

[LB 0212]

AUGUST 2012

Sub. Code: 1802

**B.Sc. RADIOLOGY IMAGING TECHNOLOGY AND  
B.Sc. RADIO DIAGNOSIS TECHNOLOGY  
FIRST YEAR**

**PAPER I – GENERAL PHYSICS, RADIATION PHYSICS  
AND PHYSICS OF DIAGNOSTIC RADIOLOGY**

*Q.P. Code : 801802*

**Time : Three hours**

**Maximum : 100 marks**

**(180 Mins) Answer ALL questions in the same order.**

**I. Elaborate on:**

**Pages Time Marks  
(Max.)(Max.)(Max.)**

- |   |   |    |    |
|---|---|----|----|
| 1. Write in detail the working principle of a Personnel Monitoring Devices.                 | 7 | 20 | 10 |
| 2. Write in detail the construction and working principle of a Stationary Anode X-Ray tube. | 7 | 20 | 10 |
| 3. Explain the principle of various Radiation Detectors.                                    | 7 | 20 | 10 |

**II. Write Notes on:**

- |  |   |    |   |
|--|---|----|---|
| 1. With diagram explain the Grid Controlled X-ray tube.            | 4 | 10 | 5 |
| 2. Write any five properties of X-Rays.                            | 4 | 10 | 5 |
| 3. Discuss the working principle of Pocket Dosimeter.              | 4 | 10 | 5 |
| 4. Write briefly about Characteristic Radiation.                   | 4 | 10 | 5 |
| 5. Discuss about Photoelectric effect.                             | 4 | 10 | 5 |
| 6. Define heel effect and its application in Diagnostic Radiology. | 4 | 10 | 5 |
| 7. Discuss the principle of Ionization Chamber.                    | 4 | 10 | 5 |
| 8. Write briefly about the Properties of alpha rays.               | 4 | 10 | 5 |

**III. Short answers on:**

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|---|---|---|---|
| 1. Define Half Value layer.                   | 2 | 4 | 3 |
| 2. Define Ionization.                         | 2 | 4 | 3 |
| 3. Write a note Coherent scattering.          | 2 | 4 | 3 |
| 4. Define Inherent Filtration.                | 2 | 4 | 3 |
| 5. Factors affecting the Intensity of X-rays. | 2 | 4 | 3 |
| 6. Define Half Life.                          | 2 | 4 | 3 |
| 7. Write short note on Step Down transformer. | 2 | 4 | 3 |
| 8. Define Atomic and Mass Number.             | 2 | 4 | 3 |
| 9. Define Grid Ratio.                         | 2 | 4 | 3 |
| 10. Define Space charge effect.               | 2 | 4 | 3 |

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