Physics		Name:
Common Ass		Date:
work and E	nergy, Form: A	Period:
Section 1.	Multiple Choice	
Choose ti	he best answer to each question.	
1. How m	nuch work is performed when a 50 kg crate is	s pushed 15 m with a force of 20 N?
(a)	300 J	
(b)	750 J	
(c)	1,000 J	
(d)	15,000  J	
2. While	riding your bicycle, if you double your speed	l, 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	
3. Which	of the following has a meaning closest to th	at of potential energy?
(a)	stored energy	
(b)	energy at rest	
(c)	motion energy	
(d)	gravity energy	
4. A moto the mo		eters in 3 seconds. What is the power provided by
(a)	0.20 Watts	
(b)	2 Watts	
(c)	18 Watts	
(d)	19.6 Watts	
5. A ball	falls from a height h from a tower. Which o	f the following statements is true?
(a)	The potential energy of the ball is constan	t as it falls.
(b)	The kinetic energy of the ball is constant a	as it falls.
(c)	The difference between the potential energ	y and kinetic energy is a constant as the ball falls.
(d)	The sum of the kinetic and potential energ	gies of the ball is a constant as the ball falls.

- (a) A ball rolling up a hill
- (b) dropping a book

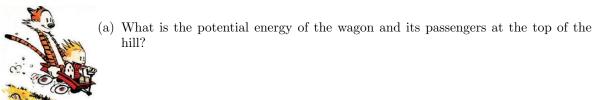
energy?

- (c) coasting down a hill on a bicycle
- (d) starting an automobile engine

6. Which of the following would be the best example of kinetic energy being transformed into potential

- 7. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
  - (a) Height of the object above the earth's surface.
  - (b) The acceleration due to gravity of the earth (g).
  - (c) velocity of the object
  - (d) mass of the object
- 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 45m tall hill in a wagon. The combined mass of Calvin, Hobbes, and the wagon is 35 kg.



(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. 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)	$1,000 \; \mathrm{J}$
(d)	$15,000 \; \mathrm{J}$
2. 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
3. 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
4. A mot the mo	for 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
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.
6. 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
( /	

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

Com		ssessment 6a: nergy, Form: B	Name: Date: Period:
Sect	ion 1.	Multiple Choice	
C	Choose t	he best answer to each question.	
		-	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	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	
3.	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	
4.	Which energy	_	pest 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 bicy	cle
	(d)	starting an automobile engine	
5.	While	riding your bicycle, if you doubl	le 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	
6.	A mot the mo	_	neight of 2 meters in 3 seconds. What is the power provided by
	(a)	0.20 Watts	
	(b)	2 Watts	

18 Watts

19.6 Watts

(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 earth's 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 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

C	Choose th	he 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			
	$\overline{(d)}$	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.	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			
4.		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			
5.	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			
6.	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			

- 7. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
  - (a) Height of the object above the earth's 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 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 Ass		Date:
Work and Ei	nergy, Form: C	Period:
Section 1.	Multiple Choice	
Choose th	he best answer to each question.	
1. Which energy		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	
2. While	riding your bicycle, if you double your speed	l, 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	
3. Which	of the following has a meaning closest to th	at of kinetic energy?
(a)	stored energy	
(b)	potential energy	
(c)	motion energy	
(d)	chemical energy	
4. A moto the mo		eters in 3 seconds. What is the power provided by
(a)	0.20 Watts	
(b)	2 Watts	
(c)	18 Watts	
(d)	19.6 Watts	
5. A ball	falls from a height h from a tower. Which o	f the following statements is true?
(a)	The potential energy of the ball is constant	t as it falls.
(b)	The kinetic energy of the ball is constant a	as it falls.
(c)	The difference between the potential energ	y and kinetic energy is a constant as the ball falls.
(d)	The sum of the kinetic and potential energ	gies of the ball is a constant as the ball falls.
6. Which	of the following has a meaning closest to th	at of potential energy?
(a)	stored energy	

(b)

(c)

(d)

energy at rest

motion energy

gravity energy

			_			
7	How much work is	porformed when a	, 50 kg crata is	nuchod 15 m	with a force	of 20 N?
1.	110W IIIUUII WOIK 18	periormed when a	i ou ke craice is	Dugited 19 III	with a force	OI 40 IN:

- (a)  $300 \, \text{J}$
- (b) 750 J
- (c) 1,000 J
- (d) 15,000 J
- 8. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
  - (a) Height of the object above the earth's surface.
  - (b) The acceleration due to gravity of the earth (g).
  - (c) velocity of the object
  - (d) mass of the object

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

(d) gravity energy

C	choose th	ne best answer to each question.
1.	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
2.	While 1	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
3.	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
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.	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.
6.	Which	of the following has a meaning closest to that of potential energy?
	(a)	stored energy
	(b)	energy at rest
	(c)	motion energy

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١.	How much work is	performed when a	∍ou kg	crate is	pusnea 15 m	with a	force of 20 IN (

- (a) 300 J
- (b) 750 J
- (c) 1,000 J
- (d) 15,000 J
- 8. Which of the following does **NOT** contribute to the gravitational potential energy of an object?
  - (a) Height of the object above the earth's surface.
  - (b) The acceleration due to gravity of the earth (g).
  - (c) velocity of the object
  - (d) mass of the object

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?

Com		sessment 6a: nergy, Form: D	Name: Date: Period:
Sect	ion 1.	Multiple Choice	
C	Choose t	he best answer to each question.	
1.	Which	of the following does <b>NOT</b> con	tribute to the gravitational potential energy of an object?
	(a)	Height of the object above the	
	(b)	The acceleration due to gravit	
	(c)	velocity of the object	,
	(d)	mass of the object	
2.	Which energy		pest 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 bicyc	cle
	(d)	starting an automobile engine	
3.	A mot the mo	_	eight 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.	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	
5.	While	riding your bicycle, if you doubl	le 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	
6.	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

- 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 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 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

## Section 1. Multiple Choice

C	inoose ti	ne best answer to each question.
1.	Which	of the following does <b>NOT</b> contribute to the gravitational potential energy of an object?
	(a)	Height of the object above the earth's surface.
	(b)	The acceleration due to gravity of the earth (g).
	(c)	velocity of the object
	(d)	mass of the object
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 mote	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.	How m	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)	$1,000 \; \mathrm{J}$
	(d)	$15,000 \; \mathrm{J}$
5.	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
6.	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

- 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 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 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?