CHAPTER-13
Nuclei
ASSIGNMENT-3

(3 MARKS QUESTIONS)

Q1. A heavy nucleus X of mass number A= 240 and B.E/A = 7.6MeV is split into two nearly equal fragments Y and Z of mass numbers A_1= 110 and A_2= 130. The binding energy of each one of these nuclei is 8.5MeV per nucleon. Calculate the total binding energy of each one of the nuclei X, Y and Z and hence the energy Q released per fission in MeV

Q2.Four nuclei of an element fuse together to form a heavier nucleus. If the process is accompanied by release of energy, which of the two the parent or the daughter nucleus would have higher binding energy

(2 MARKS QUESTIONS)

Q3. In tropical nuclear reaction e.g., $^{2}H_{1} + {}^{2}H_{1} - - -> {}^{3}He_{2} + {}^{1}n_{0} + 3.27$ MeV, although number of nucleons is conserved, yet energy is released. How? Explain

Q4. Obtain approximately the ratio of the nuclear radii of the gold isotope $_{79}Au^{197}$ and the silver isotope $_{47}Ag^{107}$