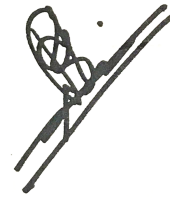


PHYSICS (GRADE-7)

Lesson 49: Radioactivity



Mrs. Ruksana & Mrs. Farhana

1. What is radioactivity?

Radioactivity is the emission of radiation from some elements having unstable nuclei such as Uranium, Radium, Americium, Strontium and Cobalt.

2. Name some radioactive substances.

Uranium, Radium, Americium, Strontium and Cobalt.

3. Name three types of radiation that a radioactive substance may emit.

Alpha (α), beta (β) and gamma (γ) rays.

4. Mention five uses of radioactive isotopes.

i) Radioisotopes are used in measuring thickness of paper, plastic and metal sheets during manufacture

ii) Weak radioisotopes can be injected into body/system, and traced to detect brain tumor and internal bleeding in human body and measure fluid flow in pipes in industry.

iii) Radiotherapy is used in cancer treatment

iv) Gamma rays are used to sterilise medical instruments by killing bacteria.

v) The age of archeological remains can be estimated.

5. Compare alpha, beta and gamma radiations in terms of causing ionisation.

Beta particles have more chances of causing ionisation than gamma rays, and alpha particles have even more chance than beta particles.

6. Why radiation can be dangerous for our health?

The ionising effect produced by radiation causes damage to cells and tissues in our bodies. Beta and gamma radiations may cause radiation burns (redness and sores on the skin). Large exposures may lead to radiation sickness and death.

7. How can we dispose radioactive waste safely?

We can enclose the waste in steel containers, and bury the containers in concrete bunkers. We should be very much careful so that no leakage may be there.

8. What is radioactive decay?

When radioactive atoms emit alpha and beta particles, they decay into atoms of different elements that have more stable nuclei. This is called radioactive decay.