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 _____.

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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.

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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.

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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.

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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.

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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.

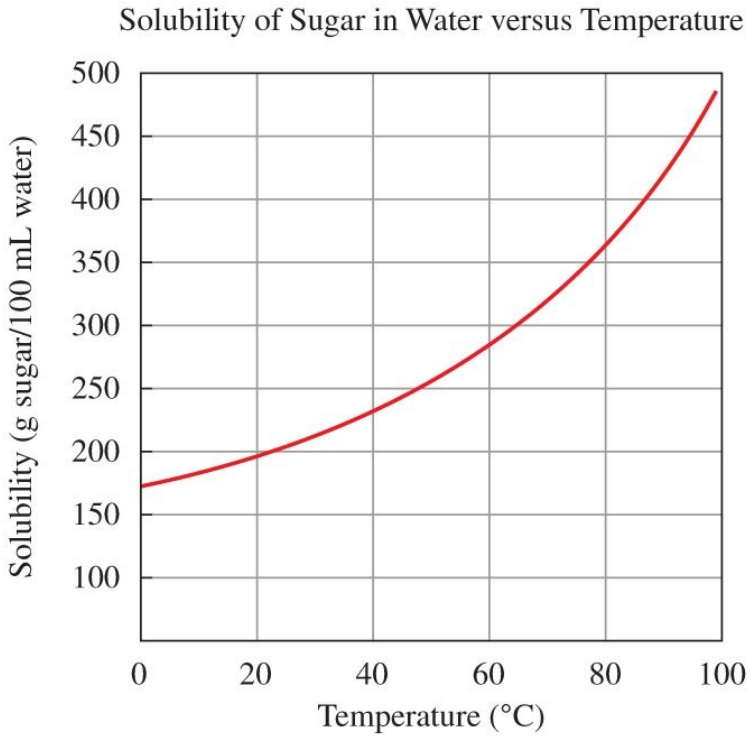
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25) 12 is what percent of 36?
A) 3%
B) 30%
C) 33%
D) 330%
E) 12%
Answer: C
Section: 1.4
Learning Obj: 1.4
Global Outcomes: G4 Demonstrate the quantitative skills needed to succeed in chemistry.

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 $30\ ^{\circ}C$.

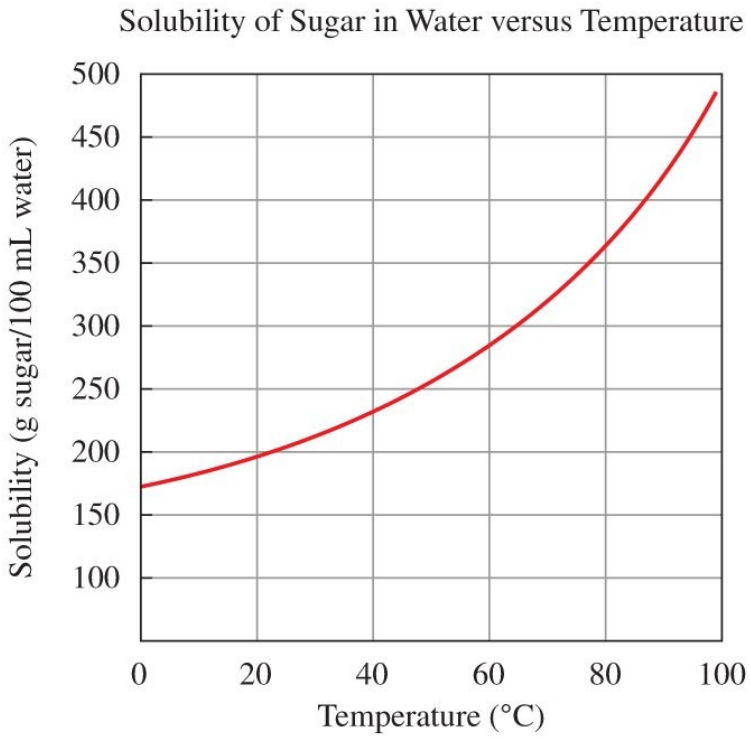


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A) 150 g
B) 200 g
C) 215 g
D) 255 g
E) 325 g
Answer: C
Section: 1.4
Learning Obj: 1.4
Global Outcomes: G3 Read and interpret graphs and data.

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.

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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.

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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: $-6/-2 =$ _____.
Answer: 3

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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

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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

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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 x 6 /$-3 = 4$
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.

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