Name Period Date

CHAPTER 10 Motion

CHAPTER 10 | MOTION

Chapter Test A

Key Concepts

Choose the letter of the best answer. (5 points each)

____ **1.** Motion is a change in
- **a.** position over time
- **b.** speed over time
- **c.** velocity over time
- **d.** acceleration over time

____ **2.** Jenna knows that a friend runs 100 m in 8 s. She could use this to calculate her friend's
- **a.** position
- **b.** motion
- **c.** speed
- **d.** acceleration

____ **3.** Dan sits in a moving car. As he looks out the window, another car is right next to his. When he looks again, the other car is still right next to his. Which of the following is true?
- **a.** The other car is moving faster than Dan's car.
- **b.** The other car is moving slower than Dan's car.
- **c.** The other car is moving with the same speed as Dan's car.
- **d.** The other car is parked.

____ **4.** Jake walks 100 m in 50 s, moving at different speeds. Dividing 100 m by 50 s gives you Jake's
- **a.** acceleration
- **b.** average speed
- **c.** direction
- **d.** velocity

____ **5.** Elena is riding her bicycle. She begins pedaling harder. What do you predict will happen?
- **a.** Her velocity will decrease.
- **b.** Her acceleration will decrease.
- **c.** Her speed will increase.
- **d.** Her position will not change.

____ **6.** Speed in a specific direction is
- **a.** acceleration
- **b.** distance
- **c.** position
- **d.** velocity

____ **7.** Sara walked north at 100 m/s. Han had a different velocity but the same speed. He could have walked
- **a.** north at 200 m/s
- **b.** south at 50 m/s
- **c.** west at 100 m/s
- **d.** north at 100 m/s

____ **8.** Jess drives at a steady velocity. Her acceleration is
- **a.** equal to zero
- **b.** in the same direction as her motion
- **c.** opposite to her motion
- **d.** at a right angle to her motion

____ **9.** Acceleration measures a change in
- **a.** location
- **b.** direction
- **c.** position
- **d.** velocity

____ **10.** On a velocity-time graph, a line that is slanted down from left to right shows
- **a.** negative acceleration
- **b.** positive acceleration
- **c.** zero acceleration
- **d.** steady acceleration

Work and Simple Machines Assessment

2012-2013

S8P3 ~ Students will investigate relationships between force, mass, and the motion of objects.
c. Demonstrate the effect of simple machines (lever, inclined plane, pulley, wedge, screw, and wheel and axle) on work

Multiple Choice:

1. Which of the following is not a simple machine

a. a faucet handle	c. a can opener
b. a jar lid	d. a seesaw

2. Power is

a. how strong someone or something is	c. how much work is being done
b. how much force is being used	d. how fast work is being done

3. In which situation is a person doing work on an object?

a. A school crossing guard raises a stop sign that weighs 10N	c. A man exerts a 350N force on a rope attached to a house
b. A student walks 1 m/s while wearing a backpack that weighs 15N	d. A worker holds a box 1m off the floor

4. Levers are divided into classes according to the location of

a. the fulcrum	c. the input force
b. the load	d. the fulcrum, the load, and the input force

5. Which of the following statements about inclined planes is NOT true?

a. Inclined planes allow you to apply a smaller force over a smaller distance	c. An example of an inclined plane is a wedge
b. Egyptians used inclined planes to build the Great Pyramid	d. A screw is a type of inclined plane

6. Which of the following is NOT an example of work according to the scientific definition of work?

a. playing baseball	c. pushing a wheelbarrow
b. reading a chapter for homework	d. bowling

7. Which of the following actions do more work on an object?

a. lifting an 80N box 1 m up off the floor	c. lifting a 90N box 2 m up off the floor
b. lifting a 160N box 1 m up off the floor	d. lifting a 100 N box 1.5 m up off the floor

8. If you do 50 J of work in 5 s, your power is

a. 10 W	c. 55 W
b. 45 W	d. 250 W

9. Which of the following is NOT a machine?

a. a pair of scissors	c. a screw
b. a glass	d. a bottle opener

10. You apply 200 N to a machine and the machine applies 2000 N to an object. What is the mechanical advantage?

a. 1/10	c. 1800
b. 10	d. 400000

11. A ramp is an example of which simple machine?

a. lever	c. wheel and axle
b. inclined plane	d. pulley

12. Your muscles and bones form a(n)

a. lever	c. wheel and axle
b. inclined plane	d. pulley

13. Third-class levers

a. do not change the direction of the input force	c. results in an output force less than the input force
b. do not increase the input force	d. all of the above

14. Which of the following is NOT a wedge?

a. chisel	c. bottle opener
b. axe head	d. knife

15. A jar lid is an example of a

a. lever	c. wheel and axle
b. screw	d. wedge

16. Which of the following is an example of a wheel and axle?

a. doorknob	c. Ferris wheel
b. wrench	d. all of the above

17. A zipper is made from three

a. inclined planes	c. levers
b. wedges	d. screws

18. Which of the following is an example of a second-class lever?

a. hammer	c. wheelbarrow
b. seesaw	d. oars on a boat

19. In a second-class lever

a. the load is between the fulcrum and the input force	c. the input force is between the fulcrum and the load
b. the fulcrum is between the input force and the load	d. the fulcrum is between the input force and the output force

20. Hammering a nail into wood is an example of using a

a. wedge	c. second-class lever
b. first-class lever	d. third-class lever

Completion:

1. A _____ is the SI unit equivalent to 1 Nm. (watt or joule)

2. The work you do on a machine, such as turning a screwdriver, is called _____. (work input or work output)

3. Because of friction, the _____ of a machine is always less than 100 percent. (mehancial advantage or mechanical efficiency)

4. A _____ is a bar that pivots on a fulcrum. (lever or wedge)

5. A block and tackle is an example of a _____. (wheel and axle or compound machine)

6. _____ is done on an object when force exerted on the object causes it to move in the direction of the force. (force or work)

7. A _____ is a device that changes the size or direction of the force exerted on an object. (pulley or machine)

8. Work done by a machine on an object is called _____. (work input or work output)

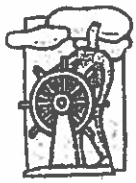
1. Match the simple machine with its correct definition by writing the corresponding number in the answer column.

Simple Machines	Answer
Lever =	
Inclined plane =	
Wedge =	
Screw =	
Wheel and axle =	
Pulley =	

Definitions
1. Something that reduces the friction of moving something.
2. Something that can hold things together or lift an object.
~~3. A ramp.~~
~~4. Something that uses a rope and can change the direction of a force~~
~~5. Something similar to a see-saw that can lift an object.~~
~~6. Something that can split an object apart.~~

2. On the line by each picture, write the type of simple machine.

A. 

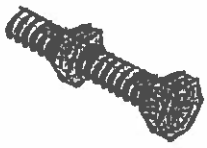
B. 

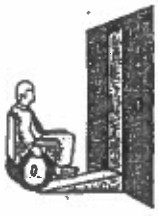
C. 

and

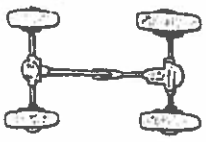
D. 

E. 

F. 

G. 

H. 

I. 

J. 

K. 

L.