General Organic and Biological Chemistry Structures of Life 6th edition Timberlake Test Bank

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Exam

Name_____

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

1) The SI base unit for length is the 1) _____
A) foot.
B) millimeter.
C) meter.
D) kilometer.
E) inch.

2) The metric unit for volume is the 2) _____
A) liter.
B) quart.
C) meter.
D) centimeter.
E) pint.

3) Which of the following is the basic unit of mass in the SI? 3) _____
A) pound
B) milligram
C) gram
D) microgram
E) kilogram

4) Which of the following is a measurement of mass in the metric system? 4) _____
A) kilogram B) centimeter C) milliliter D) meter E) Celsius

5) Which of the following is a measurement of temperature in the metric system? 5) _____
A) meter
B) degree Celsius
C) lb
D) kilogram
E) degree Fahrenheit

6) A value of 25 °C is a measurement of 6) _____
A) distance.
B) density.
C) mass.
D) temperature.
E) volume.

7) A value of 36 mL is a measure of 7) _____
A) density.
B) volume.
C) temperature.
D) mass.
E) distance.

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8) A value of 345 cm is a measure of 8) _____
A) volume.
B) mass.
C) density.
D) distance.
E) temperature.

9) The amount of space occupied by a substance is its 9) _____
A) mass. B) density. C) volume. D) length. E) weight.

10) The measurement of the gravitational pull on an object is its 10) _____
A) volume. B) size. C) length. D) mass. E) weight.

11) Significant figures are important because they indicate 11) _____
A) the exact numbers in a measurement.
B) the number of digits on a calculator.
C) the certain and estimated digits in a measurement.
D) the accuracy of the conversion factor.
E) the number of measurements.

12) Which of the following measurements has three significant figures? 12) _____
A) 5100 m B) 510 m C) 0.005 m D) 0.510 m E) 0.051 m

13) Which of the following measured numbers contains the designated CORRECT number of significant figures? 13) _____
A) 0.04300 5 significant figures
B) 0.00302 2 significant figures
C) 156 000 3 significant figures
D) 3.0650 4 significant figures
E) 1.04 2 significant figures

14) The number of significant figures in the measurement of 45.030 mm is 14) _____
A) none. B) three. C) four. D) five. E) six.

15) How many significant figures are in the measured number 0.00208 m? 15) _____
A) four B) six C) three D) two E) five

16) Which of the following measurements has the same number of significant figures as the measured number 0.02030? 16) _____
A) 0.0067 B) 4600 C) 4.006 D) 2.03×10^3 E) 510

17) Which of the following examples illustrates a number that is correctly rounded to three significant figures? 17) _____
A) 20.0332 grams to 20.0 grams
B) 0.03954 grams to 0.040 grams
C) 109,526 grams to 109 500 grams
D) 103.692 grams to 103.7 grams
E) 4.05438 grams to 4.054 grams

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18) A calculator answer of 423.6059 must be rounded off to three significant figures. What answer is reported? 18) _____

A) 423.7 B) 423.6 C) 423 D) 424 E) 420

19) Which of the answers for the following calculations contains the correct number of significant figures? 19) _____

A) $12.0 \text{ ft} \times \frac{12 \text{ in.}}{1 \text{ ft}} \times \frac{2.54 \text{ cm}}{1 \text{ in}} = 370 \text{ cm}$

B) $24.95 \text{ min} \times \frac{1 \text{ h}}{60 \text{ min}} = 0.4158 \text{ h}$

C) $2.543 \text{ m} \times \frac{39.4 \text{ in}}{1 \text{ m}} = 100.1942 \text{ in}$

D) $2 \text{ L} \times \frac{1.06 \text{ qt}}{1 \text{ L}} = 2.12 \text{ qt}$

E) $24.0 \text{ kg} \times \frac{1 \text{ lb}}{2.20 \text{ kg}} = 11 \text{ lb}$

20) What is the correct answer for the calculation of a volume (in mL) with measured numbers $\frac{28.58}{16 \times 8.02}$? 20) _____

A) 0.22 mL B) 14.3 mL C) 57 mL D) 14 mL E) 0.223 mL

21) A researcher added three samples of sodium chloride solution; the volumes were: 0.351 mL, 0.350 mL and 0.349 mL. The total volume should be reported as 21) _____

A) 1.0 mL.
B) 1.050 mL.
C) 1.05 mL.
D) 1.0500 mL.
E) 1.1 mL.

