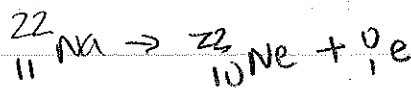


- Unstable radioisotopes
 - naturally found in environment.
 - or man made.

lots & lots of elements above uranium which are unstable isotopes.

3/21/13

The following is an ex of



- a.) Fission
- b.) Fusion
- c.) Alpha decay
- d.) Beta decay
- e.) positron decay.

"Beta decay"
without any other info.

\Rightarrow B or $-1e$.

positively charge.

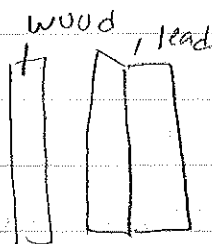
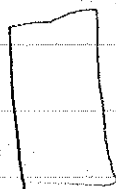
In absence of positive everyone will think its neg. beta decay.

- Radioactive decay - just happens spontaneously.
 - longer half-life, more stable.
- half life change depending on how far you are from band of stability.

Alpha



go through paper



Beta go to wood

Gamma all the way through lead.

Demo

- TH
 - went through paper, wood, & lead.
 - Beta & gamma.
- When put in front of word the voice decreased, & lead was more less.

Q11 What is relationship between the amount of Po that decays in a given time period with the amount of Po that you have at beginning of that?

- More Po you have the more it decays.



Q11 The relationship between the amount of Po lost and amount of Pb gained is:

- amount of Po lost = amount of Pb gained.
- (2) rate of change of Pb = rate change of α :
rate of change of Po = rate of change of α but just (-).

• Rate Law

$$-\frac{\Delta \text{Po}}{\Delta t} = k \text{Po}_{\text{initial}}$$

- Half-life amount of time it takes for $\frac{1}{2}$ amount to decay.

Q11 P-32 has a half-life of 14 days. After 3 months what would be the residual radioactivity of 1 milliwire of ATP labeled w/ P-32?

- 15.6 microwires.

$$\frac{1}{2^6} =$$