Com		sessment 6a: nergy, Form: A	Name: Date: Period:
Sect	ion 1.	Multiple Choice	
C	Choose t	he best answer to each questio	n.
1.	Which	of the following has a meaning	g closest to that of kinetic energy?
	(a)	stored energy	₩
	(b)	potential energy	
	(c)	motion energy	
	(d)	chemical energy	
2.	How n	nuch work is performed when a	a 50 kg crate is pushed 15 m with a force of 20 N?
	(a)	300 J	
	(b)	750 J	
	(c)	$1,000 \; \mathrm{J}$	
	(d)	$15{,}000~{ m J}$	
3.	While	riding your bicycle, if you dou	ble your speed, your kinetic energy will -
	(a)	be unchanged	
	(b)	increase by a factor of 2	
	(c)	increase by a factor of 4	
	(d)	increase by a factor of 8	
4.	A mot the mo	_	height of 2 meters in 3 seconds. What is the power provided by
	(a)	0.20 Watts	
	(b)	2 Watts	
	(c)	18 Watts	
	(d)	19.6 Watts	
5.	Which	of the following has a meaning	g closest to that of potential energy?
	(a)	stored energy	
	(b)	energy at rest	
	(c)	motion energy	
	(d)	gravity energy	
6.	Which energy	_	e best example of kinetic energy being transformed into potential
	(a)	A ball rolling up a hill	
	(b)	dropping a book	

coasting down a hill on a bicycle

starting an automobile engine

(c) (d)

- 7. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
 - (a) Height of the object above the earths surface.
 - (b) The acceleration due to gravity of the earth (g).
 - (c) velocity of the object
 - (d) mass of the object
- 8. 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.

- 9. Calvin and his stuffed tiger, Hobbes, roll down a 45m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.
 - (a) What is the potential energy of the wagon and its passengers at the top of the hill?
 - (b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 474 kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

Answer Key for Exam A

Section 1. Multiple Choice

 $Choose\ the\ best\ answer\ to\ each\ question.$

		1
1.	Which	of the following has a meaning closest to that of kinetic energy?
	(a)	stored energy
	(b)	potential energy
	(c)	motion energy
	(d)	chemical energy
2.	How m	such work is performed when a 50 kg crate is pushed 15 m with a force of 20 N?
	(a)	300 J
	(b)	$750~\mathrm{J}$
	(c)	$1,000 \mathrm{J}$
	(d)	$15,000 \; \mathrm{J}$
3.	While	riding your bicycle, if you double your speed, your kinetic energy will -
	(a)	be unchanged
	(b)	increase by a factor of 2
	(c)	increase by a factor of 4
	$\overline{(d)}$	increase by a factor of 8
4.	A motor the mo	or raises a mass of 3.0 kg to a height of 2 meters in 3 seconds. What is the power provided by tor?
	(a)	0.20 Watts
	(b)	2 Watts
	(c)	18 Watts
	(d)	19.6 Watts
5.	Which	of the following has a meaning closest to that of potential energy?
	(a)	stored energy
	(b)	energy at rest
	(c)	motion energy
	(d)	gravity energy
6.	Which energy	of the following would be the best example of kinetic energy being transformed into potential?
	(a)	A ball rolling up a hill
	(b)	dropping a book
	(c)	coasting down a hill on a bicycle
	(d)	starting an automobile engine
	` /	-

- 7. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
 - (a) Height of the object above the earths surface.
 - (b) The acceleration due to gravity of the earth (g).
 - (c) velocity of the object
 - (d) mass of the object
- 8. 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.

9. Calvin and his stuffed tiger, Hobbes, roll down a 45m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(a) What is the potential energy of the wagon and its passengers at the top of the hill?

