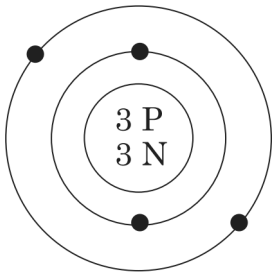
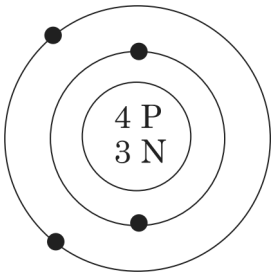
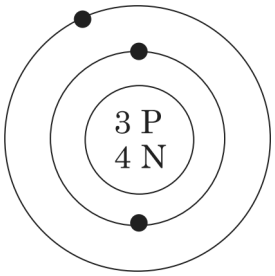
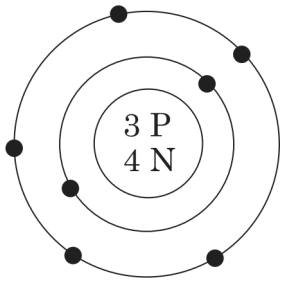
Ch 3: Level 5 Questions

1. Which drawing *best* represents an atom of lithium?

A. 

B. 

C. 

D. 

2. Which of the following describes a particle that contains 36 electrons, 49 neutrons, and 38 protons?

A. an ion with a charge of 2−
B. an ion with a charge of 2+
C. an atom with a mass of 38 amu
D. an atom with a mass of 49 amu

3. Chlorine has two naturally occurring isotopes, chlorine-35 and chlorine-37. The atomic mass of naturally occurring chlorine is 35.45. Which statement is correct?

A. Chlorine-35 is more abundant.
B. Chlorine-37 is more abundant.
C. Chlorine-36 is more abundant.
D. Chlorine-35 and chlorine-37 are equally abundant.

4. What is the total number of electrons in a Cr^{3+} ion?

A. 18
B. 21
C. 24
D. 27

5. What causes an object to have a positive charge?

A. Protons are removed.
B. Protons are added.
C. Electrons are removed.
D. Electrons are added.

6. Which elements have the same number of neutrons?

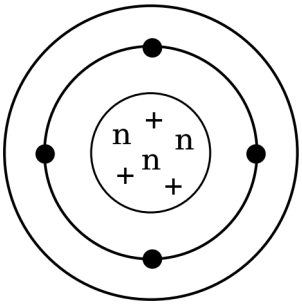
A. $^{10}_{5}B$ and $^{12}_{6}C$
B. $^{55}_{25}Mn$ and $^{56}_{26}Fe$
C. $^{108}_{47}Ag$ and $^{112}_{48}Cd$
D. $^{197}_{79}Au$ and $^{201}_{80}Hg$

7. Isotopes of an atom could be detected based on which of the following characteristics?

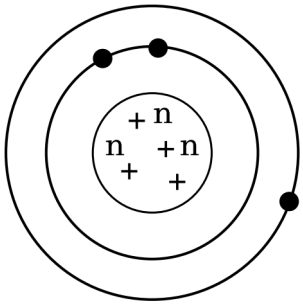
A. atomic radius
B. nuclear charge
C. nuclear mass
D. number of electrons

8. Which diagram represents an electrically neutral atom?

A.



B.



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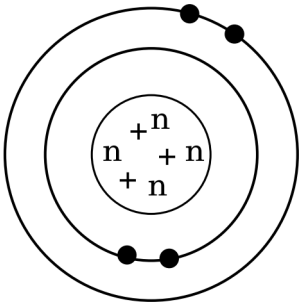
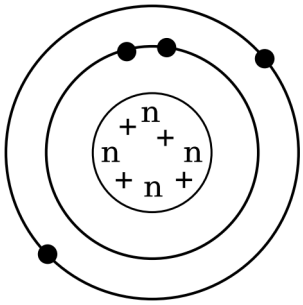


D.



9. A Ca^{2+} ion *differs* from a Ca^{0} atom in that the Ca^{2+} ion has

A. more protons B. fewer protons C. more electrons D. fewer electrons

10. Wanda learned that deuterium (H-2), an isotope of hydrogen, has one proton and one neutron, and that protium (H-1) has one proton and no neutrons. She concluded that deuterium and protium are two different elements.

Is this a valid conclusion?

A. No; the number of neutrons changes the atomic number and in the process creates new elements.

B. Yes; the number of neutrons changes the atomic mass and in the process creates new elements.

C. No; the number of neutrons does not change the identity of the element; it merely creates heavier atoms of the same element.

D. Yes; the number of neutrons does not change the chemical properties; it merely creates a new element.

11. Which statement concerning elements is true?

A. Different elements must have different numbers of isotopes.

B. Different elements must have different numbers of neutrons.

C. All atoms of a given element must have the same mass number.

D. All atoms of a given element must have the same atomic number.

12. Which ion contains the same total number of electrons as Cl^{-}?

A. S^{2-} B. Br^{-} C. Mg^{2+} D. Na^{+}

Ch 3: Level 5 Questions 10/08/2013

1.
Answer: C

2.
Answer: B

3.
Answer: A

4.
Answer: B

5.
Answer: C

6.
Answer: B

7.
Answer: C

8.
Answer: D

9.
Answer: D

10.
Answer: C

11.
Answer: D

12.
Answer: A