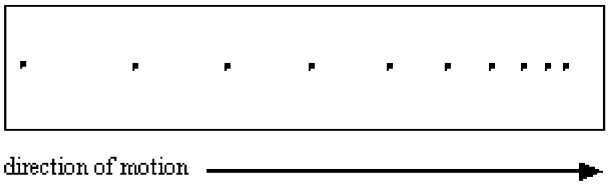
Name: _____ **Class:** _____ **Date:** _____ **ID: A**

Physics 11 Review 2012

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

____ 1. A spark timer/air table produced the tape pictured below. The object, moving to the right, was



a. moving with uniform motion
b. speeding up
c. slowing down
d. travelling with constant speed
e. accelerating then moving with constant speed

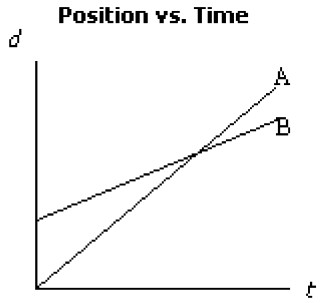
____ 2. The term "uniform motion" means
a. acceleration is constant
b. speed is constant
c. velocity is constant
d. displacement is constant
e. velocity is zero

____ 3. Using a variety of stopwatches, four students reported the time for a ball to drop to the ground from the same height. The recorded times were 1.85 s, 1.8 s, 1.9 s, and 2 s. The average time, expressed in the correct manner, is
a. 1.888 s
b. 1.89 s
c. 1.8 s
d. 1.9 s
e. 2 s

____ 4. The slope of a position-time graph always represents
a. displacement
b. distance
c. velocity
d. change in velocity
e. acceleration

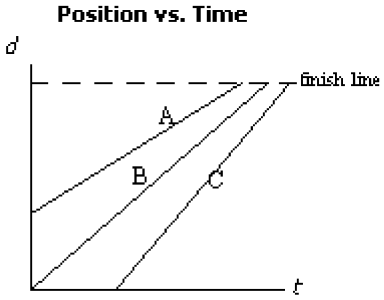
____ 5. The area under a velocity-time graph always represents
a. displacement
b. change in velocity
c. distance
d. acceleration
e. change in acceleration

____ 6. The position-time graph pictured below represents the motions of two objects, A and B. Which of the following statements concerning the objects' motions is true?



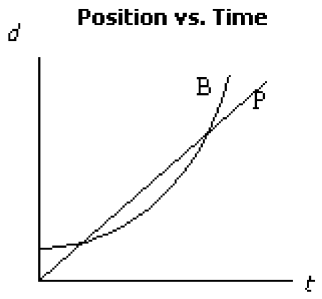
a. Object B travels the greater distance.
b. Object A has the greater speed.
c. Object A leaves the reference point at an earlier time.
d. Both objects have the same speed at the point where the lines cross.
e. Object A is travelling for a longer period of time.

____ 7. The position-time graph pictured below represents a race between three contestants A, B, and C. The race begins at time zero at the sound of the starter's pistol. Which of the following statements is true?



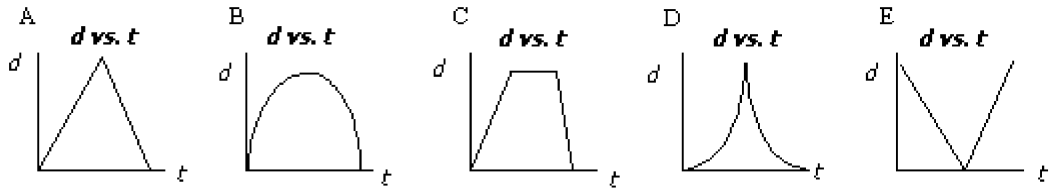
a. The runner who started last finished first.
b. The fastest runner won the race.
c. The runner with a head start won the race.
d. Only one runner began at the sound of the starter's pistol.
e. All runners ran the same distance.

____ 8. The position-time graph pictured below depicts a person, P, running to catch a bus, B, that has just begun to pull away. Which of the following statements is true?



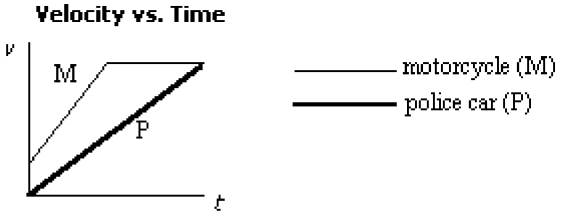
a. The person has no chance of catching the bus.
b. The person's acceleration is greater than that of the bus.
c. The person has two opportunities to catch up to the bus.
d. The speed of the bus is always greater than that of the person.
e. The person's speed is always greater than that of the bus.

____ 9. The position-time graph that depicts a ball thrown vertically upward that returns to the same position is



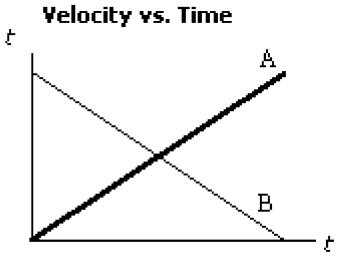
a. A
b. B
c. C
d. D
e. E

____ 10. The velocity-time graph pictured below represents the motion of a police car, P, in pursuit of a motorcycle, M. The motorcycle has just passed the police car. Which of the following statements is true?



a. Both vehicles are at rest when the pursuit begins.
b. The police car eventually catches the motorcycle.
c. The motorcycle accelerates and then slows down.
d. At the end of the recorded time interval, the police car has yet to catch the motorcycle.
e. The police car passes the motorcycle.

