Reg.No. :

I.Answer all questions.

II.Use blue pen only.

Time : 01:00:00 Hrs

Total Marks : 75

Section-A

5 x 1 = 5

1) Slow neutrons are neutrons having energies between

   (a) 1000 eV to 2000 eV (b) 2000 ev to 0.5 ev (c) Oev to 1000 eV (d) 0.5 ev to 10 mec

2) The mass of electron is ....times the mass of proton.

   (a) 1836 (b) 1/1836 (c) 1.67×10^{27} (d) 9.11×10^{31}

3) The nuclear radius is given by

   (a) $R = r_o^3 A$ (b) $R = r_0^{1/3} A^3$ (c) $R = r_o A^{1/3}$ (d) $R = ro^3 A^{1/3}$

4) The mass of neutron in atomic mass unit

   (a) 1.007825 amu (b) 1.008665 amu (c) 1.6766 amu (d) 1.007675 amu

5) The energy equivalence of 1amu

   (a) 931 MeV (b) 931 meV (c) 913 MeV (d) 913 eV

Section-B

5 x 3 = 15

6) Define radioactivity.

7) Define Curie.

8) What do you mean by artificial radioactivity?

9) What is artificial transmutation?

10) What is meant by breeder reactor?

Section-C

6 x 5 = 30

11) State the properties of β-rays.

12) State the properties of γ-rays.

13) Explain the characteristics of nuclear forces.

14) Write the differences between an atom bomb and a nuclear reactor.

15) a)   How radio isotopes are used in radio carbon dating?

        (OR)

   b)   Explain artificial radioactivity, with example.

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