22) When 2610 + 11.7 + 0.22 are added, which of the following expresses the answer to the correct number of decimal places? 22) _____

A) 2621.9 B) 2621 C) 2621.92 D) 2600 E) 2620

23) What is the answer, with the correct number of decimal places, for this problem? 23) _____

4.392 g + 102.40 g + 2.51 g =

A) 109.302 g B) 109.3 g C) 109.30 g D) 110 g E) 109 g

24) The correct answer for the addition of 7.5 g + 2.26 g + 1.311 g + 2 g is 24) _____

A) 13.0 g. B) 10 g. C) 13.1 g. D) 13 g. E) 13.071 g.

25) What is the correct answer for the calculation $\frac{36 \times 0.12345}{6.77}$? 25) _____

A) 0.65645 B) 1.52 C) 1.5 D) 0.66 E) 0.656

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26) 5.21 cm is the same distance as 26) _____
A) 0.0521 m.
B) 52.1 dm.
C) 5210 m.
D) 0.00521 km.
E) 5.21 mm.

27) Which of the following measurements are NOT equivalent? 27) _____
A) 183 L = 0.183 kL
B) 84 cm = 8.4 mm
C) 150. ms = 0.150 s
D) 24 dL = 2.4 L
E) 25 mg = 0.025 g

28) In which of the following is the metric unit paired with its correct abbreviation? 28) _____
A) milliliter / mL
B) centimeter / km
C) kilogram / cg
D) gram / gm
E) microgram / mg

29) Which of the following is the largest unit? 29) _____
A) kilometer
B) millimeter
C) meter
D) micrometer
E) decimeter

30) What is the relationship between grams and micrograms? 30) _____
A) 1 g = 100 μg
B) 1 g = 0.001 μg
C) 1 g = 1 000 000 μg
D) 1 g = 1000 μg
E) 1 g = 0.000 001 μg

31) Which of the following is the smallest unit? 31) _____
A) milligram
B) microgram
C) decigram
D) kilogram
E) gram

32) The cubic centimeter (cm^3 or cc) has the same volume as a 32) _____
A) milliliter.
B) centimeter.
C) cubic inch.
D) cubic liter.
E) cubic decimeter.

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33) 9.31 g is the same mass as 33) _____
A) 931 μg. B) 0.0931 dg. C) 93.1 cg. D) 9310 mg. E) 931 kg.

34) In which of the following is the metric unit paired with its correct abbreviation? 34) _____
A) centimeter / cmm
B) kilogram / Kg
C) microgram / Mg
D) milliliter / mcL
E) microgram / mcg

35) What is the conversion factor for the relationship between millimeters and centimeters? 35) _____
A) 100 mm/1 cm
B) 10 mm/1 cm
C) 1 cm/1 mm
D) 10 cm/1 mm
E) 1 mm/1 cm

36) A conversion factor set up correctly to convert 15 inches to centimeters is 36) _____
A) 1 cm/10 mm.
B) 1 inch/2.54 cm.
C) 100 cm/1 m.
D) 10 cm/1 inch.
E) 2.54 cm/1 inch.

