**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Energy!**

**Pre-Assessment**

g = 10 m/s/s

1. Gravitational potential energy depends on the \_\_\_\_
   1. Mass of the object
   2. Height of the object
   3. Acceleration due to gravity
   4. All of the above
2. A pendulum is swinging back and forth and has a kinetic energy of 400 J at a particular point in its path. Which of the following statements is **NOT** true?
   1. Both the kinetic and potential energy decrease at the same time
   2. The minimum kinetic energy is zero at some point
   3. When the kinetic energy is zero, the potential energy will be 400 J or greater
   4. The potential energy increases when the kinetic energy decreases.
3. The law of conservation of energy states that
   1. The energy of a system can disappear
   2. It is impossible to make a perpetual motion machine
   3. Energy cannot change form
   4. Energy cannot be created nor destroyed but can only change forms.
4. The energy in an object due to its motion is
   1. Kinetic
   2. potential
   3. Nuclear
   4. Electromagnetic
5. Kinetic energy depends on both
   1. mass and density
   2. mass and volume
   3. mass and velocity
   4. mass and acceleration
6. Calculate the potential energy of a 0.65 kg basketball which is 3 meters above the ground?
   1. 1.95 Joules
   2. 4.62 Joules
   3. 19.5 Joules
   4. 2.93 Joules

|  |  |
| --- | --- |
| 1. The picture to the right is showing a ball as it swings from position A to Position C. Which letter represents the greatest potential energy?    1. A b. B c. C 2. On the picture of the pendulum, which letter represents where kinetic energy is increasing and potential energy is decreasing?    1. A b. B c. C 3. On the picture of the pendulum, which letter represents where the kinetic energy is the greatest.    1. A b. B c. C | A  B  C |

1. When observing the picture above and thinking about total energy of this system which statement is the most accurate?
   1. The ball has the greatest total energy at position A.
   2. The ball has the greatest total energy at position B.
   3. The ball has the greatest total energy at position C.
   4. The ball has the same total energy at all positions.
2. A person releases a ball allowing it to roll across the floor, it eventually slows down and stops. What has happened to the energy of the ball?
   1. The energy of the ball is naturally lost and can no longer be found anywhere.
   2. The ball lost its energy immediately after it began rolling.
   3. The energy of the ball was converted to heat/thermal energy as a result of friction.
   4. The energy of the ball never changed through the process, the ball still has the same energy it had when the ball began rolling and after it stopped.
3. If the ball described above were a bowling ball with a mass of 7 kg, what is the bowling ball’s kinetic energy when it is moving 4 m/s?
   1. 28 Joules
   2. 14 Joules
   3. 280 Joules
   4. 56 Joules