[LH 0815] **AUGUST 2015** **Sub. Code: 2122**

B.Sc. NUCLEAR MEDICINE TECHNOLOGY

THIRD YEAR

PAPER II – RADIATION BIOLOGY AND RADIATION SAFETY IN NUCLEAR MEDICINE

Q.P. Code: 802122

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

Answer All questions

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

1. Describe the effects of radiation on embryo.
2. Enumerate the maximum permissible levels of radiation to public and radiation workers (Whole body and organs).
3. Explain in detail the various personnel radiation monitoring devices for radiation workers.

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

1. Principle of contamination clothing disposal in N.M.
2. Electromagnetic spectrum.
3. Define LET and mention the LET for various types of radiation.
4. Carcinogenesis due to radiation.
5. What is RBE and mention the same for various types of radiation?
6. LD50/60.
7. Define absorbed dose, equivalent dose and effective dose.
8. Mechanism of cell killing.

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

1. Mediums of radiation detection.
2. Ionizing radiation.
3. Interaction of ionizing radiation with matter.
4. FDG storage container.
5. Properties of bet particles.
6. Examples of nonionizing radiation.
7. $I=Ioe-\mu X$.
8. Contraindications for high dose I131 therapy.
9. What is Radiation sickness?
10. Duration of fetal period.

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