(b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 474 kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

Physics		Name:
Common As	sessment 6a:	Date:
Work and E	nergy, Form: B	Period:
Section 1.	Multiple Choice	
$Choose\ t$	he best answer to each question.	
1. Which	of the following has a meaning closest to the	hat of potential energy?
(a)	stored energy	
(b)	energy at rest	
(c)	motion energy	
(d)	gravity energy	
2. 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	nt as it falls.
(b)	The kinetic energy of the ball is constant	as it falls.
(c)	The difference between the potential ener	gy and kinetic energy is a constant as the ball falls.
(d)	The sum of the kinetic and potential ener	gies of the ball is a constant as the ball falls.
3. While	riding your bicycle, if you double your spee	d, your kinetic energy will -
(a)	be unchanged	
(b)	increase by a factor of 2	
(c)	increase by a factor of 4	
(d)	increase by a factor of 8	
4. Which	of the following does \mathbf{NOT} contribute to t	he gravitational potential energy of an object?
(a)	Height of the object above the earths surf	face.
(b)	The acceleration due to gravity of the ear	th (g).
(a)	real acity of the abject	

- (c) velocity of the object
- (d) mass of the object
- 5. Which of the following would be the best example of kinetic energy being transformed into potential energy?
 - (a) A ball rolling up a hill
 - (b) dropping a book
 - (c) coasting down a hill on a bicycle
 - (d) starting an automobile engine
- 6. How much work is performed when a 50 kg crate is pushed 15 m with a force of 20 N?
 - (a) 300 J
 - (b) 750 J
 - (c) 1,000 J
 - (d) 15,000 J

7.	Which of	fthe	following	has a	meaning	closest	to	that	of	kinetic	energy'	?

- (a) stored energy
- (b) potential energy
- (c) motion energy
- (d) chemical energy
- 8. A motor raises a mass of 3.0 kg to a height of 2 meters in 3 seconds. What is the power provided by the motor?
 - (a) 0.20 Watts
 - (b) 2 Watts
 - (c) 18 Watts
 - (d) 19.6 Watts

9. Calvin and his stuffed tiger, Hobbes, roll down a 25m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(a) What is the potential energy of the wagon and its passengers at the top of the hill?

(b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 464 kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

Answer Key for Exam B

Section 1. Multiple Choice

Choose the best answer to each question.

C_{II}	oose u	te vest answer to each question.
1. V	Which	of the following has a meaning closest to that of potential energy?
	(a)	stored energy
	(b)	energy at rest
	(c)	motion energy
	(d)	gravity energy
2. A	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.
3. V	While	riding your bicycle, if you double your speed, your kinetic energy will -
	(a)	be unchanged
	(b)	increase by a factor of 2
	(c)	increase by a factor of 4
	(d)	increase by a factor of 8
4. V	Which	of the following does ${f NOT}$ contribute to the gravitational potential energy of an object?
	(a)	Height of the object above the earths surface.
	(b)	The acceleration due to gravity of the earth (g).
	(c)	velocity of the object
	(d)	mass of the object
	Which energy	of the following would be the best example of kinetic energy being transformed into potentia?
	(a)	A ball rolling up a hill
'	(b)	dropping a book
	(c)	coasting down a hill on a bicycle
	(d)	starting an automobile engine
6. I	How m	auch work is performed when a 50 kg crate is pushed 15 m with a force of 20 N?
	(a)	300 J
	(b)	$750~\mathrm{J}$
	(c)	$1,000 \mathrm{J}$
	(d)	15,000 J

- 7. Which of the following has a meaning closest to that of kinetic energy?
 - (a) stored energy
 - (b) potential energy
 - (c) motion energy
 - (d) chemical energy
- 8. A motor raises a mass of 3.0 kg to a height of 2 meters in 3 seconds. What is the power provided by the motor?
 - (a) 0.20 Watts
 - (b) 2 Watts
 - (c) 18 Watts
 - (d) 19.6 Watts

9. Calvin and his stuffed tiger, Hobbes, roll down a 25m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(a) What is the potential energy of the wagon and its passengers at the top of the hill?

