

[LI 0216]

FEBRUARY 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. Classify and discuss various biological effects of radiation.
2. What is ALARA? Explain various methods to reduce patient dose.
3. Explain in detail Thermo luminescent Dosimeter with diagram, advantages over Film badge.

II. Write notes on:

(8 x 5 = 40)

1. Inverse square law - explain with an example.
2. What are electronic dosimeters – their usage in radiation survey?
3. AERB regulations on designing a Diagnostic X-ray room.
4. Discuss various radiation protection tools/devices.
5. Discuss on Warning signs that has to be displayed at a Diagnostic X-ray room.
6. How to assess radiation workload?
7. Importance of quality control in radiation safety.
8. What is Skin entrance dose, various factors that affect skin entrance dose?

III. Short answers on:

(10 x 3 = 30)

1. Newer online registration for Radiation devices.
2. What is Last frame hold, how does this help?
3. How to check performance of a lead apron periodically?
4. Background ionizing radiation, enumerate the sources.
5. Notes on Radiation induced cancer.
6. Provide dose limits recommended for public and radiation worker.
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 and features of gonad shield.
10. CT Dose modulation, effect on patient dose.