____ 11. The following velocity-time graph depicts the motions of two objects, A and B. Which of the statements describing the graph is true?



a. Both objects are accelerating uniformly.
b. The two objects are travelling in opposite directions.
c. Both objects start from rest.
d. Object A travels farther than object B.
e. Object B travels farther than object A.

____ 12. A cyclist rides a bicycle 4.0 km west, then 3.0 km north. What is the cyclist's displacement?

a. 7.0 km [37° N of W]
b. 7.0 km [37° W of N]
c. 5.0 km [37° N of W]
d. 5.0 km [37° W of N]
e. 1.0 km [37° W of N]

____ 13. A taxi cab drives 2.0 km [W], then 3.0 km [N], then 4.0 km [W], and finally 5.0 km [N]. The entire trip takes 0.30 h. What is the taxi's average velocity?

a. 47 km/h [53° W of N]
b. 47 km/h [53° N of W]
c. 33 km/h [53° N of W]
d. 33 km/h [53° W of N]
e. 10 km/h [53° W of N]

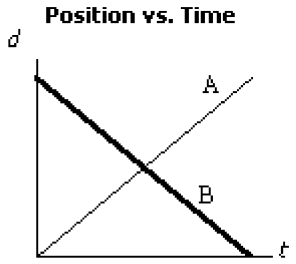
____ 14. Over a period of 3.0 s a car's velocity changes from 18 m/s [W] to 12 m/s [W]. What is the value of the car's acceleration during this time?

a. 2.0 m/s^2 [E]
b. 10 m/s^2 [W]
c. 2.0 m/s^2 [W]
d. 10 m/s^2 [E]
e. 2.0 m/s [E]

____ 15. A ball is thrown vertically downward from a window. Accelerating under gravity (9.8 m/s^2), the ball hits the ground 2.6 s later with a speed of 20.0 m/s. From what height above the ground was it thrown?

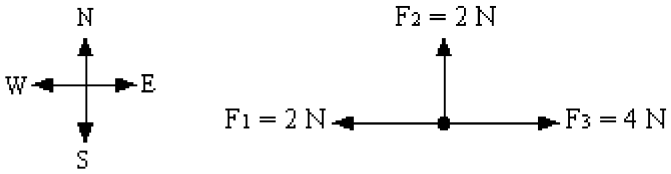
a. 85 m
b. 39 m
c. 29 m
d. 19 m
e. 10 m

____ 16. The position-time graph below depicts the motions of two objects, A and B. Which of the following statements concerning the objects' motions is NOT true?



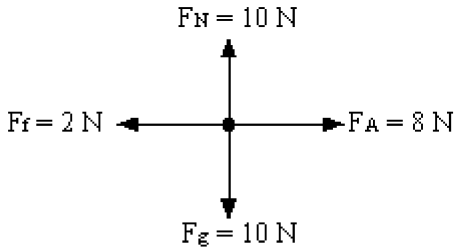
a. The two objects have the same speed.
b. The two objects travel the same distance.
c. The two objects travel with uniform motion.
d. The two objects travel for the same amount of time.
e. The two objects have the same velocity.

____ 17. Study the free-body diagram below and choose the statement that best describes the object's motion.



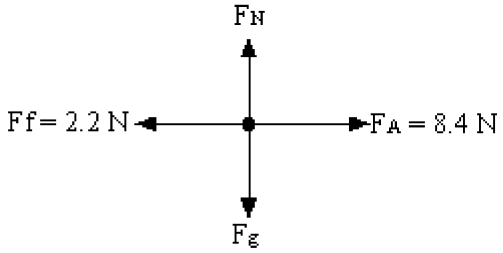
a. The object will accelerate north.
b. The object will be motionless.
c. The object will accelerate northeast.
d. The object will travel with uniform motion.
e. The object will travel north with a constant velocity.

____ 18. Study the free-body diagram below and choose the statement that best describes the dynamics of the situation.



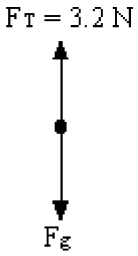
a. There is no net horizontal force.
b. The net force acting is 30 N.
c. The net horizontal force is 10 N.
d. The net force acting is 6 N.
e. The net force acting is 26 N.

