Unit 8 Review: Chapter 4 – Atoms Answer Key

For questions 1 - 8, if the statement is true, write true on your paper. If the statement is false, write false and then rewrite the statement so that it is true. Answer the rest of the questions with your best answer.

1) Protons and neutrons have the same charge. Protons have a + charge and Neutrons have no charge.
2) Protons and electrons have opposite charges. True
3) Protons and neutrons have the same mass. True
4) Protons, neutrons, and electrons all have about the same mass. Protons and Neutrons have about the same mass and electrons have about 1/3 the mass of the protons and neutrons.
5) Neutrons have no charge and no mass. Neutrons have no charge and the mass of 1 amu or about the same mass as a proton.
6) An electron has far less mass than either a proton or neutron. True
7) Both oxygen-17 and oxygen-18 are isotopes of oxygen. True
8) An electron cloud represents all the orbitals in an atom. True
9) Write the three (3) parts of John Dalton's Atomic Theory.
   - Every element is made of tiny, unique particles called atoms that cannot be subdivided.
   - Atoms of the same element are exactly alike.
   - Atoms of different elements can join to form molecules.

10) J. J. Thomson's experiments provided evidence that an atom contains negatively charged particles he called electrons.

11) Who provided evidence for the existence of a nucleus in an atom? Ernest Rutherford

12) Who concluded that the nucleus in an atom contained both protons and neutrons? James Chadwick

13) Which subatomic particle has a negative charge? Electrons Which has a positive charge? Protons

14) The number of protons in one atom of an element is that element's atomic number which in turn tells you it's identity or name.

15) To find the number of neutrons in an atom, you would subtract the atomic number from the atomic mass or mass number.

16) In Niels Bohr's model of the atom, electrons move like planets orbiting the sun.

17) The subatomic particle that J. J. Thomson discovered has a(an) negative (-) charge.

18) Protons and neutrons are found in the nucleus of an atom.

19) Neutrons and protons have almost the same mass.

20) If element Q has 11 protons, its atomic number is 11.

21) The nuclei of isotopes contain different numbers of neutrons.

22) The region in which an electron is most likely to be found is called a(an) orbital/electron cloud.

23) The atomic mass of an isotope is the sum of the number of protons and neutrons in its nucleus.

24) The max. number of electrons in the first energy level of an atom is: 2
in the second energy level is: 8
in the third energy level is: 18

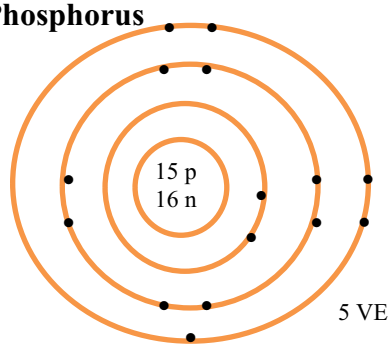
25) A certain atom has 26 protons, 26 electrons, and 30 neutrons. Its mass number is 56.

26) Fill in the chart below with the missing information.

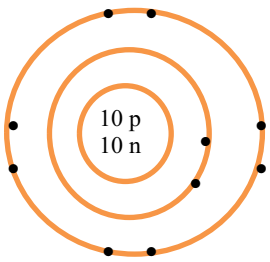
Element Name	Symbol	Atomic #	Mass #	# of Protons	# of Neutrons	# of Electrons
Nitrogen	N	7	14	7	7	7
Arsenic	As	33	75	33	42	33
Scandium	Sc	21	45	21	24	21
Copper	Cu	29	64	29	35	29
Iodine	I	53	127	53	74	53
Krypton	Kr	36	84	36	48	36
Strontium	Sr	38	88	38	50	38
Uranium	U	92	238	92	146	92
Iron	Fe	26	56	26	30	26
Nickel	Ni	28	59	28	31	28
Chlorine	Cl	17	35	17	18	17
Aluminum	Al	13	27	13	14	13
Sulfur	S	16	32	16	16	16
Mercury	Hg	80	201	80	121	80
Tin	Sn	50	119	50	69	50

27) Draw the Bohr's model for the following elements.

Phosphorus



Neon



Beryllium