Introduction to General Organic and Biochemistry 12th edition Bettelheim Test Bank

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Chapter 1

1. Which of the following is an example of matter?
   a. the light of a flame
   b. the sound of thunder
   c. the air you breathe
   d. None of these are matter.

ANSWER: c
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

2. Which of the following is **not** an example of matter?
   a. the air in your lungs
   b. the blood in your arteries
   c. the sunlight coming through the window
   d. None; all of these are matter.

ANSWER: c
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

3. Which of the following is a chemical property of water?
   a. Water vapor has no definite volume.
   b. Water has a density of 1000 kg/m^3.
   c. Water reacts violently with potassium.
   d. Ice floats in water.

ANSWER: c
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

4. Which of the following is a chemical property of gold?
   a. characteristic color
   b. electrical conductivity
   c. lack of reactivity
   d. None; they are all physical properties.

ANSWER: c
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

5. Which of the following is **not** a physical property of copper?
   a. characteristic color
   b. density
   c. electrical conductivity
   d. tarnishing of copper

ANSWER: d
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

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6. Which of the following is **not** a chemical change?
   a. rusting of an iron statue
   b. burning of paper
   c. curdling of milk
   d. evaporation of river water

ANSWER: d
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

7. Which of the following represents a physical change?
   a. stretching of a silver wire
   b. tarnishing of silver
   c. both stretching of a silver wire and tarnishing of silver
   d. neither stretching of a silver wire and tarnishing of silver

ANSWER: a
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

8. Which of the following represents a physical change?
   a. boiling of water
   b. decomposition of a dead organism
   c. both boiling of water and decomposition of a dead organism
   d. neither boiling of water or decomposition of a dead organism

ANSWER: a
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

9. Which of the following represents a physical change?
   a. burning of fuel oil
   b. melting of ice
   c. both burning of fuel oil and melting of ice
   d. neither burning of fuel oil or melting of ice

ANSWER: b
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

10. Which of the following is synonymous with "fact"?
   a. a hypothesis
   b. an observation that is reproducible
   c. an observation that is not reproducible
   d. none of these

ANSWER: b
TOPICS: 1.2 - THE SCIENTIFIC METHOD
KEYWORDS: BLOOM'S: REMEMBER

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11. Which of the following is **not** true of a hypothesis?
    a. It is a tentative idea or explanation that cannot be disproved by an experiment.
    b. It is a tentative idea or explanation that cannot be proven by an experiment.
    c. It is a tentative idea that can either be proven or disproved by an experiment.
    d. It is a belief that is not based on facts and is asserted without any proof.

ANSWER: d
TOPICS: 1.2 - THE SCIENTIFIC METHOD
KEYWORDS: BLOOM'S: UNDERSTAND

12. Which of the following best describes a scientific theory?
    a. It is just one of many ways of looking at things.
    b. It is a point of view that cannot be challenged.
    c. It is a widely accepted explanation of some phenomenon supported by a large amount of experimental data and is therefore definitely correct.
    d. It is a widely accepted explanation of some phenomenon supported by a large amount of experimental data, but it can be shown to be incorrect by a single experiment that yields results that contradict it.

ANSWER: d
TOPICS: 1.2 - THE SCIENTIFIC METHOD
KEYWORDS: BLOOM'S: UNDERSTAND

13. The area of Russia is approximately 17.1 million square miles. Which of the following correctly represents this number in scientific notation?
    a. 1.71×10^5
    b. 1.71×10^6
    c. 1.71×10^7
    d. 1.71×10^8

ANSWER: c
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

14. During its orbit, the Earth's minimum distance from the sun is approximately 148 million kilometers. Which of the following correctly represents this number in scientific notation?
    a. 1.48×10^5
    b. 1.48×10^6
    c. 1.48×10^7
    d. 1.48×10^8

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

15. In one second, light travels 2.998×10^8 meters. Which of the following is the correct way to write this in conventional notation?
    a. 0.00000002998 m/s
    b. 2,998,000 m/s

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c. 299,800,000 m/s

d. none of these

ANSWER: c
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

16. The population of the Earth at the end of 2018 was approximately 7.7×10^9 people. Which of the following is the correct way of representing this number?

a. 7,700,000,000 people

b. 77,000,000,000 people

c. 77,000,000,000,000 people

d. none of these

ANSWER: a
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

17. The land surface area of the earth is approximately 1.49×10^8 km^2. Which of the following is the correct way to write this in conventional notation?

a. 0.00000000149 km^2

b. 149,000,000 km^2

c. 14,900,000,000 km^2

d. none of these

ANSWER: b
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

18. Sometimes, the same word can have different meanings. In the United States the word billion means "a thousand million" but in Britain the word billion means "a million million." Which of the following corresponds to the "British billion"?

