

Name \_\_\_\_\_

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) In order to enhance your learning in chemistry, you should NOT \_\_\_\_\_. 1) \_\_\_\_\_  
A) be an active learner  
B) go to office hours  
C) wait until the night before the exam to study  
D) form a study group  
E) study a little every day
- 2) Water, H<sub>2</sub>O, is an example of a(n) \_\_\_\_\_. 2) \_\_\_\_\_  
A) element  
B) wave  
C) chemical  
D) solid  
E) electric charge
- 3) One way to enhance your learning in chemistry is to \_\_\_\_\_. 3) \_\_\_\_\_  
A) be an active learner  
B) study a little every day  
C) go to office hours  
D) form a study group  
E) all the above
- 4) Written in scientific notation, 0.000 004 03 is \_\_\_\_\_. 4) \_\_\_\_\_  
A)  $4.03 \times 10^{-6}$   
B) 4.03  
C)  $4.03 \times 10^6$   
D)  $0.403 \times 10^{-5}$   
E)  $4.03 \times 10^{-7}$
- 5) Methyl salicylate is a chemical used in toothpaste to \_\_\_\_\_. 5) \_\_\_\_\_  
A) disinfect the toothbrush  
B) strengthen tooth enamel  
C) keep the paste from spoiling  
D) give a pleasant flavor  
E) make the paste white
- 6) In this list, which substance can be classified as a chemical? 6) \_\_\_\_\_  
A) temperature  
B) salt  
C) cold  
D) heat  
E) sleep
- 7) Which of the following is a chemical? 7) \_\_\_\_\_  
A) noise                      B) a wave                      C) heat                      D) sugar                      E) light

- 8) There is more traffic between 8 and 9 in the morning because most people start work at 9. This would be a(n) \_\_\_\_\_. 8) \_\_\_\_\_  
A) theory  
B) experiment  
C) observation  
D) hypothesis  
E) all the above
- 9) Written in scientific notation, 540 000 is \_\_\_\_\_. 9) \_\_\_\_\_  
A) 5.4                      B)  $5.4 \times 10^5$                       C)  $0.54 \times 10^6$                       D)  $54 \times 10^8$                       E)  $5.4 \times 10^{-5}$
- 10) Sodium fluorophosphate is a chemical used in toothpaste to \_\_\_\_\_. 10) \_\_\_\_\_  
A) keep the paste from spoiling  
B) disinfect the toothbrush  
C) strengthen tooth enamel  
D) make the paste white  
E) remove plaque
- 11) 12 is what percent of 36? 11) \_\_\_\_\_  
A) 33%                      B) 30%                      C) 12%                      D) 330%                      E) 3%
- 12) In the number 12.345, the 1 is in the \_\_\_\_\_ place. 12) \_\_\_\_\_  
A) hundredths  
B) ones  
C) tenths  
D) thousandths  
E) tens
- 13) In the number 12.345, the 4 is in the \_\_\_\_\_ place. 13) \_\_\_\_\_  
A) hundredths  
B) tenths  
C) thousandths  
D) tens  
E) ones
- 14) Which of the following is NOT a chemical? 14) \_\_\_\_\_  
A) gold                      B) salt                      C) oxygen                      D) sugar                      E) noise
- 15) The production of smog from the chemical NO requires \_\_\_\_\_. 15) \_\_\_\_\_  
A) nitrogen                      B) CFCs                      C) water                      D) oxygen                      E) chlorine
- 16) Written in scientific notation, 8300 is \_\_\_\_\_. 16) \_\_\_\_\_  
A)  $8.3 \times 10^3$                       B)  $8.3 \times 10^{-2}$                       C)  $8.3 \times 10^2$                       D)  $8.3 \times 10^{-3}$                       E)  $8.3 \times 10^4$
- 17) One example of a chemical used in toothpaste is \_\_\_\_\_. 17) \_\_\_\_\_  
A) sugar  
B) carbon dioxide  
C) calcium carbonate  
D) chlorine  
E) sulfur

- 18) You notice that there is more traffic between 8 and 9 in the morning. This would be a(n) \_\_\_\_\_. 18) \_\_\_\_\_  
 A) observation  
 B) theory  
 C) hypothesis  
 D) experiment  
 E) all the above
- 19) The first step in the scientific method is \_\_\_\_\_. 19) \_\_\_\_\_  
 A) doing experiments  
 B) making observations  
 C) forming a hypothesis  
 D) using technology  
 E) proposing a theory
- 20) Which of the following is NOT a chemical? 20) \_\_\_\_\_  
 A) water  
 B) sugar  
 C) carbon dioxide  
 D) salt  
 E) light
- 21) Written in scientific notation, 0.000 000 33 is \_\_\_\_\_. 21) \_\_\_\_\_  
 A)  $3.3 \times 10^7$       B) 3.3      C)  $3.3 \times 10^{-7}$       D)  $3.3 \times 10^8$       E)  $3.3 \times 10^{-8}$
- 22) For the equation  $4x + 2 = 10$ , x equals \_\_\_\_\_. 22) \_\_\_\_\_  
 A) 2      B) -2      C) 8      D) 3      E) 12
- 23) Titanium dioxide is a chemical used in toothpaste to \_\_\_\_\_. 23) \_\_\_\_\_  
 A) remove plaque  
 B) strengthen tooth enamel  
 C) make the paste white  
 D) disinfect the toothbrush  
 E) keep the paste from spoiling
- 24) The product of  $(-4) \times (-5)$  is \_\_\_\_\_. 24) \_\_\_\_\_  
 A) -20      B) +1      C) 0      D) -1      E) +20
- 25) When a part of the body is injured, substances called \_\_\_\_\_ are released. 25) \_\_\_\_\_  
 A) pain relievers  
 B) aspirins  
 C) chlorofluorocarbons  
 D) prostaglandins  
 E) nitrogen oxides

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 26) Any material used in or produced by a chemical reaction is a(n) \_\_\_\_\_. 26) \_\_\_\_\_
- 27) The use of observation and hypothesis are important steps in the \_\_\_\_\_ method. 27) \_\_\_\_\_

Express each of the following numbers using scientific notation.

