[LQ 0220] FEBRUARY 2020 **Sub. Code: 1907**

B.Sc. RADIOTHERAPY TECHNOLOGY

FIRST YEAR

PAPER II – BASIC PHYSICS, RADIATION PHYSICS & 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. Describe the constituents of fixer and developer. Explain the automatic film processing.
2. With neat graphs explain in detail the factors affecting the quality and quantity of X-rays.
3. Explain computed tomography with suitable diagram.

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

1. Explain about the measurement of beam quality.
2. Dark room.
3. Explain CCD and CRT monitors.
4. What is isotope, isotone and isobar? Give example.
5. Step up and step down transformer.
6. Ionization and excitation.
7. Electron capture and internal conversion.
8. Image intensifier.

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

1. Electromagnetic spectrum.
2. Hysteresis loss.
3. SI units of work, force, power and energy.
4. Linear attenuation coefficient.
5. Define atomic number and mass number.
6. Define half life of radioactivity materials.
7. Fluoroscopy.
8. Characteristic X-ray.
9. Filters used in X-ray tube.
10. Image sequencing in magnetic resonance imaging.

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