a. 1×10^{-9}

b. 1×10^{-6}

c. 1×10^9

d. 1×10^{12}

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

19. Nanoparticles have an approximate length of 0.1×10^{-10} meters. Which of the following is the correct way to write this in conventional notation?

a. 0.00000000001 m

b. 0.000000001 m

c. 10,000,000 m

d. 1,000,000,000 m

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ANSWER: a
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

20. Which of the following is the largest number?
    a. 3×10^{-2}
    b. 5×10^{4}
    c. 3×10^{3}
    d. 3.5×10^{-6}

ANSWER: b
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

21. Which of the following is the smallest number?
    a. 8×10^{-3}
    b. 6×10^{-4}
    c. 7×10^{-5}
    d. 9×10^{-6}

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

22. Given the calculation: 5.63 + 2.302 + 3.1 = ?, what is the answer reported to the correct number of significant figures?
    a. 11.032
    b. 11.03
    c. 11.0
    d. 11.1

ANSWER: c
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

23. Given the calculation: 2.377 + 1.487 + 7.02 = ?, what is the answer reported to the correct number of significant figures?
    a. 10.884
    b. 10.89
    c. 10.88
    d. 10.9

ANSWER: c
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

24. Given the calculation 5.63 + 2.302 – 3.1 = ?, what is the answer reported to the correct number of significant figures?
    a. 4.83

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b. 4.832
c. 4.9
d. 4.8

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

25. Given the calculation: 10.44 – 6.778 – 2.1 = ?, what is the answer reported to the correct number of significant figures?
a. 1.55
b. 1.5
c. 1.56
d. 1.6

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

26. Given the calculation: 4.238 × 9.1 = ? What is the answer reported to the correct number of significant figures?
a. 38.5658
b. 38.57
c. 38.6
d. 39

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

27. Given the calculation: 1.987 × 6.02 = ?, what is the answer reported to the correct number of significant figures?
a. 11.96174
b. 11.96
c. 12.0
d. 12

ANSWER: c
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

28. Given the calculation: 25.34/5.98 = ?, what is the answer reported to the correct number of significant figures?
a. 4.2375
b. 4.238
c. 4.23
d. 4.24

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

29. Given the calculation: 34.343/14.123 = ?, what is the answer reported to the correct number of significant figures?

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a. 2.43171
b. 2.4317
c. 2.432
d. 2.43

ANSWER: b
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

30. Given the calculation: $(2.33 \times 10^{7}) \times (6.7 \times 10^{5}) = ?$, what is the answer reported to the correct number of significant figures?

a. 1.5611×10^{13}
b. 1.6×10^{13}
c. 1.56×10^{13}
d. 2×10^{13}

ANSWER: b
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

31. Given the calculation: $(3.83 \times 10^{-3}) \times (7.777 \times 10^{7}) = ?$, what is the answer reported to the correct number of significant figures?

a. 2.98×10^{5}
b. 2.978×10^{5}
c. 0.298×10^{6}
d. 0.2978×10^{6}

ANSWER: a
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

32. Given the calculation: $(12.02 \times 10^{23})/22.00 = ?$, what is the answer reported to the correct number of significant figures?

a. 5.56×10^{-23}
b. 5.55×10^{-23}
c. 5.5×10^{22}
d. 5.464×10^{22}

ANSWER: d
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

33. Given the calculation: $(2.343 \times 10^{-24})/(5.23 \times 10^{7}) = ?$, what is the answer reported to the correct number of significant figures?

a. 1.225×10^{31}

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b. 1.22×10^{31}

c. 4.48×10^{-32}

d. 4.47×10^{-32}

ANSWER: c
TOPICS: 1.3 - REPORTING NUMBERS IN SCIENCE
KEYWORDS: BLOOM'S: UNDERSTAND

34. Which metric prefix is commonly abbreviated using a Greek letter?

a. mega
b. micro
c. milli
d. nano

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

35. Which of the following is the correct order of lengths?

a. mm > cm > m > km
b. cm > km > nm > mm
c. km > cm > mm > μm
d. mm > m > cm > km

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

36. Which of the following is the correct order of lengths?

a. nm < mm < cm < μm
b. cm < nm < μm < mm
c. nm < μm < cm < m
d. μm < nm < cm < mm

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

37. How many millimeters (mm) are there in 1 megameter (Mm)?

a. 1×10^{-6}

b. 1×10^{-9}

c. 1×10^{9}

d. 1×10^{6}

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

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38. How many megameters (Mm) are there in 1 millimeter (mm)?