____ 19. The free-body diagram below illustrates the forces acting on a 2.0-kg object as it is being pushed along a horizontal surface. What is the motion of the object?



a. moving at 5.3 m/s^2
b. moving at 3.1 m/s
c. moving at 5.3 m/s
d. moving at 3.1 m/s^2
e. not moving

____ 20. The free-body diagram below represents a 200-g rock suspended by a string. What is the rock's acceleration? (Assume 2 significant digits.)



a. 6.2 m/s^2 [up]
b. 33 m/s^2 [down]
c. 0.25 m/s^2 [down]
d. 6.2 x 10^{-3} m/s^2 [up]
e. the rock does not accelerate

____ 21. A car is travelling with uniform motion with a total frictional resistance of 2.8×10^3 N acting in a direction opposite to the motion of the car. What is the force acting on the car in the direction of motion?

a. much greater than 2.8×10^3 N
b. greater than 2.8×10^3 N
c. exactly equal to 2.8×10^3 N
d. less than 2.8×10^3 N
e. much less than 2.8×10^3 N

____ 22. Which of the following observations is explained by Newton's first law?

a. kicking your feet against something solid to remove snow from your boots
b. feeling as though you're being rocked from side-to-side on a roller coaster
c. an apple hanging motionless from the limb of a tree
d. feeling as though your head jerks backward when pulling away at green light
e. all of the above

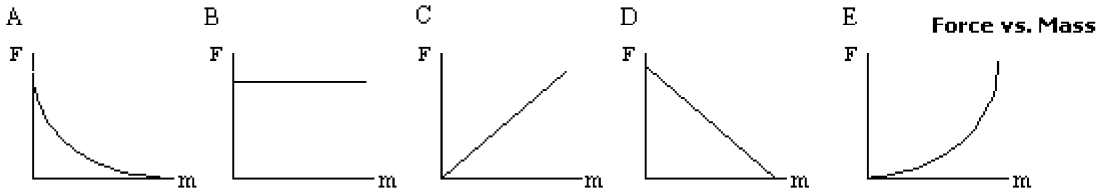
____ 23. Which of the following observations would be adequately explained by Newton's third law?

a. When turning a corner, a passenger in a car feels pushed against the door.
b. One skater pushes against another and both move off in opposite directions.
c. The Earth is held in orbit around the Sun by a gravitational force of attraction.
d. The friction of a surface causes a sliding object to come to rest.
e. A car's tires slip on an ice-covered surface.

____ 24. The action and reaction forces of Newton's third law
a. act on the same object
b. act as a pair of forces that are "balanced"
c. make the net force zero because they are equal in strength and opposite in direction
d. act on two different objects
e. cancel each other out like F_g and F_N

____ 25. A rocket accelerates upward and the thrust of the engines overcome the frictional forces and the gravity acting against the rocket. Which of Newton's laws of motion best explains this situation?
a. Newton's first law
b. Newton's second law
c. Newton's third law
d. Newton's law of universal gravitation
e. All the laws combine to explain this situation.

____ 26. Which of the following graphs best represents the relationship between the gravitational force, *F*, that Earth exerts and the mass, *m*, of an object sitting at Earth's surface, that the force is exerted upon?



a. A
b. B
c. C
d. D
e. E

____ 27. The weight of an object in free fall just above Earth's surface is
a. zero
b. less than normal
c. normal
d. greater than normal
e. almost zero

____ 28. If you weighed 112 N on the Moon where g = 1.6 N/kg, how much would you weigh on Earth?
a. 1.1×10^2 N
b. 1.7×10^4 N
c. 6.9×10^2 N
d. 1.1×10^4 N
e. 6.9×10^3 N

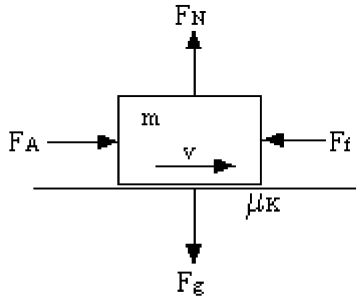
____ 29. Objects onboard an orbiting space station appear to be "floating" because
a. they're falling together
b. they're weightless
c. they're outside Earth's gravitational pull
d. they're in the vacuum of space
e. they're in the gravitational field of the Moon

____ 30. What would the gravitational field strength be on a planet with twice Earth's mass and twice its radius?
a. 78.4 N/kg
b. 39.2 N/kg
c. 19.6 N/kg
d. 9.8 N/kg
e. 4.9 N/kg

____ 31. Consider two planets, A and B. Planet A has half the mass and half the radius of planet B. The ratio of $g_A : g_B$ would be
a. 2 : 1
b. 1 : 2
c. 4 : 1
d. 1 : 4
e. 1 : 1

____ 32. Which of the following statements concerning gravitational fields is true?
a. The strength of an object's gravitational field varies inversely as the square of the distance to its centre.
b. The strength of an object's gravitational field varies directly as the square of its mass.
c. The Moon's gravitational field is much smaller than Earth's because the Moon's radius is so much smaller than Earth's.
d. An object's mass alone dictates the strength of the gravitational field at its surface.
e. An object's size alone dictates the strength of its gravitational field.

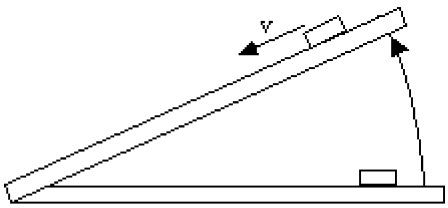
____ 33. Study the force system diagram pictured below and select the factor which would **NOT** influence the amount of kinetic friction.



a. object's mass, *m*
b. coefficient of kinetic friction, μ_K
c. normal force, F_N
d. applied force, F_A
e. gravitational field strength, g

____ 34. If all other forces can be ignored and the strength of the frictional force is greater than the applied force and oppositely directed, the object
a. could be speeding up or slowing down
b. must be speeding up
c. must be slowing down
d. could be moving with uniform motion
e. could be stopped

____ 35. A chalk brush sits on a metre stick as pictured in the diagram. As one end of the metre stick is elevated, the chalk brush eventually begins to slide. Why?



a. The coefficient of friction changes.
b. The gravitational force on the brush changes.
c. The normal force on the brush changes.
d. The gravitational force begins to act along the metre stick.
e. An applied force is created.

