



Bibb County School District

Test Booklet:

Atoms, Ions, & Isotopes Post Assessment

Name: _____

Date: _____

Draft

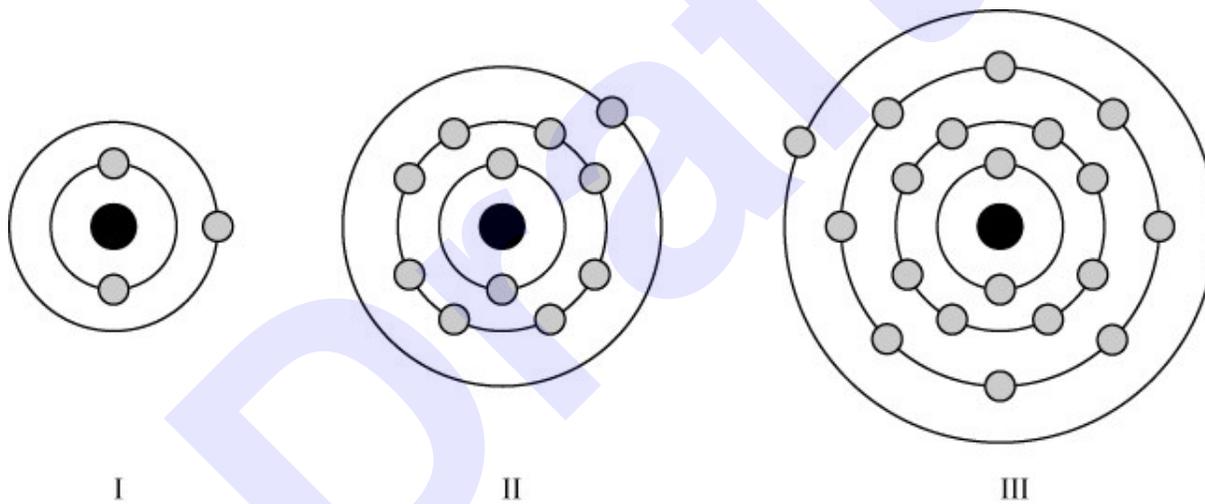


Directions: A box from the periodic table for the element carbon (C) is shown below. Use the information in the box to answer any questions that follow.

6
C
12.011
Carbon

1. The number of electrons in a neutral carbon (C) atom
- A. can be determined by adding the atomic number to the atomic mass.
 - B. can be determined by dividing the atomic mass by the atomic number.
 - C. is equal to the number of protons in carbon (C).
 - D. is equal to the mass number of carbon (C).

Directions: Use the diagram of the three atoms below to answer any questions that follow.



2. Which of the atoms is sodium (Na)?
- A. I, only
 - B. II, only
 - C. I and III
 - D. II and III

Directions: Use the box below from the periodic table to answer any questions that follow.

11	← 1
Na	← 2
22.989	← 3

3. What does 3 represent?

- A. chemical symbol
- B. oxidation number
- C. atomic number
- D. atomic mass

4. What does 1 represent?

- A. chemical symbol
- B. oxidation number
- C. atomic number
- D. atomic mass

5. Which of the following is true of an atom?

- A. The negative electrons are in motion around the positive nucleus to which they are attracted.
- B. The negative neutrons are in motion around the neutral nucleus to which they are attracted.
- C. The neutral electrons are in motion around the positive protons to which they are attracted.
- D. The positive protons are in motion around the negative neutrons to which they are attracted.

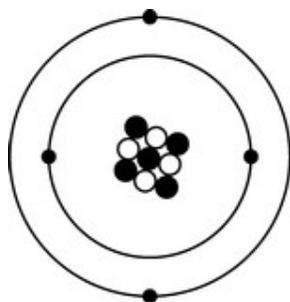
6. How do neutrons affect the charge of an atom?

