

[LH 0815]

AUGUST 2015

Sub Code: 1823

**B.Sc. RADIOLOGY IMAGING 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. Plan a diagnostic X-ray room setup with schematic diagram confirming AERB recommendations.
2. Explain in detail various radiation protection tools / devices.
3. What is ALARA? Explain various methods to reduce patient dose in Fluoroscopy.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Factors affecting radiation in diagnostic X-rays.
2. Thermoluminescent dosimeter, its advantages over film badge.
3. How to reduce patient dose in X-ray studies on children?
4. AERB regulations on warning signs at a Diagnostic X-ray room.
5. Permissible dose limits for public and radiation worker.
6. Patient dose reduction in CT – explain on Pitch, CT dose modulation.
7. How to assess radiation workload?
8. Importance of quality control in radiation safety.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Radiation effects on eye.
2. Use and features of thyroid shield.
3. Sources of background ionizing radiation.
4. Importance of X-ray beam collimation.
5. Latency period for radiation induced cancer.
6. Skin entrance dose, how to reduce it?
7. Equivalent Dose, How do we equate effects of different kinds of radiation?
8. Cumulative dose, why is this relevant in radiation safety?
9. Use of Lead goggles.
10. Inverse square law, its application.

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