____ 36. A boy decides to ignite caps from a toy gun in the following manner: He uses a magnifying glass to focus the sun's rays on a cap. It ignites with a loud bang. Which of the following energy transformations best describes the situation?

a. sound → chemical → radiant
b. radiant → chemical → sound
c. chemical → radiant → sound
d. sound → radiant → chemical
e. none of the above

____ 37. Which of the following situations describes the energy transformation of radiant → electrical?

a. An automobile is started on a sunny day.
b. Electricity passes through a light bulb to give off light.
c. Light strikes chlorophyll in a plant cell.
d. Light strikes a substance and causes a reaction.
e. Light strikes the solar cells on a calculator.

____ 38. The amount of work done when a 80.00-kg person jumps 1.000 m into the air in 0.5000 s is

a. 292.0 J
b. 40.00 J
c. 784.00 J
d. 1568 J
e. 160.0 J

____ 39. A person lifts a pail of water of mass of 1.50 kg from the ground to a deck, 1.00 m above the ground. How much work was done by gravitational force on the pail of water?

a. –14.7 J
b. +1.50 J
c. –1.50 J
d. +0.153 J
e. +14.7 J

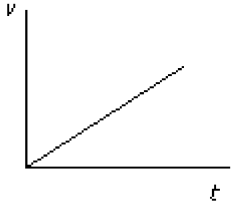
____ 40. In which case is positive work done?

a. The work done by air resistance on a ball as the ball, which was initially at rest, falls 3.0 m down towards Earth.
b. A eastward force is applied to an eastward moving soccer ball that is already moving at a constant velocity to increase its speed in that direction.
c. Earth applies a force on the Moon as the Moon travels one completion rotation in orbit around Earth.
d. A cart is moving at a constant velocity of 10 m/s [W] when a 0.5 N [downward] force is applied.
e. The work done by Earth on an arrow as it is fired 200 m straight up into the air.

____ 41. An 3500-kg elevator lifts a 75-kg person upward a distance of 50.0 m at a constant velocity . How much work was done by the elevator motor?

a. -3.7×10^4 J
b. -1.7×10^6 J
c. $+3.7 \times 10^4$ J
d. $+7.0 \times 10^2$ J
e. $+1.8 \times 10^6$ J

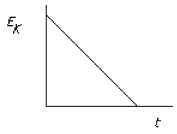
____ 42. The motion of a skateboard is shown on the velocity-time graph below.



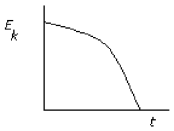
Which one of the following kinetic energy-time graphs best represents the motion of the skateboard?

a.

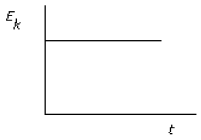
b.



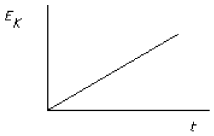
c.



d.



e.



____ 43. A 100-g Frisbee is thrown at a speed of 5.5 m/s, 1.3 m above the ground. The Frisbee has a potential energy of

a. 1.3×10^5 J
b. 2.8×10^0 J
c. 1.3×10^0 J
d. 1.5×10^0 J
e. 2.8×10^5 J

____ 44. A cheerleader is thrown vertically upward into the air. As the cheerleader rises, which one of the following quantities increases?

a. gravitational potential energy
b. speed
c. kinetic energy
d. acceleration
e. mechanical energy

____ 45. Two girls are playing baseball in a park. The batter hits the 400-g ball with a speed of 20.0 m/s. It travels over the park's fence that is 4.00 m high. Assuming that the ball loses half of its energy to air resistance, at what speed does the ball travel over the fence?

a. 5.00 m/s
b. 10.0 m/s
c. 7.37 m/s
d. 17.9 m/s
e. 14.1 m/s

____ 46. A pendulum bob is released from rest at a height of 1.50 m and the following data was collected for each cycle.Assume the lowest point is 0 m.

Maximum height of bob (m)	Maximum speed of bob at lowest point
1.50	5.42
1.50	5.42
1.50	5.42
1.50	5.42

Which statement most accurately describes the experiment?

a. The data shows that the experiment was not a controlled one.
b. The experiment shows that energy was conserved.
c. It is not possible to relate the energies without the mass of the bob.
d. The data shows that the gravitational potential energy decreased while the kinetic energy increased.
e. The experiment shows no relationship between gravitational potential and kinetic energy.