(b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 464 kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

Physics	Name:
Common Assessment 6a:	Date:
Work and Energy, Form: C	Period:
Section 1. Multiple Choice	
Choose the best answer to each question.	
1. While riding your bicycle, if you double your s	peed, your kinetic energy will -

- (a) be unchanged
- (b) increase by a factor of 2
- (c) increase by a factor of 4
- (d) increase by a factor of 8
- 2. Which of the following has a meaning closest to that of potential energy?
 - (a) stored energy
 - (b) energy at rest
 - (c) motion energy
 - (d) gravity energy
- 3. 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.
- 4. How much work is performed when a 50 kg crate is pushed 15 m with a force of 20 N?
 - (a) 300 J
 - (b) 750 J
 - (c) 1,000 J
 - (d) 15,000 J
- 5. Which of the following would be the best example of kinetic energy being transformed into potential energy?
 - (a) A ball rolling up a hill
 - (b) dropping a book
 - (c) coasting down a hill on a bicycle
 - (d) starting an automobile engine
- 6. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
 - (a) Height of the object above the earths surface.
 - (b) The acceleration due to gravity of the earth (g).
 - (c) velocity of the object
 - (d) mass of the object

7.	A motor raises a mass	of 3.0 kg to a	height of	2 meters in	a 3 seconds.	What is the power	provided by
	the motor?						

- (a) 0.20 Watts
- (b) 2 Watts
- (c) 18 Watts
- (d) 19.6 Watts
- 8. Which of the following has a meaning closest to that of kinetic energy?
 - (a) stored energy
 - (b) potential energy
 - (c) motion energy
 - (d) chemical energy

9. Calvin and his stuffed tiger, Hobbes, roll down a 65m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(a) What is the potential energy of the wagon and its passengers at the top of the hill?

(b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 484kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

Answer Key for Exam C

Section 1. Multiple Choice

 $Choose \ the \ best \ answer \ to \ each \ question.$

1.	While	riding your bicycle, if you double your speed, your kinetic energy will -
	(a)	be unchanged
	(b)	increase by a factor of 2
	(c)	increase by a factor of 4
	$\overline{(d)}$	increase by a factor of 8
2.	Which	of the following has a meaning closest to that of potential energy?
	(a)	stored energy
	(b)	energy at rest
	(c)	motion energy
	(d)	gravity energy
3.	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.
4.	How m	uch work is performed when a 50 kg crate is pushed 15 m with a force of 20 N?
	(a)	300 J
	(b)	$750 \mathrm{~J}$
	(c)	$1,000 \; \mathrm{J}$
	(d)	$15,000 \; \mathrm{J}$
5.	Which energy	of the following would be the best example of kinetic energy being transformed into potential ?
	(a)	A ball rolling up a hill
	(b)	dropping a book
	(c)	coasting down a hill on a bicycle
	(d)	starting an automobile engine
6.	Which	of the following does NOT contribute to the gravitational potential energy of an object?
	(a)	Height of the object above the earths surface.
	(b)	The acceleration due to gravity of the earth (g).
	(c)	velocity of the object
	(d)	mass of the object

7.	A motor raises a mass of 3.0 kg to a height of 2 meters in 3 seconds.	What is the power provided by
	the motor?	

- (a) 0.20 Watts
- (b) 2 Watts
- (c) 18 Watts
- (d) 19.6 Watts
- 8. Which of the following has a meaning closest to that of kinetic energy?
 - (a) stored energy
 - (b) potential energy
 - (c) motion energy
 - (d) chemical energy

9. Calvin and his stuffed tiger, Hobbes, roll down a 65m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



- (a) What is the potential energy of the wagon and its passengers at the top of the hill?
- (b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 484kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

