Objective 3

Now It's Your Turn

After you answer the practice questions, you can check your answers to see how you did. If you chose a wrong answer to a question, carefully read the answer explanation to find out why your answer is incorrect. Then read the explanation for the correct answer.

Question 21

Which lab procedure described below would provide information about the chemical properties of a clear liquid substance?

A Cooling it to find its freezing temperature

B Observing the rate at which it evaporates

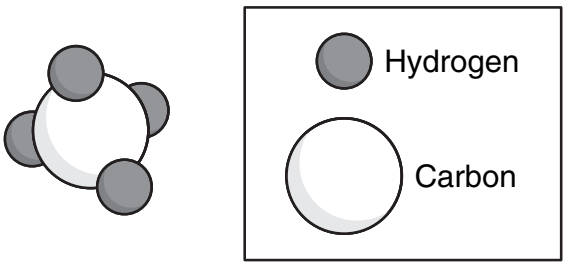
C Comparing its density to the density of water

D Adding an acid to see whether a gas is produced

Answer Key: page 143

Question 22

Model of Methane Molecule



The methane molecule shown above contains —

A five elements

B two elements

C two compounds

D one atom

Answer Key: page 143

Question 23

$4Fe$	+	$3O_2$	$\longrightarrow$	$2Fe_2O_3$
iron		oxygen		rust

Which statement below best describes the process shown in the equation above?

A Iron is broken down into oxygen and rust.

B Iron is combined with oxygen to form rust.

C Rust is broken down into iron and oxygen.

D Rust is combined with oxygen to form iron.

Answer Key: page 143

Question 24

Temperature Change of Liquid Samples

Sample #	Mass (g)	Starting Temperature (°C)	Ending Temperature (°C)
1	200	21	69
2	200	20	66
3	200	22	62
4	200	20	64

Four liquids are heated on the same hot plate at the same temperature setting for ten minutes. The temperature change of each sample is recorded in the table above. Which sample has the greatest specific heat?

A 1

B 2

C 3

D 4

Answer Key: page 143

Question 25

Procedure

- **Place a thermometer and a 100 g sample of a different solid into each of 4 containers.**
- **Record the temperature of the dry solid.**
- **Add 100 mL of vinegar.**
- **Record observations of each mixture in the data table below.**

Data Table

Solid #	Observations
1	Some of the solid dissolves. No temperature change.
2	All of the solid dissolves and gas bubbles out of the clear liquid. Temperature decreases slightly.
3	All the solid dissolves and mixture is clear. No temperature change.
4	None of the solid dissolves. No temperature change.

Based on these observations, which solid most likely reacted chemically when mixed with vinegar?

A 1

B 2

C 3

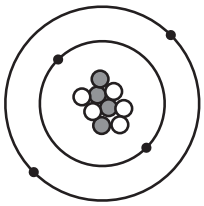
D 4

Answer Key: page 143

Question 26

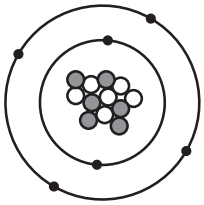
According to the periodic table, which of the following models best represents an atom of the element carbon (C)?

A



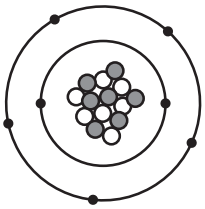
Proton
Neutron
Electron

B



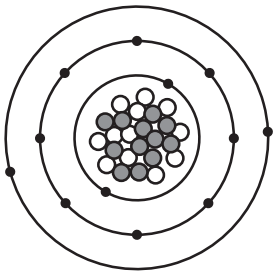
Proton
Neutron
Electron

C



Proton
Neutron
Electron

D



Proton
Neutron
Electron

Answer Key: page 143

Question 27

If an atom has an atomic mass of 101 and an atomic number of 44, how many neutrons would it have?

A 44

B 57

C 101

D 145

Answer Key: page 144

Question 28

A teacher mixes two clear liquids in a beaker. White solid particles form in the beaker and settle to the bottom. If a chemical change took place in the beaker, which of the following best describes the white solid particles?

A An atom not present in the original liquids

B An element not present in the original liquids

C A solid dissolved in one of the two original liquids

D A substance with different properties than the original liquids

Answer Key: page 144

Question 29

Based on the periodic table, which of the following elements has properties most like neon's?

A Hydrogen (H)

B Fluorine (F)

C Krypton (Kr)

D Sodium (Na)

Answer Key: page 144

Question 30

$$C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O$$

During cell respiration, sugar ($C_6H_{12}O_6$) reacts to form carbon dioxide (CO_2) and water (H_2O). Which of the following best explains what happens during cell respiration?

A Single atoms are formed into different elements.

B Atoms are rearranged into different compounds.

C A molecule is broken down into its pure elements.

D Two elements are formed into one compound.

Answer Key: page 144