[LL 0817] AUGUST 2017 **Sub. Code: 1907**

B.Sc. RADIOTHERAPY TECHNOLOGY

FIRST YEAR

PAPER II – BASIC PHYSICS, RADIATION PHYSICS AND BASIC OF CLINICAL RADIOGRAPHY/IMAGING

Q.P. Code: 801907

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

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

1. How are x-rays produced? Explain the working of a stationary anode x-ray tube and mention its applications and demerits.
2. Explain the process of alpha decay, beta decay and gamma decay with suitable examples.
3. Elucidate in detail the principle and working of an ammeter, galvanometer and voltmeter. Mention their applications and uses.

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

1. Quantum theory of radiation.
2. Factors affecting quality of x-rays.
3. Compton scattering.
4. Principles of Magnetic Resonance Image formation.
5. Characteristic X-ray spectrum.
6. Multimeter and its uses.
7. Constituents of an atom.
8. Factors affecting the fluoroscopic image.

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

1. Define Linear attenuation coefficient.
2. Give the principle of tomography.
3. What is Thermionic emission?
4. Define Half life and give two examples.
5. What is Image quality?
6. What are the constituents of film developer?
7. Hysteresis loss.
8. Role of dark room.
9. Difference between fog and noise.
10. State Ohms law with an example.

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