- A. An atom's charge is not affected because neutrons have a negative charge.
- B. An atom's charge is not affected because neutrons have a neutral charge.
- C. An atom with fewer neutrons than electrons will have a positive charge.
- D. An atom with more neutrons than electrons will have a positive charge.

7. Which describes an atom with a negative net charge?

- A. It contains more electrons than protons.
- B. It contains more protons than electrons.
- C. It contains more neutrons than protons.
- D. It contains more neutrons than electrons.

8. The diagram shows a neutral atom of an element from the periodic table.



This atom is **mostly likely**

- A. a potassium isotope.
- B. a beryllium isotope.
- C. a fluorine isotope.
- D. a boron isotope.

9. An atom is an isotope of an element if it has

- A. the same number of neutrons and a different number of protons.
- B. the same number of neutrons and a different number of electrons.
- C. the same number of electrons and a different number of protons.
- D. the same number of protons and a different number of neutrons.

10. An atom of an element contains 6 protons, 6 neutrons, and 6 electrons. An atom that is a different isotope of this element would contain

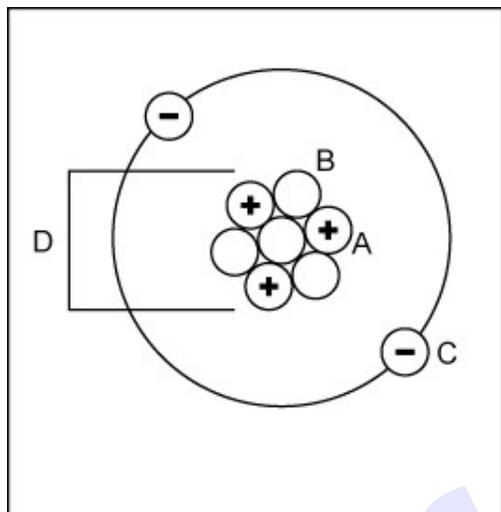
- A. 6 protons, 7 neutrons, and 6 electrons.
- B. 6 protons, 6 neutrons, and 7 electrons.
- C. 7 protons, 6 neutrons, and 6 electrons.
- D. 7 protons, 7 neutrons, and 7 electrons.

11. What are atomic numbers on the periodic table used to determine?
- A. the number of valence electrons
 - B. the number of core electrons
 - C. the number of protons
 - D. the number of neutrons
12. What is the charge of an electron?
- A. -2
 - B. -1
 - C. 0
 - D. +1
13. What is the atomic number of a neutral atom that contains 5 electrons and has an atomic mass of 11 amu?
- A. 55
 - B. 16
 - C. 6
 - D. 5
14. A neutral atom of fluorine (F) has an atomic number of 9 and an atomic mass of 19 amu. What is the number of protons, electrons, and neutrons in an atom of fluorine?
- A. 9 protons, 9 electrons, and 9 neutrons
 - B. 9 protons, 10 electrons, and 10 neutrons
 - C. 9 protons, 9 electrons, and 10 neutrons
 - D. 9 protons, 10 electrons, and 9 neutrons
15. Two atoms each contain 6 protons, but one has 6 neutrons and the other has 8 neutrons. What are these atoms called?
- A. binaries
 - B. ions
 - C. isotopes
 - D. radicals

16. Why is an atom neutral?

- A. It has an equal number of neutrons and quarks.
- B. It has an equal number of neutrons and electrons.
- C. It has an equal number of protons and electrons.
- D. It has an equal number of protons and quarks.

17. What is the net charge of the structure in the figure below?



- A. 1-
- B. 1+
- C. 2+
- D. 2-

18. An aluminum isotope consists of 13 protons, 13 electrons and 14 neutrons. What is its mass number?

- A. 13
- B. 14
- C. 27
- D. 40

19. What is the mass number of the atom ${}_{36}^{86}\text{Kr}$?

- A. 36
- B. 50
- C. 86
- D. 122

20. What is the charge of an ion that has 8 protons, 9 neutrons, and 10 electrons?

- A. 1+
- B. 2+
- C. 1-
- D. 2-

Draft