a. 1×10^{-9}

b. 1×10^{-6}

c. 1×10^{6}

d. 1×10^{9}

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

39. How many nanoliters (nL) are there in 1 liter (L)?

a. 1×10^{-12}

b. 1×10^{-9}

c. 1×10^{9}

d. 1×10^{12}

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

40. How many liters (L) are there in 1 nanoliter (nL)?

a. 1×10^{-9}

b. 1×10^{-6}

c. 1×10^{6}

d. 1×10^{9}

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

41. How many microliters (μL) are there in 1 kiloliter (kL)?

a. 1×10^{-6}

b. 1×10^{-9}

c. 1×10^{9}

d. 1×10^{6}

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

42. How many kiloliters (kL) are there in 1 microliter (μL)?

a. 1×10^{-6}

b. 1×10^{-9}

c. 1×10^{9}

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d. 1×10^6

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

43. In the SI system of units, the cubic meter (m^3) is the basic unit of volume. A volume of 1 m^3 is equal to which of the following?

a. 1 L
b. 10 L
c. 100 L
d. 1000 L

ANSWER: d
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

44. A decimeter (dm) is 0.1 m. Sometimes, the volume of a liquid is specified in units of cubic decimeters. Which of the following volumes equals 1 cubic decimeter?

a. 1 L
b. 10 L
c. 1 kL
d. 100 L

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

45. In the SI system of units, the basic unit of volume is the cubic meter (m^3). The cubic meter is equal to which of the following?

a. 10^{-9} nL
b. 10^9 nL
c. 10^{12} nL
d. 10^{27} nL

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

46. The standard metric unit of volume, the liter, is equal to which of the following?

a. 1 μm^3
b. 10^9 μm^3
c. 10^{15} μm^3
d. 10^6 μm^3

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

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47. Which of the following is the correct order of masses?
    a. cg > mg > ng >kg
    b. cg > ng > kg > mg
    c. kg > cg > mg > ng
    d. mg > cg > ng > kg

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

48. Which of the following is the correct order of masses?
    a. cg < mg < Mg <μg
    b. cg < Mg < μg < mg
    c. μg < mg < cg < Mg
    d. μg < Mg < cg < mg

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

49. How many kilograms (kg) are there in 1 microgram (μg)?
    a. 1×10^{-6}
    b. 1×10^{-9}
    c. 1×10^{9}
    d. 1×10^{6}

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

50. How many micrograms (μg) are there in 1 kilogram (kg)?
    a. 1×10^{-9}
    b. 1×10^{-6}
    c. 1×10^{6}
    d. 1×10^{9}

ANSWER: d
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

51. How many centigrams (cg) are there in 1 microgram (μg)?
    a. 1×10^{-6}
    b. 1×10^{-4}
    c. 1×10^{4}
    d. 1×10^{-2}

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ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

52. How many micrograms (μg) are there in 1 centigram (μg)?
   a. 1×10^{-6}
   b. 1×10^{-4}
   c. 1×10^{4}
   d. 1×10^{-2}

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: REMEMBER

53. An intern made an error and gave a patient a dose of 60 mg rather than 600 μg of a drug. Which of the following is true?
   a. The patient received an overdose by a factor of 100.
   b. The patient received an overdose by a factor of 1000.
   c. The patient received an underdose by a factor of 100.
   d. The patient received an underdose by a factor of 1000.

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

54. An intern made an error and gave a patient a dose of 600 μg rather than 60 mg of a drug. Which of the following is true?
   a. The patient received an overdose by a factor of 100.
   b. The patient received an overdose by a factor of 1000.
   c. The patient received an underdose by a factor of 100.
   d. The patient received an underdose by a factor of 1000.

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

55. How many minutes are there in a 24-hour day? (Assume exactly 24 hours in a day.)
   a. 60
   b. 1.44×10^{3}
   c. 3.60×10^{3}
   d. 8.64×10^{4}

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

56. How many seconds are there in two 24-hour days? (Assume exactly 24 hours in a day.)

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a. 7.20×10^2
b. 1.73×10^5
c. 2.59×10^6
d. 8.64×10^4

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

57. How many minutes are in a 365-day year? (Assume exactly 24 hours in a day.)
a. 8.760×10^3
b. 2.190×10^4
c. 5.256×10^5
d. 3.154×10^7

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

58. What temperature on the Kelvin scale is the same as normal body temperature 98.6°F?
a. 371.6 K
b. 310.0 K
c. 119.9 K
d. 137.0 K

