RADIOACTIVITY

Radio-active compounds are very unstable. They disintegrate to release α, β, γ radiation and form series of compounds.

α – Particle

$^{4}_{2}He^{2+}$ | 2 protons, 2 Neutrons

	Paper	Alum.	Lead
Ionisation ability	★	★	★
Penatrating ability	★	☆	☆

Smoke detector uses americum 241, which releases α – radiation to detect smoke

β – Particle

$^{0}_{-1}e$ | high energy electron

	Paper	Alum.	Lead
Ionisation ability	★	★	☆
Penatrating ability	★	★	☆

β - particle emmitors are used as tracers in medicine to image insides of human body

γ – Particle

γ | high energy radiation

	Paper	Alum.	Lead
Ionisation ability	★	☆	☆
Penatrating ability	★	★	★

Gamma radiation is used to help sterlise medical equippment

CARBON DATING

In living organisms ratio of C_{14}/C_{12} is constant. As organism dies, C_{14} starts decreasing.

CARBON DATING FORMULA

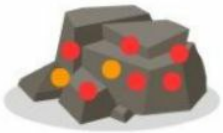
$$N = N_0 . e^{-\lambda t}$$

N = final C_{14}/C_{12} ratio

N_0 = Initial C_{14} / C_{12} which is contant in every organism

URANIUM DATING

Newly formed rock has a lot of uranium atoms. As time passes, unstable uranium converts into stable Lead.



● URANIUM ● LEAD

URANIUM DATING FORMULA

$$N = N_0 . e^{-\lambda t}$$

N = final number of uranium atoms

N_0 = Initial number of uranium atoms