

1. Atoms are the smallest particles of an element which retain the properties of that element.

2. Match the characteristics of the subatomic particles (Choose all correct answers) :

b e f h electrons

~~a~~. positively charged

f. orbit the nucleus

~~b~~. negatively charged

g. found in the nucleus

a d g protons

~~c~~. neutral (no charge)

h. discovered by Sir J.J. Thomson

c d g i neutrons

~~d~~. have a mass of one a.m.u.

i. discovered by Sir James Chadwick

~~e~~. have a mass of 1/1840 a.m.u.

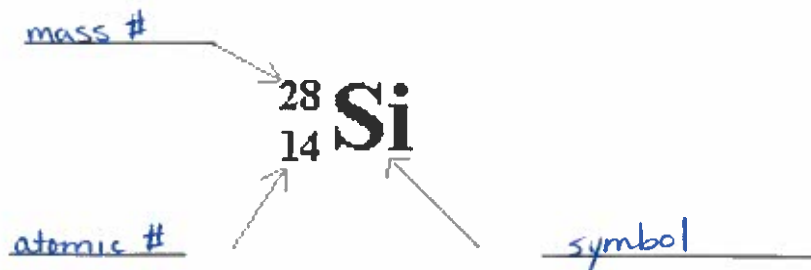
3. The atomic # of an element is the number of protons in an atom of that element and defines the element.

4. The mass # of an element indicates the total number of neutrons and protons in the nucleus of an atom of that element

5. Anions are atoms that have gained electrons and have an overall negative charge.

6. Isotopes are atoms of the same element which have a differing number of neutrons.

7. Label the following diagram of the element silicon with symbol, atomic number, and mass.



8. There are three isotopes of silicon; they have mass numbers of 28, 29, and 30. The atomic mass of silicon is 28.086 amu. Comment on the relative abundance of these three isotopes.

Si-28 is the most abundant as the atomic mass is closest to 28.

9. Answer the following for silicon from the above information

14 number of protons

14 number of neutrons

14 number of electrons

14. Complete the following table:

Atomic Number	Mass Number	No. of protons	No. of neutrons	No. of electrons	Symbol of Element
8	16	8	8	8	O
16	32	16	16	16	S
13	27	13	14	13	Al
19	39	19	20	19	K

15. Name the element which has the following number of particles:

a. 24 electrons, 29 neutrons, and 26 protons $^{55}_{26}\text{Fe}^{2+}$

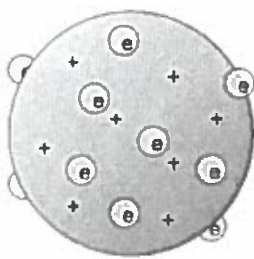
b. 20 protons $^{40}_{20}\text{Ca}$

c. 86 electrons, 125 neutrons, 82 protons $^{207}_{82}\text{Pb}^{4-}$

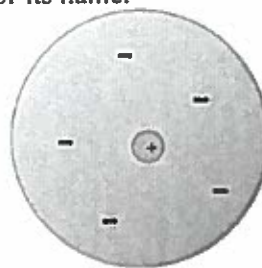
17. Match the model of the atom with the person who proposed the model or its name.



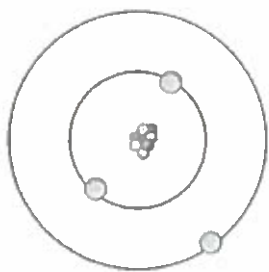
A



B



C



D



E

Democritus/Dalton's Model

A

Bohr Model

D

Rutherford Model

C

Current Model

E

Thomson Model

B