

Chemistry 14th edition Timberlake Test Bank

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An Introduction to General, Organic, and Biological Chemistry, 14e (Timberlake)
Chapter 1 Chemistry in Our Lives

1.1 Multiple-Choice Questions

1) Water, H_2O , is an example of a(n) _____.

- A) chemical
- B) solid
- C) wave
- D) electric charge
- E) element

Answer: A

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

2) In this list, which substance can be classified as a chemical?

- A) Salt
- B) Sleep
- C) Cold
- D) Heat
- E) Temperature

Answer: A

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

3) One example of a chemical used in toothpaste is _____.

- A) chlorine
- B) sulfur
- C) carbon dioxide
- D) calcium carbonate
- E) sugar

Answer: D

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

4) Which of the following is not a chemical?

- A) Salt
- B) Water
- C) Light
- D) Carbon dioxide
- E) Sugar

Answer: C

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

5) Sodium fluorophosphate is a chemical used in toothpaste to _____.

- A) make the paste white
- B) disinfect the toothbrush
- C) keep the paste from spoiling
- D) remove plaque
- E) strengthen tooth enamel

Answer: E

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

6) When a part of the body is injured, substances called _____ are released.

- A) aspirins
- B) pain relievers
- C) nitrogen oxides
- D) chlorofluorocarbons
- E) prostaglandins

Answer: E

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

7) Titanium dioxide is a chemical used in toothpaste to _____.

- A) make the paste white
- B) disinfect the toothbrush
- C) keep the paste from spoiling
- D) remove plaque
- E) strengthen tooth enamel

Answer: A

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

8) Which of the following is a chemical?

- A) Sugar
- B) Heat
- C) Light
- D) Noise
- E) A wave

Answer: A

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

9) You notice that there is more traffic between 8 and 9 in the morning. This would be a(n) _____.

- A) observation
- B) hypothesis
- C) experiment
- D) conclusion
- E) all the above

Answer: A

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

10) There is more traffic between 8 and 9 in the morning because most people start work at 9. This would be a(n) _____.

- A) observation
- B) hypothesis
- C) experiment
- D) conclusion
- E) all the above

Answer: B

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

11) To lower your commute time, you take a new route to class. This would be a(n) _____.

- A) observation
- B) hypothesis
- C) experiment
- D) conclusion
- E) all the above

Answer: C

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

12) By the end of the semester, you see that the new route to class has cut 10 minutes a day from your commute time. This would be a(n) _____.

- A) observation
- B) hypothesis
- C) experiment
- D) conclusion
- E) all the above

Answer: D

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

13) One way to enhance your learning in chemistry is to _____.

- A) study a little every day
- B) retest every few days
- C) go to office hours
- D) study different ideas at the same time
- E) all the above

Answer: E

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

14) One way to enhance your learning in chemistry is by _____.

- A) keeping a problem notebook
- B) working the Sample Problem before checking the answer
- C) answering the Engage questions
- D) responding to Thinking About Your Thinking
- E) all the above

Answer: E

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

15) In order to enhance your learning in chemistry, you should not _____.

- A) study a little every day
- B) form a study group
- C) go to office hours
- D) retest every few days
- E) wait until the night before the exam to study

Answer: E

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

16) Which of the following will help you succeed in chemistry?

(1) Underlining key points (2) Retesting after a few days (3) Reading the text before class.

- A) 1, 2, and 3
- B) 1 and 2
- C) 1 and 3
- D) 2 and 3
- E) 3

Answer: D

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

17) In the number 12.345, the 4 is in the _____ place.

- A) tens
- B) ones
- C) tenths
- D) hundredths
- E) thousandths

Answer: D

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

18) In the number 12.345, the 1 is in the _____ place.

- A) tens
- B) ones
- C) tenths
- D) hundredths
- E) thousandths

Answer: A

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

19) In the number 12.345, the 3 is in the _____ place.

- A) tens
- B) ones
- C) tenths
- D) hundredths
- E) thousandths

Answer: C

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

20) Evaluate: $(-4) \times (-5) =$ _____.

- A) -20
- B) 20
- C) -1
- D) 1
- E) 0

Answer: B

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

21) Evaluate: $4 \times (-3) / -2 =$ _____.

- A) -6
- B) 6
- C) -12
- D) 12
- E) 4

Answer: B

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

22) Solve for x : $4x + 2 = 10$, x equals _____.

- A) 8
- B) 12
- C) 3
- D) 2
- E) -2

Answer: D

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

23) Solve for x : $2x + 14 = -2$, x equals _____.

