[LJ 0816] AUGUST 2016 **Sub Code: 1823**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY / RADIO DIAGNOSIS TECHNOLOGY

THIRD YEAR

PAPER III – RADIOBIOLOGY AND RADIATION SAFETY

Q.P. Code: 801823

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

Answer All questions.

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

1. Write in detail about the different methods of personnel monitoring and their advantages.
2. Explain about the biological effects of radiation.
3. Enumerate the general guidelines in planning a radiation facility which includes diagnostic radiology and radiotherapy? Draw a schematic diagram of a model plan of an X-ray room.

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

1. Genetically significant dose.
2. Equivalent dose.
3. Dose limits according to ICRP 60.
4. Responsibilities of a Radiological safety officer (RSO) in radiation protection.
5. Cosmic rays.
6. Lead apron.
7. Film badge.
8. Registration of X-ray unit with AERB.

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

1. What are procedures and tools to reduce patient dose?
2. Roentgen.
3. View boxes.
4. Annual dose limit of radiation worker and pregnant radiation worker.
5. Thyroid shield.
6. Chronic radiation dermatitis.
7. ALARA principle.
8. Tissue weighting factors.
9. Half value layer.
10. X-ray room lighting.

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