37) Which of the following conversion factors is a measured number? 37) _____
A) 10 cm/dm
B) 12 eggs/dozen
C) 25 miles/gallon
D) 12 in/ft
E) 16 oz/lb

38) Parts per million (ppm) is the same as: 38) _____
A) parts per hundred
B) micrograms per kilogram
C) milligrams per kilogram
D) grams per kilogram
E) kilograms per milligram

39) According to the United States Food and Drug Administration, the recommended daily requirement of protein is 44 g. This is _____ oz of protein. 39) _____
A) 1248.5 B) 0.0605 C) 320 000 D) 1.6 E) 150 000

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40) Which of the following setups would convert centimeters to feet? 40) _____

A) $\text{cm} \times \frac{2.54 \text{ in.}}{1 \text{ cm}} \times \frac{1 \text{ ft}}{12 \text{ in.}}$

B) $\text{cm} \times \frac{2.54 \text{ cm}}{1 \text{ in.}} \times \frac{1 \text{ ft}}{12 \text{ in.}}$

C) $\text{cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \times \frac{12 \text{ in.}}{1 \text{ ft}}$

D) $\text{cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \times \frac{1 \text{ ft}}{12 \text{ in.}}$

E) $\text{cm} \times \frac{2.54 \text{ cm}}{1 \text{ in.}} \times \frac{12 \text{ in.}}{1 \text{ ft}}$

41) The EPA limit for lead in the soil of play areas is 400 ppm. This is the same as 41) _____

A) 400 μg lead in each kilogram of soil.
B) 400 mg lead in each gram of soil.
C) 400 μg lead in each milligram of soil.
D) 400 mg lead in each kilogram of soil.
E) 400 g lead in each kilogram of soil.

42) How many pounds are in 3.5 kg? 42) _____

A) 1.59 lb B) 1.6 lb C) 0.629 lb D) 7.70 lb E) 7.7 lb

43) How many centimeters are there in 57.0 in.? 43) _____

A) 22.4 cm B) 140 cm C) 145 cm D) 0.0445 cm E) 22 cm

44) How many kilograms are in 30.4 lb? 44) _____

A) 14 kg B) 66.88 kg C) 13.8 kg D) 66.9 kg E) 67 kg

45) How many liters of soft drink are there in 5.25 qt? 45) _____

A) 4.95 L B) 5.57 L C) 55.7 L D) 5.0 L E) 4950 L

46) What is 6.5 m converted to inches? 46) _____

A) 39 in B) 1700 in C) 1651 in D) 260 in E) 255.9 in

47) 1.00 pint of milk has a volume of how many milliliters? (2 pints = 1 quart) 47) _____

A) 1890 mL B) 472 mL C) 530. mL D) 1000 mL E) 106 mL

48) What is the volume of a cube that measures 4.00 cm on each side? 48) _____

A) 16.0 mL B) 64.0 mL C) 0.640 L D) 64.00 mL E) 64.0 L

49) Grapes are $1.49 per pound. What is the cost of 1.20 kg of grapes? 49) _____

A) $0.81 B) $0.56 C) $2.73 D) $3.94 E) $1.79

50) A driver is traveling at 60 km/h. Is the driver speeding if the speed limit is 45 mph? 50) _____

A) Yes B) No

51) How many kilograms are in 30.4 lb? 51) _____

A) 66.9 kg B) 67 kg C) 14 kg D) 13.8 kg E) 66.88 kg

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52) A dose of aspirin of 5.0 mg per kilogram of body weight has been prescribed to reduce the fever of an infant weighing 8.5 pounds. The number of milligrams of aspirin that should be administered is 52) _____
A) 0.59 mg. B) 5.0 mg. C) 53 mg. D) 19 mg. E) 1.6 mg.