- A) 8
- B) -8
- C) 16
- D) -16
- E) 6

Answer: B

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

24) Evaluate: $-10 - (-4) =$ _____.

- A) 6
- B) -6
- C) 14
- D) -14
- E) 4

Answer: B

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

25) 12 is what percent of 36?

- A) 3%
- B) 30%
- C) 33%
- D) 330%
- E) 12%

Answer: C

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

26) The grades on the first exam are: 30 A's, 20 B's and 10 C's. What is the percentage of B's on the test?

Answer to the ones place.

- A) 33%
- B) 100%
- C) 50%
- D) 20%
- E) 30%

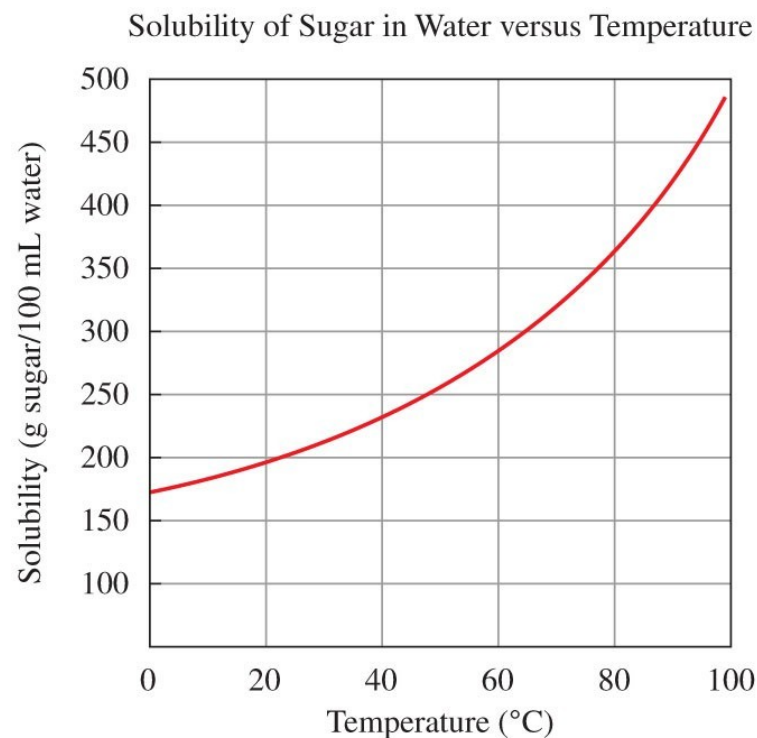
Answer: A

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

27) Use the graph to estimate the solubility of sugar in 100 mL of water at 30 °C.



- A) 150 g
- B) 200 g
- C) 215 g
- D) 255 g
- E) 325 g

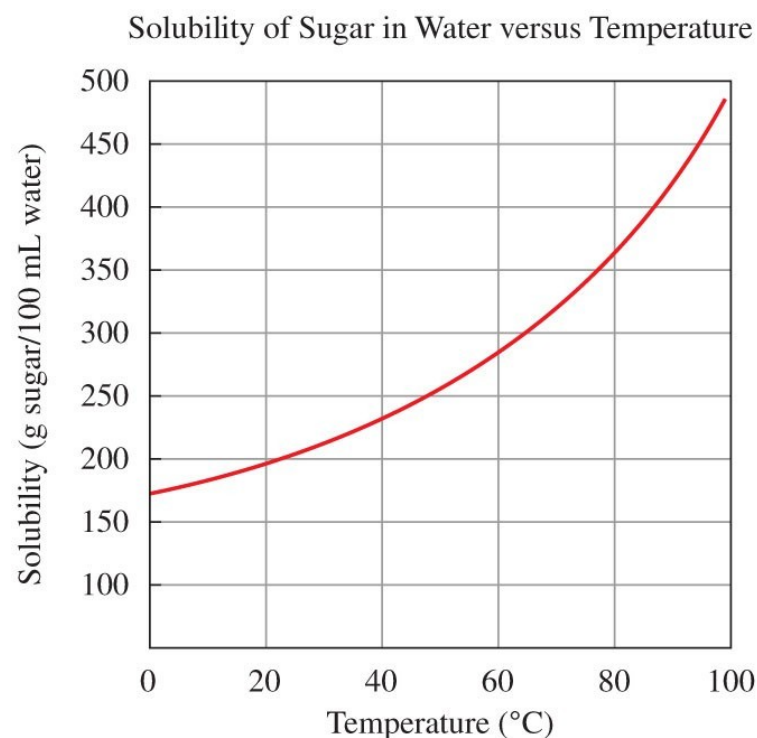
Answer: C

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G3 Read and interpret graphs and data.