28) 351 000 000 000 28) \_\_\_\_\_

29) A type of matter that has the same composition and properties wherever it is found is a(n) \_\_\_\_\_.

30) A test performed to determine if a hypothesis is valid is called a(n) \_\_\_\_\_.

31) An abrasive used in toothpaste is \_\_\_\_\_.

Express each of the following numbers using scientific notation.

32) 0.000 860 32) \_\_\_\_\_

33) 0.000 000 050 33) \_\_\_\_\_

34) Name the steps in the scientific method. 34) \_\_\_\_\_

35) The science that studies the properties and composition of substances is called \_\_\_\_\_.

36) In the number 34.56, the 4 is in the \_\_\_\_\_ place. 36) \_\_\_\_\_

37) In the scientific method, after data is collected, a(n) \_\_\_\_\_ is proposed which gives a possible explanation. 37) \_\_\_\_\_

38) When two negative numbers are added, the answer is \_\_\_\_\_.

39) An observation takes place when a(n) \_\_\_\_\_ is noted. 39) \_\_\_\_\_

Express each of the following numbers using scientific notation.

40) 5 207 000 40) \_\_\_\_\_

41) In the number 45.678, the digit 6 is in the \_\_\_\_\_ place. 41) \_\_\_\_\_

42) When two positive numbers are added, the answer is \_\_\_\_\_.

43) When a hypothesis is supported by many experiments it becomes a(n) \_\_\_\_\_.

44) Substances which prevent spoilage are called \_\_\_\_\_.

45) The substances released when tissues are injured are \_\_\_\_\_.

46) The brown color of smog is caused by \_\_\_\_\_.

47) A hypothesis can be tested by performing a(n) \_\_\_\_\_.

47) \_\_\_\_\_

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

48) A theory is confirmed after one experiment is performed.

48) \_\_\_\_\_

49)  $3.5 \times 10^3$  is equal to 3500.

49) \_\_\_\_\_

50) Geochemistry is the study of the chemical reactions that take place in the body.

50) \_\_\_\_\_

51) When -7 is added to -5 the answer is 12.

51) \_\_\_\_\_

52) When -5 is multiplied by -3, the answer is 15.

52) \_\_\_\_\_

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

53) \_\_\_\_\_

54) It is best to study only the night before an exam.

54) \_\_\_\_\_

55) The reddish-brown color of smog is due to  $\text{NO}_2$ .

55) \_\_\_\_\_

56)  $(-8) - (4)$  is -12.

56) \_\_\_\_\_

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

57) \_\_\_\_\_

58) The first step in using the scientific method is usually the observation of some natural event.

58) \_\_\_\_\_

59) If  $2x + 2 = 8$ , x is 5.

59) \_\_\_\_\_

60) When -5 is added to -3, the answer is 8.

60) \_\_\_\_\_

61) In the scientific method, a hypothesis has more data to support it than a theory.

61) \_\_\_\_\_

62) Methyl salicylate is used in toothpaste as an abrasive.

62) \_\_\_\_\_

63) General chemistry is the study of the composition, properties, and reactions of matter.

63) \_\_\_\_\_

64) Titanium dioxide in toothpaste is used to give toothpaste a pleasant flavor.

64) \_\_\_\_\_

65)  $2.25 \times 10^{-4}$  is equal to 22500.

65) \_\_\_\_\_

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

66) \_\_\_\_\_

67) Organic chemistry is the study of substances that contain carbon.

67) \_\_\_\_\_

68)  $(-8) - (-4)$  is -12.

68) \_\_\_\_\_

## Answer Key

Testname: C1

- 1) C
- 2) C
- 3) E
- 4) A
- 5) D
- 6) B
- 7) D
- 8) D
- 9) B
- 10) C
- 11) A
- 12) E
- 13) A
- 14) E
- 15) D
- 16) A
- 17) C
- 18) A
- 19) B
- 20) E
- 21) C
- 22) A
- 23) C
- 24) E
- 25) D
- 26) chemical
- 27) scientific
- 28)  $3.51 \times 10^{11}$
- 29) chemical
- 30) experiment
- 31) calcium carbonate
- 32)  $8.60 \times 10^{-4}$
- 33)  $5.0 \times 10^{-8}$
- 34) observation, hypothesis, experiment, theory
- 35) chemistry
- 36) ones
- 37) hypothesis
- 38) negative
- 39) natural phenomenon
- 40)  $5.207 \times 10^6$
- 41) tenths
- 42) positive
- 43) theory
- 44) antioxidants
- 45) prostaglandins
- 46) nitrogen dioxide
- 47) experiment
- 48) FALSE
- 49) TRUE

Answer Key  
Testname: C1

- 50) FALSE
- 51) FALSE
- 52) TRUE
- 53) TRUE
- 54) FALSE
- 55) TRUE
- 56) TRUE
- 57) FALSE
- 58) TRUE
- 59) FALSE
- 60) FALSE
- 61) FALSE
- 62) FALSE
- 63) TRUE
- 64) FALSE
- 65) FALSE
- 66) TRUE
- 67) TRUE
- 68) FALSE