

## Chapter 01 Test Bank KEY

1. What distinguishes the scientific method from other ways of looking at the natural world is
- A. the eternal truth of its laws and theories.
  - B. its replacement of existing laws and theories at regular intervals.
  - C. its reliance on the opinions of expert scientists to decide which laws and theories to believe.
  - D.** its reliance on experiment and observation.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Gradable: automatic*  
*Section: 01.02*  
*Topic: Scientific Method*

2. A regularity in observed data or a relationship between different quantities is usually called a
- A. hypothesis.
  - B.** law.
  - C. theory.
  - D. model.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.01*  
*Topic: Scientific Method*

3. When first proposed, a scientific idea is usually called a
- A.** hypothesis.
  - B. law.
  - C. theory.
  - D. model.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.01*  
*Topic: Scientific Method*

4. Scientific theories
- A.** must be constantly reviewed to see whether they are in accord with new experimental observations.
  - B. represent guesses that have not yet been compared with observational data.
  - C. are summaries of particular experiments.
  - D. are laws of nature not subject to revision.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Gradable: automatic*  
*Section: 01.01*  
*Topic: Scientific Method*

5. Living things
- A. were created as they are today several thousand years ago.
  - B. were created as they are today several billion years ago.
  - C. were created several thousand years ago and have evolved since then.
  - D.** have evolved throughout the earth's history.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Gradable: automatic*  
*Section: 01.02*  
*Topic: Evolution*

6. The object in the sky that lies very nearly on an extension of the earth's axis is

- A. the sun.
- B. the moon.
- C. Mercury.
- D.** Polaris.

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

*Gradable: automatic*

*Section: 01.03*

*Topic: The Night Sky*

7. The stars in a constellation

- A. are about the same age.
- B. are about the same distance from the earth.
- C.** form a pattern in the sky as seen from the earth.
- D. are members of the solar system.

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

*Figure: 01.04*

*Gradable: automatic*

*Section: 01.03*

*Topic: Constellation*

8. The time at which a given star rises above the horizon each night is

- A.** earlier than the night before.
- B. the same as the night before.
- C. later than the night before.
- D. Any of the choices, depending on which star is involved.

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

**Blooms: 2. Understand**

*Gradable: automatic*

*Section: 01.03*

*Topic: The Night Sky*

9. Relative to the stars, the moon seems to move

- A. northward.
- B. southward.
- C.** eastward.
- D. westward.

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

**Blooms: 2. Understand**

*Gradable: automatic*

*Section: 01.03*

*Topic: The Night Sky*

10. A year is the time needed for

- A. the sun to migrate completely around the sky.
- B. the moon to migrate completely around the sky.
- C. the earth to turn completely on its axis.
- D. None of the choices are correct.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.03*  
*Topic: Cycles of the Sky*

11. A week is the time needed for

- A. the sun to drift completely around the sky.
- B. the moon to drift completely around the sky.
- C. the earth to turn completely on its axis.
- D. None of the choices are correct.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.03*  
*Topic: Cycles of the Sky*

12. A day is the time needed for

- A. the sun to drift completely around the sky.
- B. the moon to drift completely around the sky.
- C. the earth to turn completely on its axis.
- D. None of the choices are correct.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.05*  
*Topic: Cycles of the Sky*

13. The length of the year is

- A. slightly less than 365 days.
- B. exactly 365 days.
- C. slightly more than 365 days.
- D. Any of the above choices, depending on the year.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.05*  
*Topic: Cycles of the Sky*

14. A planet that cannot be seen with the unaided eye is

- A.** Neptune.
- B. Jupiter.
- C. Mars.
- D. Mercury.

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

*Figure: 01.08*

*Gradable: automatic*

*Section: 01.03*

**Topic: Solar System**

15. Arrange the following planets in the order of their distance from the sun.

- 1. Venus
- 2. Mars
- 3. Earth
- 4. Mercury

- A.** 4, 1, 3, 2
- B. 1, 4, 3, 2
- C. 2, 3, 1, 4
- D. 3, 2, 4, 1

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

*Figure: 01.08*

*Gradable: automatic*

*Section: 01.05*

**Topic: Solar System**

16. In which one or more of the following is the earth assumed to be the center of the universe?

- A.** the Ptolemaic system.
- B. the Copernican system.
- C. Kepler's laws of planetary motion.
- D. Newton's law of gravity.