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

59. Daytime temperatures in a desert can reach 50.0°C. What is this temperature on the Fahrenheit temperature scale?
a. 323.0°F
b. 122.0°F
c. 150°F
d. none of these

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

60. The lowest temperature recorded on Pluto was -400°F. What is this temperature on the Celsius temperature scale?
a. –273°C
b. –240°C
c. –340°C
d. –288°C

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

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61. At what temperature do the temperatures on the Celsius and Fahrenheit scales have the same numerical value?
    a. –40
    b. 0
    c. 32
    d. at no value

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

62. At what temperature do the temperatures on the Celsius and Kelvin scales have the same numerical value?
    a. –40
    b. 0
    c. 32
    d. at no value

ANSWER: d
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

63. What Celsius temperature is the same as 86.0°F?
    a. 30.0°C
    b. 186.8°C
    c. 76.6°C
    d. none of these

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

64. The boiling point of methanol is 65°C. What is this temperature on the Fahrenheit scale?
    a. 158°F
    b. 132°F
    c. 149°F
    d. 179°F

ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

65. The boiling point of liquid oxygen is 90.2 K. What is this temperature on the Celsius scale?
    a. 363.2°C
    b. 171°C
    c. 25°C
    d. –182.8°C

ANSWER: d
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

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66. What is the metric length of the 200-yard dash? [1 inch = 2.54 cm (exactly)]
    a. 1830 cm
    b. 508 cm
    c. 183 m
    d. 508 m

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

67. The 20,000-meter run is a long-distance Olympic race. What is the approximate length of this run in feet? Round off your answer to three significant figures. [1 meter is equal 39.37 inches]
    a. 6.09×10^4 ft
    b. 6.562×10^4 ft
    c. 6.6×10^4 ft
    d. 6.56×10^4 ft

ANSWER: d
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

68. The length of an American football field is 250 yards. What is the approximate length of this field in meters? [1 meter is slightly longer than 39 inches]
    a. 2.286 km
    b. 9.75 km
    c. 228.6 m
    d. 9.75 m

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

69. A 100-mL beaker is a common piece of laboratory glassware. What is this volume in the English system of units? [1 quart = 0.946; 1 liter = 32 fl oz]
    a. 0.13 fl oz
    b. 33.8 qt
    c. 3.38 fl oz
    d. 1.3 qt

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

70. A certain automobile has an 15-gallon gas tank. What is the volume of this tank in liters? [1 gallon = 4 quarts; 1 quart = 0.946 liter]
    a. 5.7 L
    b. 60 L
    c. 57 L

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d. 60.95 L

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

71. If you went to a cheese shop in Edam, Holland and wanted to buy approximately 2 pounds of Edam cheese, which of the following would you ask for?

a. 90 g
b. 0.91 kg
c. 0.45 kg
d. 9.1 kg

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

72. A Frenchman in New York wants to buy approximately 3 kg of potatoes. How much cheese should he ask for? [1 pound = 453.6 grams]

a. 4 1/4 lb
b. 7 1/2 lb
c. 6.6 lb
d. 6.0 lb

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

73. What is the mass of a half-pound hamburger in the metric system? [1 pound = 453.6 grams]

a. 227 mg
b. 227 g
c. 0.5 kg
d. 0.7814 kg

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

74. An object weighs 70.7 kg. What is the weight of this object in the English system? [1 pound = 453.6 grams]

a. 32.07 pounds
b. 155.86 pounds
c. 1.56 pounds
d. 524.3 pounds

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

75. If gasoline costs $3.79 per gallon, what is its cost per liter? [1 quart = 0.946 liter]

a. 1.00 ¢

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b. 100 ¢
c. 379 ¢
d. 739 ¢

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

76. A particular model of hybrid car can travel 53.0 miles/gallon of gas. What is this fuel efficiency expressed in the metric system? [1 quart = 0.946 liter; 1 mile = 1.609 km]
a. 8.71 km/liter
b. 20.2 km/liter
c. 22.5 km/liter
d. 90 km/liter

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

77. A studio apartment in Paris has an area of 81.0 square meters. A New York apartment with which of the following areas has the roughly the same area as the Paris apartment? [1 meter = 1.094 yards]
a. 900 square feet
b. 886 square feet
c. 775 square feet
d. 872 square feet

ANSWER: d
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

78. If a 1.000 L bottle of champagne cost 134 Euros and the exchange rate is 1 Euro = $1.33 (US), what is the cost in dollars for 8.000 fluid ounces of this champagne? [1 fluid ounce = 29.57 mL]
a. $5.26
b. $42.15
c. $47.09
d. $81.31

