Ch. 3 Practice Questions

1) A solid form of matter in which there is long range repeating order is called _____.
   A) crystalline
   B) fixed
   C) amorphous
   D) rigid
   E) none of the above

2) Which among the following statements is FALSE?
   A) A solid has a definite shape and a definite volume.
   B) Both solids and liquids are incompressible while gases are compressible.
   C) A liquid has a definite volume; but it has no definite shape.
   D) A gas has neither definite volume nor definite shape.
   E) none of the above

3) Which of the following is an example of a crystalline solid that shows an arrangement of long–range, repeating order?
   A) rubber
   B) salt
   C) plastic
   D) glass
   E) none of the above

4) Which of the following items is a pure substance?
   A) seawater
   B) ice
   C) air
   D) brass
   E) none of the above

5) How would you classify raisin bran?
   A) pure substance–compound
   B) mixture–heterogeneous
   C) pure substance–element
   D) mixture–homogeneous
   E) none of the above

6) Physical properties are:
   A) those that a substance displays only through changing its composition.
   B) those that cause atoms and molecules to change.
   C) identical for all solid matter.
   D) those that a substance displays without changing its composition.
   E) none of the above

7) When methane is burned with oxygen the products are carbon dioxide and water. If you produce 36 grams of water and 44 grams of carbon dioxide from 16 grams of methane, how many grams of oxygen were needed for the reaction?
   A) 64
   B) 32
   C) 96
   D) 80
   E) none of the above

8) Which type of energy is associated with motion?
   A) kinetic
   B) chemical
   C) electrical
   D) potential
   E) none of the above

9) Which type of energy is associated with position?
   A) chemical
   B) kinetic
   C) potential
   D) electrical
   E) none of the above

10) How many kilojoules are there in 95.0 Calories?
   1 cal = 4.18 J (remember the distinction between cal and Cal)
   A) 397
   B) 2.27×10^{7}
   C) 3.97×10^{-4}
   D) 22.7
   E) none of the above

11) If a particular process is endothermic, the reverse process must be a (an):
   A) isothermal process.
   B) chemical change.
   C) endothermic process.
   D) exothermic process.
   E) none of the above

12) Which of the following is NOT true?
   A) The Kelvin temperature scale avoids use of negative numbers.
   B) The degree "symbol" is not used with the Kelvin scale.
   C) Water boils at the same temperature value on both the Kelvin and Celsius scales.
   D) A kelvin degree is the same size as a Celsius degree.
   E) none of the above

13) What is the value of 27°C on the Kelvin temperature scale?
A) 246
B) 273
C) 81
D) 300
E) none of the above

14) How much heat (kJ) is needed to raise the temperature of 100.0 grams of water from 25.0°C to 50.0°C?
A) 1.05
B) 10450
C) 10.5
D) 0.598
E) none of the above

15) A 15.0 gram lead ball at 25.0°C was heated with 40.5 joules of heat. Given the specific heat of lead is 0.128 J/g·°C, what is the final temperature of the lead?
A) 77.8°C
B) 0.844°C
C) 21.1°C
D) 46.1°C
E) none of the above

16) From the following list of substances and heat capacities, choose the one that will have the lowest temperature after absorbing 100.0 kJ of heat. Assume identical masses of each substance start at the same initial temperature.
A) copper–0.385 J/g·°C
B) water–4.18 J/g·°C
C) lead–0.128 J/g·°C
D) ethanol–2.42 J/g·°C
E) not enough information

17) When 49.5 J of heat was transferred to 7.3 g iron at 22°C, the temperature of iron increases to 37°C. What is the specific heat of iron in J/g·°C?
A) 24
B) 4.5
C) 0.45
D) 2.2
E) none of the above

Answer Key
Testname: PRACTICEQ_CH03

1) A
2) E
3) B
4) B
5) B
6) D
7) A
8) A
9) C
10) A
11) D
12) C
13) D
14) C
15) D
16) B
17) C