*Accessibility: Keyboard Navigation*

**Blooms: 1. Remember**

*Figure: 01.07*

*Gradable: automatic*

*Section: 01.04*

**Topic: History of Astronomy**

17. The discovery that the planetary orbits are ellipses rather than circles was made by

- A. Ptolemy.
- B. Copernicus.
- C.** Kepler.
- D. Newton.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Gradable: automatic*

*Section: 01.06*

*Topic: History of Astronomy*

18. Kepler modified

- A. the Ptolemaic system.
- B.** the Copernican system.
- C. Newton's law of gravity.
- D. the theory of the tides.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Gradable: automatic*

*Section: 01.06*

*Topic: History of Astronomy*

19. The period of the earth's orbit around the sun is

- A. one day.
- B. one week.
- C. one month.
- D.** one year.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Blooms: 2. Understand*

*Gradable: automatic*

*Section: 01.05*

*Topic: Solar System*

20. The time needed for a planet to orbit the sun

- A. is the same for all planets.
- B. depends on the size of the planet.
- C. depends on the mass of the planet.
- D.** depends on the average distance of the planet from the sun.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Blooms: 2. Understand*

*Gradable: automatic*

*Section: 01.06*

*Topic: Solar System*

21. The speed of a planet in its orbit

- A. is always the same.
- B. is least when it is closest to the sun.
- C. is highest when it is closest to the sun.
- D. Any of the above choices, depending on the planet.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Figure: 01.11*  
*Gradable: automatic*  
*Section: 01.06*  
*Topic: Solar System*

22. Astrology

- A. provides a scientific basis for planning our lives.
- B. correctly predicts the future.
- C. is based on the scientific method.
- D. is nonsense.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Blooms: 2. Understand*  
*Gradable: automatic*  
*Section: 01.07*  
*Topic: History of Astronomy*

23. The scientist who showed that gravity accounts for Kepler's laws of planetary motion was

- A. Newton.
- B. Brahe.
- C. Einstein.
- D. Galileo.

*Accessibility: Keyboard Navigation*  
*Blooms: 1. Remember*  
*Gradable: automatic*  
*Section: 01.08*  
*Topic: Gravity*  
*Topic: History of Astronomy*

24. Gravity is not

- A. a fundamental force.
- B. responsible for holding the moon in orbit around the earth.
- C. responsible for holding atoms and molecules together.
- D. active throughout the universe.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Gradable: automatic*  
*Section: 01.08*  
*Topic: Gravity*

25. Stars and planets are round because

- A. a sphere is the most natural shape.
- B. they rotate.
- C. gravity forces them into this shape.
- D. friction in space grinds them into this shape.

*Accessibility: Keyboard Navigation*

*Blooms: 2. Understand*

*Figure: 01.18*

*Gradable: automatic*

*Section: 01.09*

*Topic: Gravity*

26. If the earth were to revolve on its axis slower than it does today, its shape

- A. would be closer to a perfect sphere.
- B. would be farther from a perfect sphere.
- C. and size would be unchanged.
- D. would not change but it would expand in size.

*Accessibility: Keyboard Navigation*

*Blooms: 2. Understand*

*Blooms: 3. Apply*

*Figure: 01.19*

*Gradable: automatic*

*Section: 01.09*

*Topic: Gravity*

*Topic: Rotational Motion*

27. In most parts of the world high tides occur approximately

- A. twice a day.
- B. once a day.
- C. once a week.
- D. once every two weeks.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Figure: 01.20*

*Gradable: automatic*

*Section: 01.10*

*Topic: Gravity*

28. If the earth had no moon,

- A. there would be no tides.
- B. there would be one high and one low tide per day.
- C. the average tidal range would be smaller.
- D. the average tidal range would be greater.

*Accessibility: Keyboard Navigation*

*Blooms: 4. Analyze*

*Gradable: automatic*

*Section: 01.10*

*Topic: Gravity*

29. Which of the following statements is true?

- A. High tides are caused by the sun, low tides by the moon.
- B. Low tides are caused by the sun, high tides by the moon.
- C.** The moon is chiefly responsible for the tides, with the sun's influence modifying the tidal range.
- D. The sun is chiefly responsible for the tides, with the moon's influence modifying the tidal range.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Gradable: automatic*

*Section: 01.10*

*Topic: Gravity*

30. When the sun, the earth, and the moon are all in line,

- A. high tides and low tides are both higher than usual.
- B. high tides and low tides are both lower than usual.
- C.** high tides are higher than usual and low tides are lower than usual.
- D. high tides are lower than usual and low tides are higher than usual.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Blooms: 2. Understand*

*Gradable: automatic*

*Section: 01.10*

*Topic: Gravity*

31. In the distant past, the length of the day was

- A.** shorter than 24h.
- B. 24h as at present.
- C. longer than 24h.
- D. impossible to determine.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Figure: 01.20*

*Gradable: automatic*

*Section: 01.10*

*Topic: Gravity*

32. The British unit of length closest to the meter is the

- A. inch.
- B. foot.
- C.** yard.
- D. mile.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Gradable: automatic*

*Section: 01.12*

*Topic: SI Units*

33. A person is 5 ft 8.0 in. tall. This is equivalent to

- A.** 173 cm.
- B. 177 cm.
- C. 207 cm.
- D. 223 cm.

*Accessibility: Keyboard Navigation*

*Blooms: 5. Evaluate*

*Gradable: automatic*

*Section: 01.12*

*Topic: SI Units*



34. The number of cubic centimeters in a cubic foot is about

- A.  $1.7 \times 10^3$ .
- B.  $1.7 \times 10^4$ .
- C.**  $2.8 \times 10^4$ .
- D.  $1.7 \times 10^5$ .