____ 47. Consider a pendulum bob consisting of two different masses. Mass 1 has a mass of X and mass 2 has a mass 6 times that of mass 1, or 6X. The bob made up of the two masses is pulled to a height *h* and released. At the lowest point in the swing mass 2, falls off. Assuming there is no friction and the centre of mass is ignored, what height will mass 1 return to when it swings back?

a. $6h$
b. h
c. $\frac{1}{6}h$
d. $\frac{1}{7}h$
e. $7\,h$

____ 48. An elevator motor lifts a load of 2500 kg a height of 12.0 m in 3.00 seconds. The energy required by the motor to accomplish this task is 300 000 J. What is the efficiency of the elevator?

a. 10.0%
b. 98.0%
c. 30.0%
d. 102%
e. 8.17%

____ 49. Specific heat capacity is the quantity of heat

a. required to change 1 kg of a substance from a liquid to a gas
b. given off by a 1-kg substance that changes state from solid to liquid
c. required to raise the temperature of 1 kg of a substance from 1°C to 100°C
d. needed to melt 1 kg of a substance without a change in temperature
e. required to raise the temperature of 1 kg of a substance 1°C

____ 50. A student obtains the following data when she uses mixes a metal and water together to determine the heat capacity of the metal.

mass of metal	100 g
mass of water	500 g
mass of calorimeter and stirrer	195 g
initial temperature of water	35.0°C
final temperature of water	43.0°C
initial temperature of metal	15.0°C
final temperature of metal	86.0°C
specific heat capacity of aluminum calorimeter and stirrer	9.20×10^2 J/kg· °C

What additional data is needed before carrying out the calculations to determine the heat capacity of the metal?

a. initial temperature of the calorimeter and the stirrer
b. final temperature of the calorimeter and the stirrer
c. no additional data needed
d. specific heat capacity of water
e. density of metal

____ 51. A liquid is being heated on a hotplate. The transfer of heat in the liquid through a circular path is called

a. radiation
b. convection
c. heat transfer
d. conduction
e. heat exchange

____ 52. An electric hoist provides 2.5×10^3 W of power to lift a 170-kg sack vertically upwards in 2.5 seconds. To what height has the sack been lifted?

a. 3.8×10^1 m
b. 3.8×10^0 m
c. 2.7×10^{-1} m
d. 1.7×10^5 m
e. 1.7×10^6 m

____ 53. A motorboat has a power output of 3.2×10^7 W and provides 4.0×10^6 J of energy in

a. 1.2×10^{-1} min
b. 8.0×10^1 min
c. 1.2×10^{-1} s
d. 8.0×10^{-1} h
e. 8.0×10^1 s

____ 54. A 2500-W electric motor raises a 500-kg sack from a height of 2.0 m to 24.0 m in 50 s. The efficiency of the motor is

a. 0.42%
b. 86%
c. 40%
d. 95%
e. 8.8%

____ 55. A transverse wave has an amplitude of 2.4 m. What is the vertical distance, in metres, between the top of a crest and the bottom of a trough?

a. 0.60
b. 1.2
c. 2.4
d. 3.6
e. 4.8

____ 56. In a longitudinal wave,
a. The particles move parallel to the direction of the wave motion.
b. The particles move perpendicular to the direction of the wave motion.
c. Energy causes the particles to move forward with the wave.
d. Energy is propagated by crests and troughs.
e. The speed is unaffected by the type of medium used.

____ 57. An earthquake creates a seismic wave that travels at 3500 m/s with a wavelength of 1750 m. Find the frequency of the seismic wave.
a. 2.0 m
b. 0.50 m
c. 2.0 kHz
d. 0.50 Hz
e. 2.0 Hz

____ 58. During destructive interference in sound, which of the following could be produced?
a. louder sound
b. antinode
c. quieter sound
d. resonance
e. supercrest

____ 59. One sound source has an intensity of 40 dB, while another has an intensity of 70 dB. The intensity of these two differs by a factor of
a. 3
b. 30
c. 1000
d. 2800
e. 10^{30}

____ 60. Pitch is not dependent on which of the following wave characteristics?
a. frequency
b. tone
c. cycles per second
d. amplitude
e. all of the above

____ 61. Which of the following intensities is 100 times greater than 10 dB?
a. –90 dB
b. 0 dB
c. 30 dB
d. 110 dB
e. 1000 dB

____ 62. The intensity level of sound does not depend on which of the following?
a. amplitude of the vibrating source
b. vibrational energy of the source
c. distance from the source
d. frequency of the source
e. none of the above

____ 63. Mach number represents
a. the intensity level of a sound measured in decibels
b. the speed of sound at a given temperature
c. the ratio of an object's speed to the speed of sound in air at that location
d. the highest sound frequency that a person can hear
e. the lowest sound frequency that a person can hear

____ 64. An object produces a sound wave with a wavelength 75.0 cm. If the speed of sound is 350 m/s, the frequency of the sound is
a. 263 Hz
b. 467 Hz
c. 2.63×10^4 Hz
d. 4.67 Hz
e. 425 Hz

____ 65. For every 10ºC increase in air temperature, the speed of sound in the air
a. decreases by 10 m/s
b. increases by 10 m/s
c. decreases by 6.0 m/s
d. increases by 6.0 m/s
e. remains relatively unchanged

____ 66. What is the frequency of a note that is four octaves lower than 880 Hz?
a. 55 Hz
b. 110 Hz
c. 220 Hz
d. 440 Hz
e. 880 Hz

____ 67. If the fundamental frequency of a vibrating string is 100 Hz, what is the frequency of the third overtone?
a. 25 Hz
b. 33 Hz
c. 150 Hz
d. 300 Hz
e. 400 Hz

____ 68. A standing wave with a fundamental mode wavelength of 60 cm forms in an air column closed at one end. How long is the column for the fundamental mode?
a. 15 cm
b. 30 cm
c. 45 cm
d. 60 cm
e. 90 cm

