B.Sc. NUCLEAR MEDICINE TECHNOLOGY
FIRST YEAR
PAPER III – BASIC PHYSICS AND NUCLEAR PHYSICS

Q.P. Code: 802103

Time: Three Hours   **Maximum: 100 Marks**
Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Different atomic models used to explain atomic structure.
2. Describe with a neat diagram the construction and working of a moving coil galvanometer and how it can be converted into an ammeter or voltmeter?
3. Describe the instruments voltmeter, ammeter and multimeter.

II. Write notes on: **(8 x 5 = 40)**

1. What will be the activity of a radioactive substance after 4 half-lives if the initial activity is 100 mCi?
2. Linear Attenuation coefficient.
3. Fluorescence and phosphorescence.
4. Annihilation process.
5. Compton effect.
6. Decay scheme of Tc-99m and Iodine-131.
7. Derive $N = N_o e^{(-\lambda t)}$.
8. Direct current and alternating current.

III. Short answers on: **(10 x 3 = 30)**

1. Nuclear binding energy.
2. Electron Volt.
3. Ionization.
4. Isobar and Isomer.
5. Photon.
6. Internal conversion.
7. Define the term "Radiation".
8. Ohms law.
9. Electrical resistance.
10. Half Value layer.

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