

## HW 1.4

Started: Aug 19 at 3:28pm

### Quiz Instructions

[← Return to "To Do List"](#)

#### Question 1

1 pts

Click on each of the following statements that are **true**.

- ☐ Cathode rays are rays of light, thus they have no mass.
- ☐ J.J. Thomson is credited with the discovery of the electron.
- ☐ Cathode rays are positively charged.
- ☐ Cathode rays can be repelled by a negatively charged metal plate.
- ☐ Phosphor is a material that glows when struck by cathode rays.

#### Question 2

1 pts

Decide which of the following is an appropriate conclusion based on the observation below:

"Cathode rays are attracted to a positively charged metal plate."

- ☐ Cathode rays have no charge.
- ☐ Cathode rays are positively charged.
- ☐ Cathode rays are negatively charged.

#### Question 3

1 pts

Decide which of the following is an appropriate conclusion based on the observation below:

"Electrons have a negative charge."

- ☐ Atoms must also contain positive subatomic material.
- ☐ Atoms must be positively charged.
- ☐ Atoms must be negatively charged.

#### Question 4

1 pts

Decide which of the following statements is an appropriate conclusion based on the observation below:

"Alpha particles fired at a thin gold foil are occasionally scattered back in the direction that they came from."

- ☐ Atoms contain neutrons.
- ☐ The positive material in an atom is spread throughout like the batter in pudding.
- ☐ The positive charge in an atom is concentrated in a small area at the center of the atom.

**Question 5**

1 pts

Select all the following pairs of charges specified below that will cancel each other out.

☐ +9 and -9☐ -1 and +3☐ +2 and -2☐ +2 and -1☐ +1 and -1**Question 6**

1 pts

Electrons are [ Select ] negatively charged metal plates and [ Select ] from positively charged metal plates.

**Question 7**

2 pts

Suppose you have a cathode ray tube coated with phosphor so that you can see where on the tube the cathode ray hits by looking for the glowing spot. What will happen to the position of this glowing spot if:

a. a negatively charged metal plate is placed above the cathode ray tube? [ Select ]

b. a negatively charged metal plate is placed to the right of the cathode ray tube? [ Select ]

c. a positively charged metal plate is placed to the right of the cathode ray tube? [ Select ]

d. a negatively charged metal plate is placed above the cathode ray tube, and a positively charged metal plate is placed below the cathode ray tube?

[ Select ]

e. a positively charged metal plate is placed below the cathode ray tube, and an equally positively charged metal plate is also placed below the cathode ray tube?

[ Select ]

**Question 8**

1 pts

Click on each of the following statements that are true.

☐ Neutral atoms of a given element must contain the same number of protons as neutrons.☐ The nucleus of an atom contains all of the protons in the atom.☐ The nucleus of an atom contains all of the neutrons in the atom.☐ Neutral atoms of a given element must contain the same number of protons as electrons.☐ The nucleus of an atom contains all of the electrons in the atom.**Question 9**

1 pts

Match the characteristics in the left column with the appropriate subatomic particle.

has a charge of +1

[ Choose ]

has a mass of  $9.10938 \times 10^{-28}$  grams

[ Choose ]

is neither attracted/repelled by charged objects

[ Choose ]

### Question 10

1 pts

Indicate which of the following statements are true.

- ☐ An atom with 7 protons and 7 neutrons will have  $A = 14$ .
- ☐ A neutral atom with  $A = 4$  must have 4 electrons.
- ☐ An atom with 7 protons and 7 neutrons will have  $Z = 14$ .
- ☐ A neutral atom with  $Z = 4$  must have 4 electrons.
- ☐ A neutral atom with 7 electrons and 7 neutrons will have  $A = 14$ .
- ☐ The symbol for an element's atomic number is  $A$ .
- ☐ An element's atomic number is equal to the number of protons in the nuclei of any of its atoms.

### Question 11

2 pts

Use the periodic table to find the **symbol** for the element with:

a. 44 electrons in a neutral atom.

b. 30 protons.

c.  $Z = 36$ .

d. an atomic mass of 14.007 amu.

### Question 12

2 pts

Below is a list of data for five different elements. The drop down box contains data for different isotopes of the same five elements. For each one chose the matching isotope of the same element.

an atom with 2 protons and 1 neutron

[ Choose ]

a Be (beryllium) atom with 5 neutrons

[ Choose ]

an atom with  $Z = 6$  and  $A = 13$

[ Choose ]

an atom with 1 proton and  $A = 1$

[ Choose ]

an atom with  $Z = 7$  and 7 neutrons

[ Choose ]

### Question 13

1 pts

Match the following isotopes with their respective mass numbers below.

an atom with  $Z = 17$  and 18 neutrons

[ Choose ]

an H atom with no neutrons

[ Choose ]

an He atom with 2 neutrons

[ Choose ]

an atom with  $Z = 11$  and 11 neutrons

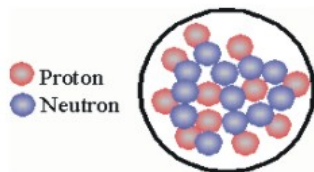
[ Choose ]

an atom with 11 neutrons and 12 protons

[ Choose ]

### Question 14

2 pts



This is a diagram of a nucleus. Fill in the blanks below.

mass number ( $A$ ) =

atomic number ( $Z$ ) =

element symbol =

hyphen notation =

### Question 15

2 pts

Answer the following questions:

a. What's the mass number of a neutral atom that contains 17 protons and 18 neutrons?

b. What's the mass number of a neutral atom that contains 7 electrons and 7 neutrons?

c. What's the mass number of a neutral atom that contains 5 protons, 5 electrons, and 6 neutrons?

d. What's the mass number of a neutral atom that contains 3 electrons and 4 neutrons?

Not saved

Submit Quiz