8P4.a BLM: comprehension

181. ANS: B PTS: 1 DIF: L2
OBJ: PS.17.1.2 Identify models that explain the behavior of electromagnetic waves.
STA: S8P4.b BLM: comprehension

182. ANS: C PTS: 1 DIF: L1
OBJ: PS.17.2.1 Explain how electromagnetic waves are alike and how they are different.
STA: S8P4.b BLM: knowledge

183. ANS: C PTS: 1 DIF: L2
OBJ: PS.17.2.1 Explain how electromagnetic waves are alike and how they are different.
STA: S8P4.e BLM: application
184. ANS: A PTS: 1 DIF: L1
OBJ: PS.17.2.2 Name the waves that make up the electromagnetic spectrum.
STA: S8P4.e BLM: knowledge
185. ANS: B PTS: 1 DIF: L1
OBJ: PS.17.2.2 Name the waves that make up the electromagnetic spectrum.
STA: S8P4.e BLM: knowledge
186. ANS: A PTS: 1 DIF: L2
OBJ: PS.17.2.2 Name the waves that make up the electromagnetic spectrum.
STA: S8P4.e BLM: comprehension
187. ANS: A PTS: 1 DIF: L2
OBJ: PS.17.2.2 Name the waves that make up the electromagnetic spectrum.
STA: S8P4.e BLM: comprehension
188. ANS: B PTS: 1 DIF: L1
OBJ: PS.17.4.2 Describe how cellular phones work. STA: S8CS3.d| S8P4.b
BLM: knowledge
189. ANS: C PTS: 1 DIF: L1
OBJ: PS.17.1.1 State what an electromagnetic wave consists of.
STA: S8CS5.b| S8P4.a BLM: knowledge
190. ANS: B PTS: 1 DIF: L1
OBJ: PS.17.2.2 Name the waves that make up the electromagnetic spectrum.
STA: S8P4.e BLM: knowledge
191. ANS: C PTS: 1 DIF: L2
OBJ: PS.17.2.2 Name the waves that make up the electromagnetic spectrum.
STA: S8CS3.d| S8P4.b BLM: comprehension
192. ANS: B PTS: 1 DIF: L1
OBJ: PS.17.1.2 Identify models that explain the behavior of electromagnetic waves.
STA: S8P4.b BLM: knowledge
193. ANS: B PTS: 1 DIF: L2
OBJ: PS.17.2.1 Explain how electromagnetic waves are alike and how they are different.
STA: S8CS3.d| S8P4.b BLM: comprehension
194. ANS: B PTS: 1 DIF: L1
OBJ: PS.12.1.1 Identify when work is done on an object. STA: S8CS10.c| S8CS3.a| S8CS3.b
BLM: knowledge
195. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.1.1 Identify when work is done on an object. STA: S8P2| S8P3.c
BLM: application
196. ANS: A PTS: 1 DIF: L2
OBJ: PS.12.1.2 Calculate the work done on an object. STA: S8P2| S8P3.c
BLM: application
197. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.1.2 Calculate the work done on an object. STA: S8CS3.a| S8CS3.b| S8P3.c
BLM: comprehension
198. ANS: A PTS: 1 DIF: L2
OBJ: PS.12.2.1 Explain how machines make work easier. STA: S8CS3.a| S8CS3.b| S8P3.c
BLM: comprehension
199. ANS: C PTS: 1 DIF: L2

OBJ: PS.12.2.1 Explain how machines make work easier. STA: S8P3.c
BLM: application

200. ANS: A PTS: 1 DIF: L1
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P2.c BLM: knowledge

201. ANS: C PTS: 1 DIF: L1
OBJ: PS.12.3.2 Calculate the ideal mechanical advantage of each type of simple machine.
STA: S8P3.c BLM: knowledge

202. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P2.c BLM: application

203. ANS: A PTS: 1 DIF: L2
OBJ: PS.12.3.2 Calculate the ideal mechanical advantage of each type of simple machine.
STA: S8P2.b| S8P2.c BLM: comprehension

204. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.3.3 Describe compound machines. STA: S8P3.c
BLM: application

205. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P3.c BLM: comprehension

206. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P3.c BLM: comprehension

207. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P3.c BLM: comprehension

208. ANS: B PTS: 1 DIF: L1
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P3.c BLM: knowledge

209. ANS: D PTS: 1 DIF: L1
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8CS10.c| S8CS3.a| S8CS3.b BLM: knowledge

210. ANS: B PTS: 1 DIF: L1
OBJ: PS.12.1.1 Identify when work is done on an object. STA: S8P2| S8P3.c
BLM: knowledge

211. ANS: C PTS: 1 DIF: L1
OBJ: PS.12.1.2 Calculate the work done on an object. STA: S8P3.c
BLM: knowledge

212. ANS: B PTS: 1 DIF: L1
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8CS3.a| S8CS3.b| S8P3.c BLM: knowledge

213. ANS: B PTS: 1 DIF: L2
OBJ: PS.12.2.1 Explain how machines make work easier. STA: S8P3.c
BLM: application

214. ANS: A PTS: 1 DIF: L2
OBJ: PS.12.2.2 Calculate the mechanical advantage of a machine.
STA: S8P3.c BLM: comprehension

215. ANS: B PTS: 1 DIF: L1
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.

STA: S8CS3.a| S8CS3.b| S8P3.c BLM: knowledge

216. ANS: C PTS: 1 DIF: L1
OBJ: PS.12.2.3 Calculate the efficiency of a machine. STA: S8CS3.b| S8P3.c
BLM: knowledge

217. ANS: C PTS: 1 DIF: L2
OBJ: PS.12.1.3 Define and calculate power. STA: S8P3.c
BLM: comprehension

218. ANS: A PTS: 1 DIF: L1
OBJ: PS.12.3.1 Describe the six kinds of simple machines and their uses.
STA: S8P2| S8P3.c BLM: knowledge