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

79. In Europe, the areas of apartments are typically listed in square meters (m^2). If the area of an American apartment is 1.6×10^3 ft^2, a Paris apartment with which of the following areas has roughly the same area as the New York apartment? [1 meter = 1.094 yards]
a. 120 m^2
b. 178 m^2
c. 149 m^2
d. 160 m^2

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ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

80. The area of Europe is 1.05×10^7 km^2. Which of the following shapes has an area most nearly equal to the area of Europe? [1 mile = 1.609 km]

a. a rectangle 2,000 miles by 1,000 miles
b. a rectangle 2,000 miles by 1,500 miles
c. a square 2,000 miles on a side
d. none of these

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

81. The unit of weight used for precious stones is the carat (1 carat = 200 mg, exactly). If a particular 1.25 carat diamond cost $7000.00, what is the cost of a collection of identical diamonds that weigh 1.00 ounce? [1 ounce = 28.35 grams]

a. $28,320
b. $35,8700
c. $16,750
d. $793,800

ANSWER: d
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

82. At the 2008 Olympics, the Jamaican runner Usain Bolt ran the 100-meter dash in world record time of 9.69 seconds. What is this speed in miles per hour?
[1 mile = 1.609 km]

a. 2.31 mph
b. 4.33 mph
c. 23.1 mph
d. 43.3 mph

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

83. At the 2008 Olympics, the Jamaican runner Usain Bolt ran the 200-meter dash in world record time of 19.30 seconds. What is this speed in miles per hour? [1 mile = 1.609 km]

a. 43.1 mph
b. 23.2 mph
c. 4.31 mph
d. 2.32 mph

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

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84. In a race, the winner ran the 100-meter dash in a world record time of 12.2 seconds. What is this speed in miles per hour?
[1 mile = 1.609 km]

a. 2.28 mph
b. 81.96 mph
c. 18.34 mph
d. 8.2 mph

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

85. In the Greece Olympics, a runner won the 10,000-meter run in 34 minutes, 2.1 seconds. What is this speed in miles per hour? [1 mile = 1.609 km]

a. 1.38 mph
b. 4.89 mph
c. 13.8 mph
d. 11.0 mph

ANSWER: d
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

86. The dimensions of a room are typically given in feet, but carpeting is sold by the square yard. How many square yards of carpet are required to cover the floor of a room that is 9 feet by 9 feet?

a. 81 square yards
b. 18 square yards
c. 9 square yards
d. 810 square yards

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

87. A can of soda has a volume of 402 mL. The area of a circle is given as $A = r^2$, where r is the radius of the circle; the volume of the can is given by $V = (r^2)h$, where h is the height of the can. If a particular can has a height of 10.8 cm, what is the radius of the can?

a. 3.44 mm
b. 3.44 cm
c. 11.85 cm
d. 6.88 cm

ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

88. The dimensions of a piece of wood are 3.4 meters x 10 cm x 175 mm. What is the volume of this piece of wood?

a. 5.95×10^{-2} mm^3
b. 5.95×10^{3} cm^3

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c. 5.95×10^{-3} cm^3

d. 5.95×10^{-2} m^3

ANSWER: d
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

89. Which state of matter is highly compressible?

a. solid

b. liquid

c. gas

d. none of them

ANSWER: c
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

90. Which state of matter retains its volume but adapts its shape to that of its container?

a. solid

b. liquid

c. gas

d. none of these

ANSWER: b
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

91. Which state of matter is essentially incompressible?

a. solid

b. liquid

c. gas

d. none of them

ANSWER: a
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

92. Which of the following describes the compressibility of liquids?

a. They are highly compressible.

b. They are slightly compressible.

c. They are virtually incompressible.

d. Any of these, depending on the liquid.

ANSWER: b
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

93. Dry ice is called dry ice because it passes directly from the solid state to the gaseous state (sublimes) under normal atmospheric conditions. Which of the following occurs during this transformation?

a. The chemical composition of dry ice changes.

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b. The volume of the sample decreases.
c. The volume of the sample remains the same.
d. The volume of the sample increases.

ANSWER: d
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

94. Which of the following is true of ice, water, and steam?
a. They are three different chemical substances.
b. They are the same substance in different chemical states.
c. They are the same substance in different physical states.
d. They are the same substance in different chemical and physical states.