	ssessment 6a: nergy, Form: D	Name: Date: Period:
Section 1.	Multiple Choice	
Choose t	he best answer to each question.	
1. While	riding your bicycle, if you double you	r speed, your kinetic energy will -
(a)	be unchanged	
(b)	increase by a factor of 2	
(c)	increase by a factor of 4	
(d)	increase by a factor of 8	
2. Which energy		xample of kinetic energy being transformed into potential
(a)	A ball rolling up a hill	
(b)	dropping a book	
(c)	coasting down a hill on a bicycle	
(d)	starting an automobile engine	
3. A mot the mo		of 2 meters in 3 seconds. What is the power provided by
(a)	0.20 Watts	
(b)	2 Watts	
(c)	18 Watts	
(d)	19.6 Watts	
4. A ball	falls from a height h from a tower. W	Which of the following statements is true?
(a)	The potential energy of the ball is o	constant as it falls.
(b)	The kinetic energy of the ball is cor	nstant as it falls.
(c)	The difference between the potentia	al energy and kinetic energy is a constant as the ball falls.
(d)	The sum of the kinetic and potentia	al energies of the ball is a constant as the ball falls.
5. How n	nuch work is performed when a 50 kg	crate is pushed 15 m with a force of 20 N?
(a)	300 J	
(b)	750 J	
(c)	1,000 J	
(d)	15.000 J	

 $6. \ \ Which of the following does \ \textbf{NOT} \ contribute \ to \ the \ gravitational \ potential \ energy \ of \ an \ object?$

- (a) Height of the object above the earths surface.
- (b) The acceleration due to gravity of the earth (g).
- (c) velocity of the object
- (d) mass of the object

7.	Which	of the	following	has a	meaning	closest	to	that	of	potential	energy?	

- (a) stored energy
- (b) energy at rest
- (c) motion energy
- (d) gravity energy
- 8. Which of the following has a meaning closest to that of kinetic energy?
 - (a) stored energy
 - (b) potential energy
 - (c) motion energy
 - (d) chemical energy

9. Calvin and his stuffed tiger, Hobbes, roll down a 75m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(a) What is the potential energy of the wagon and its passengers at the top of the hill?

(b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 494kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?

Answer Key for Exam D

1. While riding your bicycle, if you double your speed, your kinetic energy will -

Section 1. Multiple Choice

Choose the best answer to each question.

be unchanged

` '	
(b)	increase by a factor of 2
(c)	increase by a factor of 4
(d)	increase by a factor of 8
2. Which energy	of the following would be the best example of kinetic energy being transformed into potential?
(a)	A ball rolling up a hill
(b)	dropping a book
(c)	coasting down a hill on a bicycle
(d)	starting an automobile engine
3. A mot the mo	or raises a mass of 3.0 kg to a height of 2 meters in 3 seconds. What is the power provided by otor?
(a)	0.20 Watts
(b)	2 Watts
(c)	18 Watts
(d)	19.6 Watts
4. 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.
5. How m	nuch work is performed when a 50 kg crate is pushed 15 m with a force of 20 N?
(a)	$300~\mathrm{J}$
(b)	750 J

- 6. Which of the following does ${f NOT}$ contribute to the gravitational potential energy of an object?
 - (a) Height of the object above the earths surface.
 - (b) The acceleration due to gravity of the earth (g).
 - (c) velocity of the object
 - (d) mass of the object

1,000 J 15,000 J

(c)

(d)

7.	Which	of the	following	has a	meaning	closest t	to that	of potential	energy?
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- (a) stored energy
- (b) energy at rest
- (c) motion energy
- (d) gravity energy
- 8. Which of the following has a meaning closest to that of kinetic energy?
 - (a) stored energy
 - (b) potential energy
 - (c) motion energy
 - (d) chemical energy

9. Calvin and his stuffed tiger, Hobbes, roll down a 75m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(a) What is the potential energy of the wagon and its passengers at the top of the hill?

(b) b) What is the final velocity of the wagon at the bottom of the hill? (Assume friction is negligible.)

10. The space probe Deep Space 1, was launched on October 24, 1998. It was the first space probe to use an ion engine, that only generates a weak force of 0.056 N, but requires very little fuel. The probe has a mass of 494kg. The engine ran for a long time, causing the probe to move a distance of 2 billion meters. Assume that the mass of the probe does not change, and no other forces act on the probe. What is the final speed of the probe?