53) A doctor's order is 0.125 g of ampicillin. The liquid suspension on hand contains 250 mg/5.0 mL. How many milliliters of the suspension are required? 53) _____
A) 6.3 mL B) 0.0025 mL C) 2.5 mL D) 0.0063 mL E) 3.0 mL

54) A nugget of gold with a mass of 521 g is added to 50.0 mL of water. The water level rises to a volume of 77.0 mL. What is the density of the gold? 54) _____
A) 6.77 g/mL
B) 10.4 g/mL
C) 19.3 g/mL
D) 1.00 g/mL
E) 0.0518 g/mL

55) Which one of the following substances will float in gasoline, which has a density of 0.66 g/mL? 55) _____
A) balsa wood (density = 0.16 g/mL)
B) table salt (density = 2.16 g/mL)
C) sugar (density = 1.59 g/mL)
D) mercury (density = 13.6 g/mL)
E) aluminum (density = 2.70 g/mL)

56) What is the mass of 2.00 L of an intravenous glucose solution with a density of 1.15 g/mL? 56) _____
A) 1.15 kg B) 0.015 kg C) 0.023 kg D) 2.30 kg E) 0.58 kg

57) Mercury has a specific gravity of 13.6. How many milliliters of mercury have a mass of 0.35 kg? 57) _____
A) 25.7 mL B) 26 mL C) 0.026 mL D) 0.0257 mL E) 4760 mL

58) What is the density of a substance with a mass of 45.00 g and a volume of 26.4 mL? 58) _____
A) 0.59 g/mL
B) 45.0 g/mL
C) 1.70 g/mL
D) 1.7 g/mL
E) 0.587 g/mL

59) A liquid has a volume of 34.6 mL and a mass of 46.0 g. What is the density of the liquid? 59) _____
A) 0.752 g/mL
B) 1330 g/mL
C) 0.663 g/mL
D) 1.00 g/mL
E) 1.33 g/mL

60) What is the mass of 53 mL of ethanol, which has a density of 0.79 g/mL? 60) _____
A) 53 g B) 67 g C) 41.9 g D) 67.1 g E) 42 g

61) The density of a solution is 0.847 g/mL. Its specific gravity is 61) _____
A) 1.2. B) 11.8. C) 0.847. D) 0.118. E) 1.18.

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62) The specific gravity of a solution is 1.18. Its density is 62) _____
A) 1.18 g/mL.
B) 11.8 g/mL.
C) 1.2 g/mL.
D) 0.118 g/mL.
E) 0.847 g/mL.

63) Diamond has a density of 3.52 g/mL. What is the volume in cubic centimeters of a diamond with a mass of 15.1 g? 63) _____
A) 4.29 cm^3 B) 53.2 cm^3 C) 53 cm^3 D) 4.3 cm^3 E) 0.233 cm^3

64) The ratio of the mass of a substance to its volume is its 64) _____
A) conversion factor.
B) weight.
C) buoyancy.
D) density.
E) specific gravity.

65) Which of the following is often used to determine an individual's percentage of body fat? 65) _____
A) temperature
B) weight gain
C) weight loss
D) height
E) density

66) A 50.0 mL urine sample has a mass of 50.7 g. The specific gravity of the urine is 66) _____
A) 0.986 g/L.
B) 1.014 g/mL.
C) 0.986.
D) 50.7.
E) 1.01.

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

Round off each of the following to three significant figures.

67) 504.85 67) _____

68) 8.3158 68) _____

69) 25 225 69) _____

70) 58.5422 70) _____

71) 6.3477×10^4 71) _____

72) 399870 72) _____

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73) 0.003 408 8 73) _____

State the number of significant figures in each of the following measurements.

74) 0.008 090 cm 74) _____

75) 680 000 km 75) _____

76) 28.050 km 76) _____

77) 0.0005 L 77) _____

78) 75.00 m 78) _____

79) 2.043×10^{4} mm 79) _____

80) 6.1×10^{-5} mL 80) _____

81) 9.00×10^{6} g 81) _____

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

82) The basic unit of mass in the metric system is the pound. 82) _____

83) The liter is a unit of volume in the metric system. 83) _____

84) The kelvin is a unit of length in the metric system. 84) _____

85) The number 0.0500 has four significant figures. 85) _____

86) The number 650 000 has two significant figures. 86) _____

87) The number 3.10×10^{3} has two significant figures. 87) _____

88) When the measured number 0.0090 is multiplied by the measured number 87.10, the answer has two significant figures. 88) _____

