Physics
Energy, Form: A

Name: _____
Date: _____
Period: _____
Primary Peer Reviewer: _____

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Section 1. Multiple Choice

1. Which of the following has a definition that is closest to **stored** energy?
   (a) Kinetic Energy
   (b) Mechanical Energy
   (c) Thermal Energy
   (d) Potential Energy
2. A box that is lifted to a height h has a potential energy of 15 J. What would the potential energy of the box be if it was lifted a height of $4h$?
   (a) 3.75 J
   (b) 15 J
   (c) 30 J
   (d) 60 J
3. Tom drops a rock off of a cliff. As the rock falls,
   (a) the kinetic energy of the rock turns into gravitational potential energy.
   (b) the mechanical energy of the rock increases.
   (c) the thermal energy of the rock decreases.
   (d) the gravitational potential energy of the rock turns into kinetic energy.
4. Which of the following would be the best example of kinetic energy being transformed into potential energy?
   (a) dropping a book
   (b) coasting down a hill on a bicycle
   (c) starting an automobile engine
   (d) A ball rolling up a hill
5. A ball falls from a height h from a tower. Which of the following statements is true?
   (a) The potential energy of the ball is constant as it falls.
   (b) The kinetic energy of the ball is constant as it falls.
   (c) The difference between the potential energy and kinetic energy is a constant as the ball falls.
   (d) The sum of the kinetic and potential energies of the ball is a constant as the ball falls.

Section 2. True or False

Mark Each answer as True or False

_____ Doing work on an object causes that object's energy to change.

_____ All potential energy is due to gravity.

_____ You do more work playing tag than studying all night for a test.

_____ Force and work are the same thing, just with different units.

_____ Kinetic energy is best described as energy of motion.

_____ To have potential energy an object must be at rest.

_____ Potential Energy is best described as stored energy.

_____ An object traveling at 3 m/s has a kinetic energy of 27J. This means that the object used up 27J of energy to get going that fast.

_____ When an object is at rest, it has no energy.

_____ All energy that exists on Earth can eventually be traced back to the sun.

_____ There are forms of potential energy that are not caused by gravity.

Section 3. Free Response

6. A 0.25 kg ball is dropped from a height of 3.5 m.

   (a) What is the gravitational potential energy of the ball before it is dropped?

   (b) What is the kinetic energy of the ball just before it hits the ground?

   (c) What is the speed the ball will be moving before it hits the ground?

Answer Key for Exam A

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1. Which of the following has a definition that is closest to **stored** energy?
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5. A ball falls from a height h from a tower. Which of the following statements is true?
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Section 2. True or False

Mark Each answer as True or False

True Doing work on an object causes that object's energy to change.

False All potential energy is due to gravity.

True You do more work playing tag than studying all night for a test.

False Force and work are the same thing, just with different units.

True Kinetic energy is best described as energy of motion.

False To have potential energy an object must be at rest.

True Potential Energy is best described as stored energy.

False An object traveling at 3 m/s has a kinetic energy of 27J. This means that the object used up 27J of energy to get going that fast.

False When an object is at rest, it has no energy.

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