____ 69. An air column closed at one end is vibrating in its third resonant length. If the wavelength of the sound is 80 cm, the length of the air column is
a. 100 m
b. 1 cm
c. 120 cm
d. 1 m
e. 1.2 m

____ 70. The first and second resonant lengths of an air column that is closed at one end are 15.5 cm and 45.5 cm, respectively. The best value for the wavelength of the wave is
a. 30 cm
b. 31 cm
c. 60 cm
d. 62 cm
e. 91 cm

____ 71. A YAG laser has a frequency of 2.8×10^{14} Hz. What is the wavelength of the light it produces?
a. 1.2×10^{-23} m
b. 1.1×10^{-6} m
c. 1.2×10^{-2} m
d. 9.4×10^{5} m
e. 8.5×10^{-22} m

____ 72. What is the frequency of light that has a wavelength of 480 nm?
a. 6.25×10^{14} Hz
b. 6.25×10^{8} Hz
c. 6.25×10^{5} Hz
d. 1.60×10^{-6} Hz
e. 1.60×10^{-15} Hz

____ 73. Two charged objects have a force of 0.040 N between them. If the distance between the objects is reduced by half, the force between them will be
a. 0.010 N
b. 0.020 N
c. 0.040 N
d. 0.080 N
e. 0.16 N

____ 74. Two identical charges are 36 mm apart. The electrostatic force between them is 1.3 N. What is the size of each charge?
a. 1.9×10^{-13} C
b. 4.3×10^{-7} C
c. 5.2×10^{-12} C
d. 2.2×10^{-6} C
e. 4.3×10^{-6} C

____ 75. A charge of +1.3 μC is positioned 25 mm from a charge of +3.4 μC. The electrostatic force between the charges is
a. 20 N
b. 0.51 N
c. 2.8 N
d. 1.6 N
e. 64 N

____ 76. An atom with 9 protons, 10 electrons, and 10 neutrons has a net charge of
a. -1.6×10^{-19} C
b. $+1.6 \times 10^{-19}$ C
c. $+3.0 \times 10^{-18}$ C
d. -1.6×10^{-18} C
e. -1.4×10^{-18} C

____ 77. How many electrons must be transferred to a neutral pith ball to give it a charge of -8.0×10^{-16} C?
a. 8.0×10^{16}
b. 5.0×10^{2}
c. 5.0×10^{3}
d. 8.0×10^{3}
e. 2.0×10^{4}

____ 78. A circuit has a current of 345 mA. How much charge passes a point in the circuit in 2.00 min?
a. 0.690 A
b. 2.88 A
c. 5.75 A
d. 20.7 A
e. 41.4 A

____ 79. How long will it take 6.02×10^{23} electrons to pass through a point in a circuit if the current is 15.0 A?
a. 107 min
b. 401 min
c. 160 min
d. 150 min
e. 345 min

____ 80. An electric current is generally comprised of
a. moving electrons
b. moving protons
c. moving negative ions
d. moving positive ions
e. a build-up of electric charge

____ 81. One volt is equal to one
a. J/C
b. C/s
c. V/A
d. A/s
e. C/A

____ 82. A hair dryer operates from a 120-V source. If it has consumed 840 J of energy, what total charge has passed through it?
a. 1.0×10^{5} C
b. 1.0×10^{2} C
c. 71 C
d. 7.0 C
e. 0.14 C

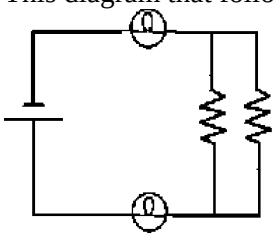
____ 83. An electron has a mass of 9.11×10^{-31} kg. Originally, it is at rest. What speed will the electron have after it is accelerated though a potential difference of 5.67×10^{3} V?
a. 5.67×10^{3} m/s
b. 1.99×10^{15} m/s
c. 4.46×10^{7} m/s
d. 3.16×10^{7} m/s
e. 3.00×10^{8} m/s

____ 84. Which device would most likely be classified as a load in an electrical circuit?
a. battery
b. light bulb
c. ammeter
d. cell
e. none of the above

____ 85. If ten 9.0-V sources are connected in parallel to each other, the total potential difference in the circuit will be
a. 0.90 V
b. 1.1 V
c. 9.0 V
d. 90 V
e. 900 V

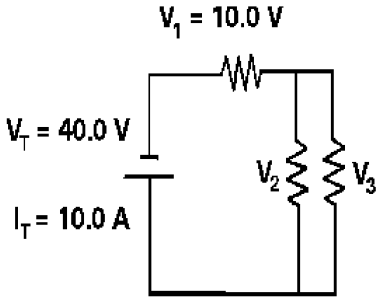
____ 86. In a circuit diagram , the symbol  represents a
a. ground
b. cell
c. resistor
d. lamp
e. fuse

____ 87. This diagram that follows shows



a. two lamps in series and two resistors in parallel
b. two lamps in series and two resistors in series
c. two lamps in parallel and two resistors in series
d. two lamps in parallel and two resistors in parallel
e. two lamps in series, one resistor in series, and one resistor in parallel

