

**THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY**

**[AHS 0921]**

**SEPTEMBER 2021  
(MAY 2021 EXAM SESSION)**

**Sub. Code: 3601**

**POST GRADUATE DIPLOMA IN RADIOLOGY & IMAGING TECHNOLOGY  
(From 2014-2015 onwards)**

**PAPER I – FUNDAMENTALS OF RADIATION PHYSICS & PHYSICS OF DIAGNOSTIC RADIOLOGY  
*Q.P. Code : 363601***

**Time : Three hours**

**Answer ALL Questions**

**Maximum : 100 Marks**

**I. Elaborate notes on:**

**(2 x 20 = 40)**

1. What are the radioactive isotopes used in diagnostic radiology? What are the radiation hazards and how do you prevent the same .
2. Describe physical principles involved in MRI. Discuss merits & demerits of MRI.

**II. Write Short Notes on:**

**(10x6 = 60)**

1. Discuss the various modes of radioactive decay.
2. Line focus principle
3. Heel effect
4. Draw the basic structure of a transducer. Merits and Demerits of various transducer available
5. Principle of doppler with colour flow imaging
6. Scattered radiation
7. Fission and Fusion
8. Gradient echo imaging
9. Factors affecting contrast of an image
10. MR Spectroscopy

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