89) When the measured number 675 is added to the measured number 87.10, the answer should be rounded to the ones place. 89) _____

90) A μg is larger than a mg. 90) _____

91) There are 1000 μg in a mg. 91) _____

92) A cubic centimeter is a unit of length. 92) _____

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93) 1 kilogram is the same as 1000 mg. 93) _____

94) 1 milliliter is the same as 1000 L. 94) _____

95) There are 1000 cm in one meter. 95) _____

96) A conversion factor between mL and L is 1000 L/1 mL. 96) _____

97) A distance of 6.3 inches is the same as 16 cm. 97) _____

98) A stone that weighs 3.6 lbs has a mass of 7.9 kg. 98) _____

99) The density of water is 1 kg/mL. 99) _____

100) Specific gravity has no units. 100) _____

MATCHING. Choose the item in column 2 that best matches each item in column 1.

Match the type of measurement to the unit given below.

101) milliliter	A) mass	101) _____
102) mm	B) temperature	102) _____
103) gram	C) distance	103) _____
104) K	D) volume	104) _____
105) kilometer	E) density	105) _____
106) milligram		106) _____

Are the numbers in each of the following statements measured or exact?

107) In the U.S. system there are 5280 feet in one mile.	A) exact	107) _____
108) The patient's blood sugar level is 350 mg/dL.	B) measured	108) _____
109) There are 452 pages in a book.		109) _____
110) The rabbit weighs 2.5 pounds.		110) _____
111) There are 100 capsules in the bottle.		111) _____

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112) I lost 14 pounds on my diet last month. A) measured 112) _____

113) 1 liter is equal to 1.06 quarts. 113) _____

114) The patient's temperature is 100.1 °F. 114) _____

Select the correct prefix to complete the equality.

115) 1 g = _____ kg A) 1 115) _____

116) 1 m = _____ mm B) 100 116) _____

117) 1 cm = _____ mm C) 0.001 117) _____

118) 1 dL = _____ mL D) 0.1 118) _____

119) 1 kg = _____ g E) 1000 119) _____

120) 1 pg = _____ g F) 10 120) _____

121) 1 g = _____ pg G) 1×10^{12} 121) _____

122) 1 mL = _____ cc H) 0.01 122) _____

I) 1×10^{-12}

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1) C
2) A
3) E
4) A
5) B
6) D
7) B
8) D
9) C
10) E
11) C
12) D
13) C
14) D
15) C
16) C
17) A
18) D
19) B
20) A
21) B
22) E
23) C
24) D
25) D
26) A
27) B
28) A
29) A
30) C
31) B
32) A
33) D
34) E
35) B
36) E
37) C
38) C
39) D
40) D
41) D
42) E
43) C
44) C
45) A
46) D
47) B
48) B
49) D
50) B

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51) D
52) D
53) C
54) C
55) A
56) D
57) B
58) C
59) E
60) E
61) C
62) A
63) A
64) D
65) E
66) E
67) 505
68) 8.32
69) 25 200
70) 58.5
71) 6.35×10^4
72) 4.00×10^5
73) 0.003 41
74) 4
75) 2
76) 5
77) 1
78) 4
79) 4
80) 2
81) 3
82) FALSE
83) TRUE
84) FALSE
85) FALSE
86) TRUE
87) FALSE
88) TRUE
89) TRUE
90) FALSE
91) TRUE
92) FALSE
93) FALSE
94) FALSE
95) FALSE
96) FALSE
97) TRUE
98) FALSE
99) FALSE

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100) TRUE
101) D
102) C
103) A
104) B
105) C
106) A
107) A
108) B
109) A
110) B
111) A
112) A
113) A
114) A
115) C
116) E
117) F
118) B
119) E
120) I
121) G
122) A

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