

Physics - 12th Class Physics Chapter 10 Short Questions Preparation

Q1. Define nuclear fission.

Ans 1: Such a reaction in which a heavy nucleus like that of uranium splits up into two nuclei of roughly equal size along with the emission of energy is called fission reaction.

Q2. Differentiate between Baryons and Mesons.

Ans 1: Baryons: The particle equal in mass greater than protons are called baryons. It is made by 3 quarks.

Ans 2: Mesons: The particle which are lighter in mass than protons are called mesons, A pair of quark and an antiquark makes a meson.

Q3. Briefly describe the term radiography.

Ans 1: The radiography is a technique used in medicine such as internal imaging of the brain to determine the size and location of the tumor precisely.

Q4. What factor make a Fusion reaction difficult to achieve?

Ans 1: A fusion reaction requires large energy and temperature, up to million degrees centigrades, So a fusion reaction is difficult to achieve.

Q5. What is radioactivity decay? Give an example.

Ans 1: The emission of radiations from elements having charge number Z greater than 82 is called radioactivity or radioactive decay.

The emission of an α -particle from radium-226, result in the formation of radon gas.

Q6. Define background radiations. What are their sources?

Ans 1: When no radioactive source is placed near the radiations detector, it records radiations, These radiations are called background radiations.

Its source are

1. The cosmic rays which come to us from outer space.
2. Radioactive substance present in the Earth's crust.
3. Radioactive potassium and carbon in the body.

Q7. What do you know about Radioactivity?

Ans 1: The elements having charge number $Z > 82$ are unstable and they emit invisible radiations which affect the photographic plate. Such elements are called radioactive elements and this process is called radioactivity.

Q8. Write down two advantages of solid state detector over geiger muller counter.

Ans 1: Solid state detector can count very fast than gas filled detector.
Solid state detector is much smaller in size.
It operates at low voltage.

Q9. Differentiate between parent and daughter element.

Ans 1: The change of an element into a new element due to emission of radiation is called radioactive decay. The original atom is called parent element and the element formed due to this decay is called daughter element.

Q10. How alpha and beta may ionize an atom without directly hitting the electrons?

Ans 1: As alpha and beta are electrically charged particles, so they can cause ionization without hitting an atom either by repelling the electron of target particle.
