

**Test bank for Physical Science 10th Edition Tillery 007351389X
9780073513898**

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Chapter 02 - Motion

**Chapter 02
Motion**

True / False Questions

1. Imagine an experiment in which a 8 lb bowling ball and a 10 lb bowling ball are dropped from the fifth floor at the same time. The heavier ball will reach the ground first.

FALSE

Bloom's Level: 4. Analyze

Section: 2.04

Topic: Gravity

2. When you roll a ball across the floor, it comes to a stop because you are no longer exerting a force on it.

FALSE

Bloom's Level: 4. Analyze

Section: 2.03

Topic: Inertia

3. An object accelerates when it slows or its direction of movement changes.

TRUE

Bloom's Level: 2. Understand

Section: 2.02

Topic: Kinematics

4. A car traveling at 20 mph on a curved exit ramp has a constant velocity.

FALSE

5. Newton's second law states that if an unbalanced force acts on an object, it will move at constant velocity.

FALSE

Bloom's Level: 3. Apply
Section: 2.06
Topic: Newton's laws

6. The reason a moving object slows down is that its force of motion gradually runs out.

FALSE

Bloom's Level: 4. Analyze
Section: 2.03
Topic: Inertia

7. The momentum of an object remains the same unless an unbalanced force acts on it.

TRUE

Bloom's Level: 3. Apply
Section: 2.07
Topic: Momentum

8. Astronauts experience a weightless condition when they are in orbit.

FALSE

Bloom's Level: 4. Analyze
Section: 2.09
Topic: Gravity and Motion

9. The force of gravity near the surface of Earth is 9.8 m/s^2 .

FALSE

Bloom's Level: 2. Understand
Section: 2.04
Topic: Gravity and Motion

10. The attractive force a 70 kg person exerts on Earth is much, much smaller than the force Earth exerts on the person.

FALSE

Bloom's Level: 4. Analyze

Section: 2.06

Topic: Newton's laws

Multiple Choice Questions

11. In the equation $\bar{v} = \frac{d}{t}$, \bar{v} represents

A. average speed.

B. instantaneous speed.

C. final speed.

D. constant speed.

Bloom's Level: 3. Apply

Section: 2.02

Topic: Kinematics

12. Ignoring air resistance, the velocity of a falling object

A. is constant.

B. is constantly increasing.

C. increases for a while, then becomes constant.

D. depends on the mass of the object.

Bloom's Level: 3. Apply

Section: 2.04

Topic: Gravity and Motion

13. The tendency of a moving object to remain in unchanging motion in the absence of an unbalanced force is called

- A.** inertia.
- B. free fall.
- C. acceleration.
- D. impulse.

Bloom's Level: 2. Understand
Section: 2.03
Topic: Inertia

14. A heavy object and a light object are dropped from rest at the same time in a vacuum. The heavier object will reach the ground

- A. before the lighter object.
- B.** at the same time as the lighter object.
- C. after the lighter object.
- D. It depends on the shape of the object.

Bloom's Level: 3. Apply
Section: 2.04
Topic: Gravity and Motion

15. Gravity is an attractive force between

- A. all massive objects.
- B. Earth and objects on Earth.
- C. Earth and Moon, and objects on Earth.
- D.** all objects everywhere.

Bloom's Level: 3. Apply
Section: 2.09
Topic: Newton's laws

Chapter 02 - Motion

16. The newton is a unit of

- A. motion.
- B. energy.
- C. power.
- D. force.**

Bloom's Level: 2. Understand

Section: 2.06

Topic: Newton's laws

17. The weight of a 50 kg box is closest to

- A. 5N.
- B. 50 N. **C.**
- 500 N. D.
- 5000 N.

Bloom's Level: 4. Analyze

Section: 2.06

Topic: Weight and mass

18. The pound is an English unit of measure; its SI counterpart is the

- A. newton.**
- B. kilogram.
- C. joule.
- D. momentum.

Bloom's Level: 3. Apply

Section: 2.06

Topic: Weight and mass

Chapter 02 - Motion

19. Suppose that a rock is swinging in a circle when some string is let out so that the length doubled as the same speed is maintained. The force now exerted on the string is
- A. the same as before.
 - B. doubled.
 - C.** half as great.
 - D. four times as great.

Bloom's Level: 4. Analyze
Section: 2.08
Topic: Circular motion

20. A boy on a skateboard pushes off the ground with his foot. He and the skateboard accelerate down the sidewalk due to the force
- A. he exerts against the ground.
 - B. between the skateboard wheels and the ground.
 - C.** the ground exerts against his foot.
 - D. of gravity acting on the skateboard.

Bloom's Level: 4. Analyze
Section: 2.06
Topic: Newton's laws

21. If an unbalanced force applied to an object doubles, then
- A. its velocity doubles.
 - B.** its acceleration doubles.
 - C. its acceleration is cut in half.
 - D. its acceleration increases by a factor of four.

Bloom's Level: 4. Analyze
Section: 2.06
Topic: Newton's laws

Chapter 02 - Motion

22. Everything that happens in the universe can be traced to interactions of
- A. matter and gravity.
 - B. light and matter.
 - C.** four fundamental forces.
 - D. gravity waves and light.

Bloom's Level: 3. Apply
Section: 2.02
Topic: Forces

23. The mass of a 100 N sack of seed is closest to
- A.** 10 kg.
 - B. 10 lb.
 - C. 98 kg.
 - D. 1,000 kg.

Bloom's Level: 4. Analyze
Section: 2.06
Topic: Weight and mass

24. A block of iron is transported to the Moon. Which of the following is true?
- A. both its mass and weight remain unchanged.
 - B. its mass decreases, but its weight remains the same.
 - C.** its mass remains the same, but its weight decreases.
 - D. both its mass and weight decrease.

Bloom's Level: 4. Analyze
Section: 2.06
Topic: Weight and mass

Chapter 02 - Motion

25. From the equation $w = mg$, it is apparent that weight is a(an)
A. force.
B. mass.
C. acceleration.
D. None of the above.

Bloom's Level: 4. Analyze
Section: 2.06
Topic: Weight and mass

26. If you double the mass of an object while an unbalanced force remains constant,
A. the object moves at half the speed.
B. the acceleration of the object is doubled.
C. the object will gradually slow down.
D. The acceleration of the object is halved.

Bloom's Level: 4. Analyze
Section: 2.06
Topic: Newton's laws

27. If you consider the total distance and total time for a trip, you are calculating a(an)
A. instantaneous speed.
B. constant speed.
C. average speed.
D. non-uniform speed

Bloom's Level: 4. Analyze
Section: 2.02
Topic: Kinematics

28. You should "follow through" when hitting a ball because

- A. this increases the force.
- B. momentum is conserved.
- C.** of the relationship $p = Ft$.
- D. momentum is mv .

Bloom's Level: 4. Analyze

Section: 2.07

Topic: Momentum

29. A cannon ball and a bowling ball were dropped at the same time from the top of a building. At the instant before the balls hit the sidewalk, the cannon ball has greater

- A. velocity.
- B. acceleration.
- C.** momentum.
- D. all of these are the same for the two balls.

Bloom's Level: 4. Analyze

Section: 2.07

Topic: Momentum

30. A 250 g ball travels at a velocity of 40 m/s. Its momentum is

- A. 4 kg·m/s.
- B.** 10 kg·m/s.
- C. 160 kg·m/s.
- D. 10,000 kg·m/s.

Bloom's Level: 3. Apply

Section: 2.07

Topic: Momentum