____ 88. Assuming the two resistors are identical, the value of I_3 in the following circuit is



a. 10 A
b. 5.0 A
c. 7.5 A
d. 3.3 A
e. 1.0 A

____ 89. A 9.0-V battery produces a current of 8.0 A. What is the resistance in the circuit?

a. 1.1 Ω
b. 0.89 Ω
c. 0.75 Ω
d. 5.3 Ω
e. 72 Ω

____ 90. A toy train set has a resistance of 20.0 Ω and uses a current of 250 mA. If it ran for one hour, what is the power of the train?

a. 1.2 W
b. 5.0 W
c. 75 W
d. 2.2×10^2 W
e. 4.5×10^3 W

____ 91. Three 10-Ω resistors are connected in series to one another in a 12.0-V circuit. What is the total resistance in the circuit?

a. 3.3 Ω
b. 10 Ω
c. 12 Ω
d. 20 Ω
e. 30 Ω

____ 92. A 100-W light bulb burns for 25 h. How much energy has it used in this time?

a. 2.5×10^3 J
b. 2.5×10^3 kW·h
c. 1.5×10^5 J
d. 9.0×10^6 J
e. 42 J

Physics 11 Review 2012
Answer Section

MULTIPLE CHOICE

1.	ANS:	B	REF: I	OBJ:	1.4	LOC:	FM2.03
2.	ANS:	C	REF: K/U	OBJ:	1.2	LOC:	FM1.01
3.	ANS:	E	REF: C	OBJ:	1.1	LOC:	FM1.01
4.	ANS:	C	REF: C	OBJ:	1.2	LOC:	FM2.03
5.	ANS:	A	REF: C	OBJ:	1.4	LOC:	FM2.03
6.	ANS:	B	REF: C	OBJ:	1.2	LOC:	FM2.03
7.	ANS:	C	REF: C	OBJ:	1.2	LOC:	FM2.03
8.	ANS:	C	REF: C	OBJ:	1.4	LOC:	FM2.03
9.	ANS:	B	REF: C	OBJ:	1.4	LOC:	FM2.03
10.	ANS:	D	REF: C	OBJ:	1.4	LOC:	FM2.03
11.	ANS:	A	REF: C	OBJ:	1.4	LOC:	FM2.03
12.	ANS:	C	REF: K/U	OBJ:	1.3	LOC:	FM1.03
13.	ANS:	C	REF: K/U	OBJ:	1.3	LOC:	FM1.03
14.	ANS:	A	REF: I	OBJ:	1.4	LOC:	FM2.04
15.	ANS:	D	REF: I	OBJ:	1.6	LOC:	FM2.04
16.	ANS:	E	REF: C	OBJ:	1.2	LOC:	FM2.03
17.	ANS:	C	REF: I	OBJ:	2.4	LOC:	FM2.04
18.	ANS:	D	REF: I	OBJ:	2.4	LOC:	FM2.04
19.	ANS:	D	REF: I	OBJ:	2.4	LOC:	FM2.04
20.	ANS:	A	REF: I	OBJ:	2.4	LOC:	FM2.04
21.	ANS:	C	REF: K/U	OBJ:	2.2	LOC:	FM1.08
22.	ANS:	E	REF: K/U	OBJ:	2.2	LOC:	FM1.07
23.	ANS:	B	REF: K/U	OBJ:	2.5	LOC:	FM1.07
24.	ANS:	D	REF: K/U	OBJ:	2.5	LOC:	FM1.07
25.	ANS:	B	REF: K/U	OBJ:	2.4	LOC:	FM1.07
26.	ANS:	C	REF: C	OBJ:	3.2	LOC:	FM2.03
27.	ANS:	C	REF: K/U	OBJ:	3.1	LOC:	FM1.05
28.	ANS:	C	REF: K/U	OBJ:	3.2	LOC:	FM1.05
29.	ANS:	A	REF: K/U	OBJ:	3.1	LOC:	FM1.05
30.	ANS:	E	REF: K/U	OBJ:	3.2	LOC:	FM1.05
31.	ANS:	A	REF: K/U	OBJ:	3.2	LOC:	FM1.05
32.	ANS:	A	REF: K/U	OBJ:	3.2	LOC:	FM1.05
33.	ANS:	D	REF: K/U	OBJ:	3.4	LOC:	FM1.06
34.	ANS:	C	REF: K/U	OBJ:	3.3	LOC:	FM1.07
35.	ANS:	C	REF: K/U	OBJ:	3.1	LOC:	FM1.06
36.	ANS:	B	REF: K/U	OBJ:	4.1	LOC:	EW1.01
37.	ANS:	E	REF: K/U	OBJ:	4.1	LOC:	EW1.01
38.	ANS:	C	REF: K/U	OBJ:	4.2	LOC:	EW1.02
39.	ANS:	A	REF: K/U	OBJ:	4.2	LOC:	EW1.02
40.	ANS:	B	REF: K/U	OBJ:	4.2	LOC:	EW1.01, EW1.02

