[LH 0815] **AUGUST 2015** **Sub.Code :1923**

B.Sc. RADIOTHERAPY TECHNOLOGY
THIRD YEAR
PAPER III – RADIATION HAZARDS, CONTROL AND SAFETY

Q.P. Code: 801923

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

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

1. Emergency preparedness for a telecobalt unit.
2. Responsibilities of a radiotherapy technician according to AERB safety code.
3. Explain the construction and working of a thermoluminescent dosimeter (TLD) with diagram.

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

1. Use of different filters in a film badge.
2. Stochastic effects and deterministic effects on cell.
3. Dose limits for radiation workers.
4. Working of a pocket dosimeter.
5. What is a phantom? Describe the uses.
6. How do you perform a radiation survey of a brachytherapy room?
7. Interlocks and the design of doors required for 15 MV linear accelerator room.
8. Layout for an x-ray room.

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

1. Equivalent dose.
2. Internal exposure.
3. Who is a radiation worker? Dose equivalent limits for non-radiation worker .
4. Define occupancy factor.
5. ALARA principle and its outcome.
6. Differences between primary and secondary barrier.
7. Area monitor.
8. What is personnel monitoring?
9. Dose limits for fetus.
10. How do time, distance and shielding affect the control of radiation?

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