

[LB 1012]

OCTOBER 2012

Sub. Code: 4015

**M.Sc (MEDICAL PHYSICS) DEGREE EXAMINATION  
(Revised Regulations for Candidates admitted from 2010-2011)**

**FIRST YEAR**

**Paper V – RADIATION DETECTORS AND INSTRUMENTATION**

*Q.P. Code : 284015*

**Time : Three hours**

**Maximum :100marks**

**Answer All questions.**

**I. Elaborate on :**

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

- |  |    |    |    |
|--|----|----|----|
| 1. What are the various methods available for radiation detection and measurement? Explain any two methods in detail.  | 17 | 40 | 20 |
| 2. (a) Explain the principle of Thermoluminescent Dosimetry.<br>(b) Write in detail the construction and working of TLD reader.<br>(c) Advantages and disadvantages of TLD and their applications. | 17 | 40 | 20 |

**II. Write Notes on :**

- |  |   |    |   |
|--|---|----|---|
| 1. Characteristics of Operational Amplifier.             | 4 | 10 | 6 |
| 2. AC-DC Converter.                                      | 4 | 10 | 6 |
| 3. MOSFET Dosimetry.                                     | 4 | 10 | 6 |
| 4. Desirable chamber characteristics for an ion chamber. | 4 | 10 | 6 |
| 5. Working Principle of Semiconductor detectors.         | 4 | 10 | 6 |
| 6. Pocket Dosimeter.                                     | 4 | 10 | 6 |
| 7. Maintenance of dosimeters and surveymeters.           | 4 | 10 | 6 |
| 8. Area Monitoring.                                      | 4 | 10 | 6 |
| 9. Gamma ray spectrometry.                               | 4 | 10 | 6 |
| 10. Optically Stimulated Luminescence Dosimeter.         | 4 | 10 | 6 |

\*\*\*\*\*