*Accessibility: Keyboard Navigation*

*Blooms: 5. Evaluate*

*Gradable: automatic*

*Section: 01.12*

*Topic: SI Units*

35. The prefix giga stands for

- A. 1,000,000.
- B.** 1,000,000,000.
- C. 1/1,000,000.
- D. 1/1,000,000,000.

*Accessibility: Keyboard Navigation*

*Blooms: 1. Remember*

*Gradable: automatic*

*Section: 01.12*

*Topic: SI Units*

36. The shortest of the following is

- A.  $10^4$  in.
- B.  $10^4$  m.
- C.  $10^3$  ft.
- D.** 0.1 mi.

*Accessibility: Keyboard Navigation*

*Blooms: 2. Understand*

*Blooms: 4. Analyze*

*Gradable: automatic*

*Section: 01.12*

*Topic: SI Units*

37. The longest of the following is

- A. 1 mm.
- B.** 0.00001 km.
- C. 0.01 in.
- D. 0.001 ft.

*Accessibility: Keyboard Navigation*

*Blooms: 2. Understand*

*Blooms: 4. Analyze*

*Gradable: automatic*

*Section: 01.12*

*Topic: SI Units*

38. A centimeter is

- A. 0.001 m.
- B.** 0.01 m.
- C. 0.1 m.
- D. 10 m.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Blooms: 4. Analyze*  
*Gradable: automatic*  
*Section: 01.12*  
*Topic: SI Units*

39. A meter is not equal to

- A. 100 cm.
- B.  $10^3$  mm.
- C.** 0.01 km.
- D.  $10^{-3}$  km.

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Blooms: 4. Analyze*  
*Gradable: automatic*  
*Section: 01.12*  
*Topic: SI Units*

40. The size of a picture is given as 84 cm by 255 cm. Since  $(84)(255) = 2.142$  exactly, the area of the picture is correctly expressed as

- A.  $2.142 \text{ m}^2$ .
- B.  $2.14 \text{ m}^2$ .
- C.**  $2.1 \text{ m}^2$ .
- D.  $2 \text{ m}^2$ .

*Accessibility: Keyboard Navigation*  
*Blooms: 2. Understand*  
*Blooms: 3. Apply*  
*Gradable: automatic*  
*Section: 01.12*  
*Topic: SI Units*

41. A nautical mile (nm) is 6076 ft long, and a knot (kn) is a unit of speed equal to 1 nm per hour. How many feet per second does a 10-kn boat move through the water?

- A. 0.059 ft/s
- B. 0.17 ft/s
- C. 1.7 ft/s
- D.** 17 ft/s

*Accessibility: Keyboard Navigation*  
*Blooms: 3. Apply*  
*Gradable: automatic*  
*Section: 01.12*  
*Topic: SI Units*

## Chapter 01 Test Bank Summary

<u>Category</u>	<u># of Questions</u>
<b>Accessibility: Keyboard Navigation</b>	<b>41</b>
<b>Blooms: 1. Remember</b>	<b>25</b>
<b>Blooms: 2. Understand</b>	<b>18</b>
<b>Blooms: 3. Apply</b>	<b>3</b>
<b>Blooms: 4. Analyze</b>	<b>5</b>
<b>Blooms: 5. Evaluate</b>	<b>2</b>
<b>Figure: 01.04</b>	<b>1</b>
<b>Figure: 01.07</b>	<b>1</b>
<b>Figure: 01.08</b>	<b>2</b>
<b>Figure: 01.11</b>	<b>1</b>
<b>Figure: 01.18</b>	<b>1</b>
<b>Figure: 01.19</b>	<b>1</b>
<b>Figure: 01.20</b>	<b>2</b>
<b>Gradable: automatic</b>	<b>41</b>
<b>Section: 01.01</b>	<b>3</b>
<b>Section: 01.02</b>	<b>2</b>
<b>Section: 01.03</b>	<b>7</b>
<b>Section: 01.04</b>	<b>1</b>
<b>Section: 01.05</b>	<b>4</b>
<b>Section: 01.06</b>	<b>4</b>
<b>Section: 01.07</b>	<b>1</b>
<b>Section: 01.08</b>	<b>2</b>
<b>Section: 01.09</b>	<b>2</b>
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<b>Section: 01.12</b>	<b>10</b>
<b>Topic: Constellation</b>	<b>1</b>
<b>Topic: Cycles of the Sky</b>	<b>4</b>
<b>Topic: Evolution</b>	<b>1</b>
<b>Topic: Gravity</b>	<b>9</b>
<b>Topic: History of Astronomy</b>	<b>5</b>
<b>Topic: Rotational Motion</b>	<b>1</b>
<b>Topic: Scientific Method</b>	<b>4</b>
<b>Topic: SI Units</b>	<b>10</b>
<b>Topic: Solar System</b>	<b>5</b>
<b>Topic: The Night Sky</b>	<b>3</b>