

Name : _____ Date : _____

Electron Configuration

1. Identify the elements using the following electron configurations and your periodic table.

i. $1s^2 2s^2 2p^6 3s^2 3p^5$ _____ ii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$ _____

iii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^1$ _____

2. Use the following clue to identify the element.

i. This element has a 3p sublevel that contains three electrons. _____

ii. This element has a 4s sublevel with two electrons for its outermost electrons. _____

iii. This element has one electron in its 3d sublevel. _____

iv. This element has five electrons in its 5p sublevel. _____

v. This element has a completely filled 3p sublevel for its outermost electrons. _____

vi. This element has two electrons in its 6p sublevel. _____

3. Choose the correct answer.

i. Which electron configuration represents an atom in an excited state?

a. $1s^2 2s^2 2p^6 3p^1$ b. $1s^2 2s^2 2p^6 3s^2 3p^2$ c. $1s^2 2s^2 2p^6 3s^2 3p^1$ d. $1s^2 2s^2 2p^6 3s^2$

Ans. _____

ii. All the elements in Period 3 have two electrons in total in the

a. 2s sublevel b. 2p sublevel c. 3s sublevel d. 3p sublevel

Ans. _____

iii. Which atom in the ground state has three unpaired electrons in its outermost principal energy level?

a. Li b. N c. B d. Ne

Ans. _____

iv. What is the total number of electrons in an atom with the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^3$?

a. 6 b. 3 c. 2 d. 5

Ans. _____

v. Which element has completely filled the third principal energy level?

a. Fe b. Ar c. N d. Zn

Ans. _____

Name : _____ Date : _____

Electron Configuration

Answers

1. Identify the elements using the following electron configurations and your periodic table.

i. $1s^2 2s^2 2p^6 3s^2 3p^5$ Chlorine ii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$ Calcium

iii. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^1$ Gallium

2. Use the following clue to identify the element.

i. This element has a 3p sublevel that contains three electrons. Phosphorous

ii. This element has a 4s sublevel with two electrons for its outermost electrons. Calcium

iii. This element has one electron in its 3d sublevel. Scandium

iv. This element has five electrons in its 5p sublevel. Iodine

v. This element has a completely filled 3p sublevel for its outermost electrons. Argon

vi. This element has two electrons in its 6p sublevel. Lead

3. Choose the correct answer.

i. Which electron configuration represents an atom in an excited state?

a. $1s^2 2s^2 2p^6 3p^1$ b. $1s^2 2s^2 2p^6 3s^2 3p^2$ c. $1s^2 2s^2 2p^6 3s^2 3p^1$ d. $1s^2 2s^2 2p^6 3s^2$

Ans. a

ii. All the elements in Period 3 have two electrons in total in the

a. 2s sublevel b. 2p sublevel c. 3s sublevel d. 3p sublevel

Ans. a

iii. Which atom in the ground state has three unpaired electrons in its outermost principal energy level?

a. Li b. N c. B d. Ne

Ans. b

iv. What is the total number of electrons in an atom with the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^3$?

a. 6 b. 3 c. 2 d. 5

Ans. d

v. Which element has completely filled the third principal energy level?

a. Fe b. Ar c. N d. Zn

Ans. b