

Name _____

Date _____

Use with textbook pages 42–47.

Elements

| Match the Element on the left with the corresponding Symbol on the right. Each Symbol may be used only once. | |
|--|--------------|
| Element | Symbol |
| 1. _____ calcium | A. C |
| 2. _____ carbon | B. Ca |
| 3. _____ chlorine | C. Ch |
| 4. _____ potassium | D. Cl |
| 5. _____ phosphorus | E. K |
| 6. _____ sulphur | F. Na |
| 7. _____ sodium | G. P |
| | H. Ph |
| | I. Po |
| | J. S |
| | K. So |
| | L. Su |

Circle the letter of the best answer.

8. Which of the following are rules for writing a chemical symbol?

| | |
|------|---|
| I. | first letter must be capitalized |
| II. | symbol is made of either one or two letters |
| III. | second letter, if present, must be lower case |

- A.** I and II only
- B.** I and III only
- C.** II and III only
- D.** I, II, and III

9. What is the chemical symbol for helium?

- A.** H
- B.** He
- C.** Hl
- D.** Hi

10. Which of the following correctly matches the name of the element with the chemical symbol?

- A.** magnesium=Mg
- B.** aluminum=A
- C.** oxygen=Ox
- D.** nitrogen=Ni

11. Which of the following is a gas at room temperature?

- A.** calcium
- B.** carbon
- C.** chlorine
- D.** copper

12. Which of the following metals is a liquid at room temperature?

- A.** silver
- B.** sodium
- C.** mercury
- D.** manganese

13. Which of the following are physical properties of metals?

| | |
|------|---|
| I. | ductile |
| II. | malleable |
| III. | good conductors of heat and electricity |

- A.** I and II only
- B.** I and III only
- C.** II and III only
- D.** I, II, and III

Use with textbook pages 52–57.

The periodic table and chemical properties

Match each Term on the left with the best Descriptor on the right. Each Descriptor may be used only once.

| Term | Descriptor |
|--------------------------------|--|
| 1. _____ halogens | A. most reactive metals |
| 2. _____ noble gases | B. most reactive non-metals |
| 3. _____ alkali metals | C. have properties of both metals and non-metals |
| 4. _____ alkaline earth metals | D. most unreactive elements |
| | E. includes beryllium and magnesium |

Circle the letter of the best answer.

5. What is the name of a horizontal row in the periodic table?

- A. column
- B. family
- C. period
- D. group

6. Which of the following are metalloids?

| | |
|------|---------|
| I. | silicon |
| II. | boron |
| III. | neon |

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II, and III

Use the following diagram to answer questions 7 and 8.

| | |
|-----------|----|
| 30 | 2+ |
| Zn | |
| Zinc | |
| 65.4 | |

7. What does the “30” refer to?

- A. ion charge
- B. average atomic mass
- C. atomic number
- D. family number

8. What does the “2+” refer to?

- A. ion charge
- B. average atomic mass
- C. atomic number
- D. family number

9. To which of the following groups does oxygen belong?

- A. gas
- B. metal
- C. metalloid
- D. non-metal

10. Which of the following is the same as the atomic number of an element?

- A. number of protons
- B. number of neutrons
- C. number of electrons
- D. number of ion charges

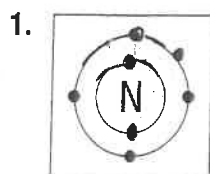
Name _____

Date _____

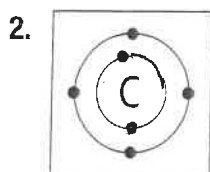
Use with textbook pages 64–67.

Analyzing Bohr model diagrams

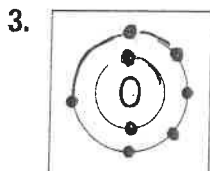
Fill in the blanks beside each Bohr model diagram. The first one has been partially completed to help guide you.



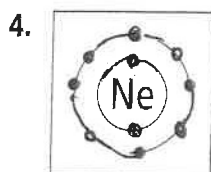
- (a) number of protons 7
 (b) number of shells _____
 (c) number of electrons _____
 (d) number of valence electrons _____
 (e) Bohr model of a nitrogen atom



- (a) number of protons _____
 (b) number of shells _____
 (c) number of electrons _____
 (d) number of valence electrons _____
 (e) Bohr model of a _____



- (a) number of protons _____
 (b) number of shells _____
 (c) number of electrons _____
 (d) number of valence electrons _____
 (e) Bohr model of an _____



- (a) number of protons _____
 (b) number of shells _____
 (c) number of electrons _____
 (d) number of valence electrons _____
 (e) Bohr model of a _____

5. The four elements above are in the same period. What do you notice about the number of shells for elements belonging to the same period?

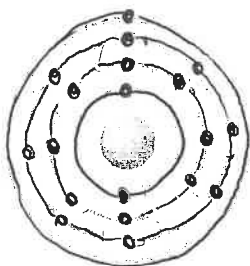
Name _____

Date _____

Use with textbook pages 64–67.

The periodic table and atomic theory

Use the following Bohr model to answer questions 1 to 6.



Match the Term on the left with the corresponding Number on the right. Each Number may be used more than once. Refer to the diagram above.

| Term | Number |
|---|--------|
| 1. _____ number of shells | A. 0 |
| 2. _____ number of protons | B. 1 |
| 3. _____ total number of electrons | C. 2 |
| 4. _____ number of valence electrons | D. 3 |
| 5. _____ number of electron(s) it has to lose to become stable | E. 4 |
| 6. _____ number of shells holding the maximum number of electrons | F. 19 |
| | G. 20 |

Circle the letter of the best answer.

7. What is the maximum number of electrons that the first electron shell can hold?

- A. 1
- B. 2
- C. 4
- D. 8

Use the periodic table on page 202 to answer questions 8 to 12.

8. How many electrons are in the outermost shell of a sulphur (S) atom?

- A. 1
- B. 2
- C. 6
- D. 7

9. How many electrons are in the outermost shell of a fluorine (F) ion?

- A. 1
- B. 2
- C. 7
- D. 8

10. How many shells are there in the Bohr model of an aluminum (Al) atom?

- A. 1
- B. 2
- C. 3
- D. 4

11. Which of the following represents the Bohr model electron arrangement of a chlorine (Cl) atom?

- A. 2, 15
- B. 2, 2, 13
- C. 2, 8, 7
- D. 2, 8, 8

12. What do a beryllium (Be) ion and a neon (Ne) atom have in common?

- A. They have full outer shells.
- B. They have the same number of electrons.
- C. They have the same number of electron shells.
- D. None of the above