ANSWER: c
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

95. Mercury is the only metal that is a liquid at room temperature. The density of mercury is 13.6 g/cm^3. What is the mass, in pounds, of 1.00 quart of mercury? [1 liter = 1.057 quart; 1 pound = 453.6 grams]
a. 0.0284 lb
b. 28.4 lb
c. 31.7 lb
d. 35.3 lb

ANSWER: b
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

96. Xenon is a gas found in some automobile headlights. The density of xenon at room temperature and pressure is 5.37 g/L. What is the mass, in pounds, of 1.00 quart of xenon? [1 liter = 1.057 quart; 1 pound = 453.6 grams]
a. 0.0112 lb
b. 0.0125 lb
c. 79.9 lb
d. 89.3 lb

ANSWER: a
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

97. Which of the following is true of the relationship between density expressed in g/mL and specific gravity?
a. They have different numerical values and different units.
b. They have the same numerical value and the same units.
c. They have the same numerical value, but their specific gravity is dimensionless.
d. They have the same units but different numerical values.

ANSWER: c
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: UNDERSTAND

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98. The densities of the coinage metals (copper, silver, and gold) are as follows:
copper = 8.95 g/cm^3
silver = 12.59 g/cm^3
gold = 19.32 g/cm^3
A sample of material is found to weigh 15.12 grams and have a volume of 1.20 cm^3. The sample could be which of the coinage metals?

a. copper
b. silver
c. gold

ANSWER: b
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

99. An unknown substance has a mass of 56.8 g and a volume of 23.4 mL. What is the density of this unknown substance?

a. 0.411 g/mL
b. 2.34 g/mL
c. 2.43 g/mL
d. 2.50 g/mL

ANSWER: c
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

100. Aluminum has a density of 2.70 g/cm^3. What volume is occupied by a block of aluminum that weighs 4.32 kg?

a. 0.000625 cm^3
b. 0.625 cm^3
c. 1.60 cm^3
d. 1.60 L

ANSWER: d
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

101. Titanium has a density of 4.54 g/cm^3. What is the mass of 17.3 cm^3 of titanium?

a. 3.81 g
b. 38.1 g
c. 78.5 g
d. 785 g

ANSWER: c
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

102. Iron has a density of 7.874 g/cm^3. What is the mass of a rectangular block of iron with dimensions of 3.000 cm by 4.000 cm by 5.000 cm?

a. 7.629 g
b. 60.00 g

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c. 94.48 g
d. 472.4 g

ANSWER: d
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

103. Iron has a density of 7.874 g/cm^3. What is the volume of a block of iron that weighs 15.321 g?

a. 0.008289 cm^3
b. 0.5139 cm^3
c. 1.946 cm^3
d. 120.6 cm^3

ANSWER: c
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

104. Which of the following is true about specific gravity of a material?

a. It has units of g/mL.
b. It is defined as the density of the material divided by the density of water.
c. It has units of g/mL and it is defined as the density of the material divided by the density of water.
d. It neither has units of g/mL nor is it defined as the density of the material divided by the density of water.

ANSWER: b
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: UNDERSTAND

105. If specific gravities were defined by reference to oil (density = 0.89 g/mL) rather than water (density = 1.0 g/mL) which of the following would be true?

a. The specific densities of all the materials and substances would be larger than those listed in handbooks.
b. The specific densities of all the materials and substances would be smaller than those listed in handbooks.
c. The specific densities of some objects would be larger and of other objects would be smaller than those listed in handbooks.
d. The specific densities of all the materials and substances listed in handbooks would not change.

ANSWER: a
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: ANALYZE

106. A particular material has a specific gravity of 1.04 at 20°C. As this material is heated from 20°C to 30°C, its volume increases faster than does the volume of water. Which of the following statements is true of the specific gravity of this material as it is heated to 30°C?

a. Its specific gravity decreases.
b. Its specific gravity increases.
c. Its specific gravity remains the same.
d. There is insufficient information to answer the question.

ANSWER: a
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY

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KEYWORDS: BLOOM'S: ANALYZE

107. What is the name of the instrument used to measure specific gravity?
a. densitometer
b. gravimeter
c. hydrometer
d. spectrometer

ANSWER: c
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: REMEMBER

108. Which of the following is the formula used to calculate the kinetic energy of a moving object?
a. $KE. = ½mv$
b. $KE. = ½mv^2$
c. $KE = mv$
d. $KE = mv^2$

ANSWER: b
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

109. Chemical energy is an example of which of the following?
a. kinetic energy
b. mechanical energy
c. potential energy
d. radiant energy

ANSWER: c
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

110. Nuclear energy is an example of which for the following?
a. kinetic energy
b. mechanical energy
c. potential energy
d. radiant energy

ANSWER: c
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

111. Which of the following is **not** a form of kinetic energy?
a. chemical energy
b. electrical energy
c. light energy
d. mechanical energy

ANSWER: a

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TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