41. ANS: E REF: K/U OBJ: 4.1 LOC: EW1.01, EW1.02
42. ANS: A REF: K/U OBJ: 4.3 LOC: EW1.01, EW1.03, EW2.02
43. ANS: C REF: K/U OBJ: 4.3 LOC: EW1.03
44. ANS: A REF: K/U OBJ: 4.3 LOC: EW1.01, EW1.03
45. ANS: E REF: K/U OBJ: 4.4 LOC: EW1.03
46. ANS: B REF: I OBJ: 4.4 LOC: EW1.03, EW2.02
47. ANS: B REF: K/U OBJ: 4.4 LOC: EW1.03
48. ANS: B REF: K/U OBJ: 4.4 LOC: EW1.05
49. ANS: E REF: K/U OBJ: 4.5 LOC: EW1.01
50. ANS: D REF: I OBJ: 4.5 LOC: EW1.03, EW2.03
51. ANS: B REF: K/U OBJ: 4.5 LOC: EW1.01
52. ANS: B REF: K/U OBJ: 4.6 LOC: EW1.04
53. ANS: C REF: K/U OBJ: 4.6 LOC: EW1.04
54. ANS: B REF: K/U OBJ: 5.2 LOC: EW1.04, EW1.05
55. ANS: E REF: K/U OBJ: 6.1 LOC: WS1.01
56. ANS: A REF: K/U OBJ: 6.2 LOC: WS1.02
57. ANS: E REF: C OBJ: 6.3 LOC: WS1.02
58. ANS: C REF: I OBJ: 7.8 LOC: WS2.01
59. ANS: C REF: K/U OBJ: 7.4 LOC: WS1.01
60. ANS: D REF: C OBJ: 7.2 LOC: WS1.01
61. ANS: C REF: K/U OBJ: 7.4 LOC: WS1.01
62. ANS: D REF: C OBJ: 7.4 LOC: WS1.01
63. ANS: C REF: C OBJ: 7.10 LOC: WS3.03
64. ANS: B REF: K/U OBJ: 7.2 LOC: WS1.01
65. ANS: D REF: K/U OBJ: 7.3 LOC: WS1.03
66. ANS: A REF: K/U OBJ: 8.1 LOC: WS1.01
67. ANS: E REF: K/U OBJ: 8.3 LOC: WS1.06
68. ANS: A REF: I OBJ: 8.4 LOC: WS1.08
69. ANS: D REF: K/U OBJ: 8.4 LOC: WS1.08
70. ANS: C REF: K/U OBJ: 8.4 LOC: WS2.03
71. ANS: B REF: K/U OBJ: 9.1 LOC: LG1.02
72. ANS: A REF: K/U OBJ: 9.1 LOC: LG1.02
73. ANS: E REF: I OBJ: 12.2 LOC: EM1.01
74. ANS: B REF: I OBJ: 12.2 LOC: EM1.01
75. ANS: E REF: I OBJ: 12.2 LOC: EM1.01
76. ANS: A REF: I OBJ: 12.2 LOC: EM1.01
77. ANS: C REF: K/U OBJ: 12.2 LOC: EM1.01
78. ANS: E REF: I OBJ: 12.3 LOC: EM1.01
79. ANS: A REF: I OBJ: 12.3 LOC: EM1.01
80. ANS: A REF: K/U OBJ: 12.3 LOC: EM1.01
81. ANS: A REF: C OBJ: 12.4 LOC: EM1.01
82. ANS: D REF: I OBJ: 12.4 LOC: EM1.01
83. ANS: C REF: I OBJ: 12.4 LOC: EM1.01
84. ANS: B REF: K/U OBJ: 12.5 LOC: EM1.01
85. ANS: C REF: I OBJ: 12.5 LOC: EM1.01

86.	ANS:	B	REF:	C	OBJ:	12.5	LOC: EM1.01
87.	ANS:	A	REF:	K/U	OBJ:	12.5	LOC: EM1.01
88.	ANS:	B	REF:	I	OBJ:	12.5	LOC: EM1.01
89.	ANS:	A	REF:	I	OBJ:	12.6	LOC: EM1.01
90.	ANS:	A	REF:	I	OBJ:	12.7	LOC: EM1.01
91.	ANS:	E	REF:	K/U	OBJ:	12.6	LOC: EM1.01
92.	ANS:	D	REF:	I	OBJ:	12.7	LOC: EM1.01

Physics 11 Review 2012 [Answer Strip] **ID: A**

B 6. C 8. A 11. E 16.

B 1.

C 12. C 17.

C 7. B 9.

C 2.

C 13.

E 3.

A 14.

C 4. D 10. D 18.

D 15.

A 5.

Physics 11 Review 2012 [Answer Strip] **ID: A**

D 19.

A 20.

C 21.

E 22.

B 23.

D 24.

B 25.

C 26.

C 27.

C 28.

A 29.

E 30.

A 31.

A 32.

D 33.

C 34.

C 35.

B 36.

E 37.

C 38.

A 39.

B 40.

E 41.

A 42.

C 43.

A 44.

E 45.

Physics 11 Review 2012 [Answer Strip] **ID: A**

B 46.

D 50.

A 56.

A 66.

A 76.

E 67.

C 77.

E 57.

A 68.

E 78.

C 58.

A 79.

D 69.

C 59.

A 80.

B 47.

C 70.

D 60.

A 81.

B 51.

B 71.

C 61.

D 82.

B 52.

A 72.

B 48.

D 62.

C 83.

C 53.

E 73.

C 63.

E 49.

B 84.

B 54.

B 74.

B 64.

C 85.

E 55.

E 75.

D 65.

B 86.

__A__ 87.

__B__ 88.

__A__ 89.

__A__ 90.

__E__ 91.

__D__ 92.