Ch. 4 Practice Questions

1) Which statement below accurately describes the contributions of Democritus?
   A) proposed the modern Atomic Theory
   B) created the modern periodic table
   C) discovered the existence of electrons
   D) ancient Greek philosopher who proposed that matter was not continuous
   E) none of the above

2) Which statement below accurately describes the contributions of Thomson?
   A) created the modern periodic table
   B) discovered the existence of electrons
   C) proposed the modern Atomic Theory
   D) ancient Greek philosopher who proposed that matter was continuous
   E) none of the above

3) Which statement reflects the results of Rutherford's gold foil experiments?
   A) Almost all of the alpha particles passed directly through the foil.
   B) Almost all of the alpha particles were deflected back in the direction from which they came.
   C) Almost all of the alpha particles sputtered gold atoms off of the surface of the foil.
   D) Almost all of the alpha particles were deflected while passing through the foil.
   E) none of the above

4) The atomic mass unit is defined as:
   A) 1/12 the mass of a carbon atom containing six protons and six neutrons.
   B) 1/14 the mass of a nitrogen atom containing 7 protons and 7 neutrons.
   C) the mass of the hydrogen atom containing only one proton.
   D) the mass of electrons found in a carbon atom containing six protons and neutrons.
   E) none of the above

5) Which of the following subatomic particles has a mass of 1.67×10^{-27} kg?
   A) neutrons only
   B) protons only
   C) electrons only
   D) protons and neutrons
   E) none of the above

6) Which of the following elements has only 12 protons?
   A) Zn
   B) C
   C) Mg
   D) O
   E) none of the above

7) Which of the following is NOT a correct name, symbol combination?
   A) iron, I
   B) beryllium, Be
   C) silicon, Si
   D) magnesium, Mg
   E) manganese, Mn

8) Which of the following is NOT a correct name, symbol combination?
A) manganese, Mg
B) iron, Fe
C) silicon, Si
D) phosphorus, P
E) beryllium, Be

9) Which one of the following is a main-group element?
A) Cu
B) Ce
C) Cs
D) Co
E) none of the above

10) Group 7A elements are also called:
A) noble gases.
B) halogens.
C) alkaline earth metals.
D) alkali metals.
E) none of the above

11) All of the following statements about different elements are true EXCEPT:
A) Barium is an alkaline earth metal.
B) Iodine is a halogen.
C) Manganese is a transition metal.
D) Krypton is one of the noble gases.
E) Sulfur is considered a metalloid.

12) Ions are formed when atoms:
A) gain or lose electrons.
B) gain or lose protons.
C) gain or lose neutrons.
D) Each of these results in ion formation.
E) None of these results in ion formation.

13) Which of the following statements about ions is INCORRECT?
A) Cations are positive ions and anions are negative ions.
B) Cations are formed when an atom loses electrons.
C) Cations always have the same number of protons as electrons.
D) Anions are formed when an atom gains electrons.
E) All statements are correct.

14) What is the correct formula for a potassium ion with 18 electrons?
A) K^+
B) P^-
C) P^+
D) K^-
E) none of the above

15) How many protons and electrons are present in O^{2-}?

A) 16 protons and 8 electrons
B) 8 protons and 10 electrons
C) 10 protons and 8 electrons
D) 8 protons and 8 electrons
E) none of the above

16) Isotopes are:

A) atoms of the same element that have different number of protons.
B) atoms of the same element that have different number of neutrons.
C) atoms of the same element that have the same number of neutrons.
D) atoms of the same element that have different number of electrons.
E) none of the above

17) How many neutrons are present in Ne–22?

A) 10
B) 22
C) 32
D) 12
E) none of the above

18) What is the mass number of the hydrogen isotope that contains 2 neutrons?

A) 1
B) 2
C) 3
D) 4
E) none of the above

19) An atom that has the same number of neutrons as $^{138}_{56}\text{Ba}$ is:

A) $^{137}_{57}\text{La}$
B) $^{136}_{54}\text{Xe}$
C) $^{138}_{55}\text{Cs}$
D) $^{136}_{56}\text{Ba}$
E) none of the above

20) A fictional element has two isotopes, each making up 50% of the population. Isotope 1 has a mass of 80.0 amu, Isotope 2 has a mass of 85.0 amu. Calculate the atomic mass of the fictional element.

A) 42.5 amu
B) 82.5 amu
C) 40 amu
D) 165 amu
E) none of the above

Answer Key
Testname: PRACTICEQ_CH04

1) D
2) B
3) A
4) A
5) D
6) C
7) A
8) A
9) C
10) B
11) E
12) A
13) C
14) A
15) B
16) B
17) D
18) C
19) B
20) B