112. Which of the following is a form of potential energy?
a. chemical energy
b. nuclear energy
c. both chemical energy and nuclear energy
d. neither chemical energy nor nuclear energy
ANSWER: c
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

113. Which of the following is true as a student slides down a water slide?
a. kinetic energy decreases
b. potential energy increases
c. total energy increases
d. none of the these
ANSWER: d
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

114. Which of the following is true as a student slides down a water slide?
a. kinetic energy increases
b. potential energy decreases
c. total energy remains constant
d. all of these
ANSWER: d
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

115. The law of conservation of energy states which of the following?
a. Energy cannot be converted from one form to another.
b. Kinetic energy is conserved.
c. Potential energy is conserved.
d. none of the these
ANSWER: d
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

116. The law of conservation of energy states which of the following?
a. Kinetic energy is conserved.
b. Potential energy is conserved.
c. The sum of kinetic energy and potential energy is conserved.
d. all of these
ANSWER: c

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TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: REMEMBER

117. Which of the following statements is true about a swinging pendulum?
a. Its kinetic energy is greatest when it is vertical (at the midpoint of its swing).
b. Its potential energy is greatest when it is vertical (at the midpoint of its swing).
c. Its kinetic energy does not change as it swings.
d. Its potential energy does not change as it swings.
ANSWER: a
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

118. Which of the following statements is true about a swinging pendulum?
a. Its kinetic energy is greatest when it is at the extreme (the highest point) of its swing.
b. Its potential energy is greatest when it is at the extreme (the highest point) of its swing.
c. Its kinetic energy does not change as it swings.
d. Its potential energy does not change as it swings.
ANSWER: b
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

119. Which of the following objects has the largest kinetic energy?
a. a 1.00-gram object moving at 1.0 cm/sec
b. a 0.25-gram object moving at 2.0 cm/sec
c. a 16.00-gram object moving at 0.25 cm/sec
d. They all have the same kinetic energy.
ANSWER: d
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

120. Which of the following statements is true regarding forms of energy?
a. Both light and temperature are forms of energy.
b. Neither light nor temperature is a form of energy.
c. Light is a form of energy but temperature is not.
d. Temperature is a form of energy but light is not.
ANSWER: c
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

121. Which of the following is the smallest unit of length among the given units?
a. centimeter
b. nanometer
c. micrometer
d. picometer
ANSWER: d

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TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: UNDERSTAND

122. Which of the following is the largest unit of mass among the given units?
a. kilogram
b. megagram
c. gigagram
d. decigram
ANSWER: c
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: UNDERSTAND

123. Which statement is true of the compressibility of solids, liquids, and gases?
a. Liquids are more compressible than gases.
b. Solids are more compressible than gases.
c. Liquids are more compressible than solids.
d. Solids are more compressible than liquids.
ANSWER: c
TOPICS: 1.6 - STATES OF MATTER
KEYWORDS: BLOOM'S: UNDERSTAND

124. Which of these is **not** a chemical change?
a. the cutting of plywood
b. the digestion of food
c. the baking of a chocolate cake
d. the explosion of fireworks
ANSWER: a
TOPICS: 1.1 - CHEMISTRY AND THE STUDY OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

125. What happens when a spring is kept in the compressed state for some time?
a. The potential energy of the spring increases.
b. The kinetic energy of the spring increases.
c. The potential energy of the spring remains constant.
d. The kinetic energy of the spring remains constant.
ANSWER: a
TOPICS: 1.8 - DESCRIBING THE VARIOUS FORMS OF ENERGY
KEYWORDS: BLOOM'S: UNDERSTAND

126. Which of these is **not** an example of matter?
a. the feathers of a bird
b. the light from a torch
c. a muslin cloth
d. a microscopic lens
ANSWER: b

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TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

127. How many yards make a kilometer? [1 inch = 2.54 cm]
a. 994 yards
b. 1,094 yards
c. 1,294 yards
d. 1,394 yards
ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

128. Scientists consider 298 K to be room temperature. What is this temperature on the Fahrenheit scale?
a. 87.73°F
b. 362.73°F
c. 76.73°F
d. 349.73°F
ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

129. How many kilometers (km) are there is 1 megameter (Mm)?
a. 1×10^{-2}
b. 1×10^{-3}
c. 1×10^{3}
d. 1×10^{2}
ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: REMEMBER

130. How many kilojoules (kJ) are there in 1 joule (J)?
a. 1×10^{-6}
b. 1×10^{-3}
c. 1×10^{3}
d. 1×10^{6}
ANSWER: b
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: REMEMBER

131. The boiling point of liquid bromine is 132.44°F. What is this temperature on the Celsius scale?
a. 55.8°C
b. 65.2°C
c. 60°C

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d. –34°C

ANSWER: a
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: APPLY

132. Which of the following is **not** a part of the scientific method?
a. testing a theory
b. validating a hypothesis
c. writing a pop-science book
d. formulating a theory

ANSWER: c
TOPICS: 1.2 - THE SCIENTIFIC METHOD
KEYWORDS: BLOOM'S: UNDERSTAND

133. Which of the following is a characteristic feature of matter?
a. Matter has indefinite mass and definite volume.
b. Matter has definite mass but does not occupy space.
c. Matter has definite mass and occupies space.
d. Matter has indefinite mass and indefinite volume.