28) Use the graph to estimate the temperature at which 300 g of sugar dissolves in 100 mL of water.



- A) 33 °C.
- B) 80 °C.
- C) 40 °C.
- D) 55 °C.
- E) 63 °C.

Answer: E

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G3 Read and interpret graphs and data.

29) Write 540 000 in scientific notation.

A) 0.54×10^6

B) 54×10^8

C) 5.4×10^{-5}

D) 5.4×10^5

E) 5.4

Answer: D

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

30) Write 0.000 000 33 in scientific notation.

A) 3.3×10^7

B) 3.3×10^{-7}

C) 3.3×10^{-8}

D) 3.3×10^8

E) 3.3

Answer: B

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

31) The measurement 0.000 004 3 m, expressed correctly using scientific notation, is _____.

A) 4.3×10^{-7} m

B) 4.3×10^{-6} m

C) 4.3×10^6 m

D) 0.43×10^{-5} m

E) 4.3 m

Answer: B

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

1.2 Short Answer Questions

1) A substance that consists of one type of matter and always has the same composition and properties is called a _____.

Answer: chemical

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

2) Any material used in or produced by a chemical reaction is a _____.

Answer: chemical

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

3) An abrasive used in toothpaste is _____.

Answer: calcium carbonate

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

4) The substances released when tissues are injured are _____.

Answer: prostaglandins

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

5) The chemical used to make cans and foil is _____.

Answer: aluminum

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

6) The first step in the scientific method is to _____.

Answer: make observations

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

7) After making observations, the next step in the scientific method is to _____.

Answer: form a hypothesis

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

8) A procedure that tests a hypothesis is a(n) _____.

Answer: experiment

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

9) For the number 3.456, the place value of 4 is _____.

Answer: tenths

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

10) For the number 3.456, the place value of 3 is _____.

Answer: ones

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

11) Evaluate: $-6 \div -2 =$ _____.

Answer: 3

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

12) Evaluate: $-12 - (-17) =$ _____.

Answer: 5

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

13) Friday, a store sold 10 blue shirts and 20 white shirts. What percentage of the shirts sold were blue?
Give answer to the ones place.

Answer: 33%

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

14) Solve for x : $3x + 8 = -7$

Answer: -5

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

15) Solve for x : $2x / 3 - 2 = 4$

Answer: 9

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

Express each of the following numbers using scientific notation.

16) 351 000 000 000

Answer: 3.51×10^{11}

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

17) 0.000 860

Answer: 8.60×10^{-4}

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

18) 5 207 000

Answer: 5.207×10^6

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

19) 0.000 000 050

Answer: 5.0×10^{-8}

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

1.3 True/False Questions

1) Titanium dioxide in toothpaste is used as a detergent.

Answer: FALSE

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

2) Calcium carbonate is used to sweeten toothpaste.

Answer: FALSE

Section: 1.1

Learning Obj: 1.1

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

3) Paracelsus was a Greek philosopher.

Answer: FALSE

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

4) The first step in the scientific method is to draw a conclusion.

Answer: FALSE

Section: 1.2

Learning Obj: 1.2

Global Outcomes: G1 Demonstrate an understanding of the principles of scientific inquiry.

5) Working with a group of students can help you learn chemistry.

Answer: TRUE

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

6) It is a good idea to wait until the night before an exam to start to study.

Answer: FALSE

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

7) Retesting after a few days can help you learn chemistry.

Answer: TRUE

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

8) Underlining key terms is a good way to succeed in chemistry.

Answer: FALSE

Section: 1.3

Learning Obj: 1.3

Global Outcomes: G7 Demonstrate the ability to make connections between concepts across chemistry.

9) In the number 123.45, the digit 5 is in the hundreds place.

Answer: FALSE

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

10) In the number 0.009 23, the digit 9 is in the thousandths place.

Answer: TRUE

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

11) If a negative number is divided by another negative number, the answer will be a positive number.

Answer: TRUE

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

12) $2x + 9 = -3, x = 3$

Answer: FALSE

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

13) $-2 \times 6 \div -3 = 4$

Answer: TRUE

Section: 1.4

Learning Obj: 1.4

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

14) An animal shelter has 12 dogs and 8 cats. Cats are 40% of the animals.

Answer: TRUE

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

15) 4300 expressed in scientific notations is 4.3×10^{-2} .

Answer: FALSE

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

16) 0.000 67 expressed in scientific notation is 6.7×10^{-4} .

Answer: TRUE

Section: 1.5

Learning Obj: 1.5

Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.