

Lecture Handout for Atoms

Name _____

I. Vocabulary

1. Atom
2. Element
3. Compound
4. Proton
5. Neutron
6. Electron
7. Nucleus
8. Electron Orbits
9. AMU (atomic mass unit)
10. Isotope
11. Matter
12. States of matter
13. Atomic number
14. Fusion (nuclear)
15. Fission (nuclear)
16. Radiation

II. Practice Problems

Example: Hydrogen = 1 AMU A proton weighs one AMU so Hydrogen has only a proton no neutrons and since it has one positive charge it has one electron a negative charge. But Helium has 4 AMU's which is 2 protons and 2 neutrons; also it has 2 electrons to balance it out. An atom that is balanced will always have the same number of protons and electrons. Now fill in the problem chart with the right number of protons, electrons, neutrons, and AMUs.

Element	AMUs	Protons	Neutrons	Electrons
<u> H </u>	_____	_____	_____	_____
<u> B </u>	_____	_____	_____	_____
<u> Li </u>	_____	_____	_____	_____
_____	<u> 12 </u>	_____	_____	_____
_____	_____	<u> 7 </u>	_____	_____
<u> O </u>	_____	_____	_____	_____
<u> F </u>	_____	_____	_____	_____
_____	_____	<u> 10 </u>	_____	_____
_____	_____	_____	_____	_____

_____	_____ <u>21</u> _____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____ <u>17</u> _____	_____	_____

III. Using the periodic table fill in the blanks for any 3 of the elements above atomic number 80, not in order.

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

IV. Advantages and disadvantages of the use of Uranium (nuclear power) to make electricity. Rewrite the items in the proper category of advantage or disadvantage.

Advantages:

- | | |
|-------|-----------------------------------------------|
| _____ | Materials become radioactive |
| _____ | No pollution during production of electricity |
| _____ | Cost effective |
| _____ | Long plant life (70 -100 years) |
| _____ | relatively easy |
| _____ | Lots of Uranium in the world |
| _____ | well defined and developed process |
| _____ | hard to make repairs when plant is operating |

Disadvantage

radioactive waste last a long time
some risk of mismanagement
public perception is they are bad
Power plants are expensive to build
relatively easy to operate after start up
Plants are expensive to get started at first
requires highly skilled work force.
has no on-off button.