ANSWER: c
TOPICS: 1.1 - CHEMISTRY AND STUDY OF MATTER
KEYWORDS: BLOOM'S: REMEMBER

134. A jeweler offers a pure gold coin of 2 g to a customer. What is the volume of the coin? (Take the density of gold to be 19.3 g/cm^3.)
a. 0.404 cm^3
b. 0.104 cm^3
c. 9.65 cm^3
d. 38.6 cm^3

ANSWER: b
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

135. Consider the following piece of equipment found in a chemistry laboratory. This equipment could be used to measure:

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a. mass
b. volume
c. length
d. temperature

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

136. In determining the density of a liquid, the following measurement was made. How many significant figures are shown in this measurement?



a. 5
b. 4
c. 3
d. none of these

ANSWER: a
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

137. The following measurement was made in determining the density of the liquid in the beaker. The volume of liquid in the beaker is 1.800 L. What is the density of this liquid?

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a. 0.8922 g/mL
b. 1.118 g/mL
c. 0.89 g/mL
d. 1.1 g/mL
e. 8.922×10^{2} g/mL
f. 1.118×10^{-3} g/mL

ANSWER: a
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

138. If one were to measure the distance from the photographer taking this picture to the ocean shown in the background, which of the following units would be the most appropriate?



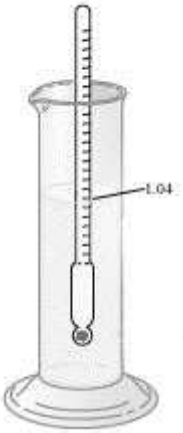
a. mm
b. km
c. cm
d. nm

ANSWER: b
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

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139. Consider the urinometer shown used to make a measurement at 25 °C. What is the density of the liquid shown at the same temperature?



a. 1.04
b. 1.04 g/mL
c. 0.962
d. 0.962 g/mL
e. The density cannot be determined from the given data.

ANSWER: b
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

140. Which of the following would be the correct conversion factor to convert 25.0 mL to L?

a. $\frac{1000\ \text{mL}}{1\ \text{L}}$
b. $\frac{1000\ \text{L}}{1\ \text{mL}}$
c. $\frac{1\ \text{L}}{1000\ \text{mL}}$
d. $\frac{1000\ \text{mL}}{1000\ \text{L}}$

ANSWER: c
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: UNDERSTAND

141. Which of the following conversion factors would **not** be needed in order to convert 75 mi/hr to m/s?

a. $\frac{3600\ \text{s}}{1\ \text{hr}}$
b. $\frac{1000\ \text{m}}{1\ \text{km}}$

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c. $\frac{1.609\ \text{km}}{1\ \text{mi}}$

d. All these conversion factors would be needed.

ANSWER: d
TOPICS: 1.5 - UNIT CONVERSIONS
KEYWORDS: BLOOM'S: UNDERSTAND

142. Consider the separatory funnel shown below; it contains two liquids. Water is placed in the funnel along with one of the following liquids: diethyl ether, mineral oil, or dichloromethane. The funnel is then opened, and the bottom layer is drained into a beaker. For which combination would the water end up in the beaker? Density values are given in parentheses.



a. diethyl ether (0.713 g/mL)
b. mineral oil (0.845 g/mL)
c. dichloromethane (1.33 g/mL)
d. both a and b

ANSWER: d
TOPICS: 1.7 - DENSITY AND SPECIFIC GRAVITY
KEYWORDS: BLOOM'S: APPLY

143. Consider the following image. Which of the following would be appropriate units to use when measuring with this piece of equipment?



a. L
b. mL
c. cm^3
d. either b or c

ANSWER: d
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

144. Which of the following would be the most appropriate unit to measure the diameter of an ant's leg?

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a. Gm
b. m
c. cm
d. μm

ANSWER: d
TOPICS: 1.4 - MAKING MEASUREMENTS
KEYWORDS: BLOOM'S: APPLY

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