

M.D. DEGREE EXAMINATION

BRANCH VIII – RADIO DIAGNOSIS

**PAPER I – MEDICAL RADIATION PHYSICS AS APPLIED TO
RADIO DIAGNOSIS**

Q.P. Code: 202031

Time : Three Hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 15 = 30)

1. Describe the basic principles of MRI. Discuss briefly about T1 and T2 relaxation and its utility in MRI.
2. Describe the different types of contrast media reactions. Discuss briefly the precautions to be taken to avoid these reactions and their management.

II. Write notes on:

(10 x 7 = 70)

1. 3D and 4D ultrasound.
2. Personal dosimeters.
3. What are grids? Classify them and discuss their utility in imaging.
4. Methods to reduce radiation dose in CT.
5. Acoustic Radiation Force Impulse (ARFI) imaging.
6. Hepatobiliary-specific MRI contrast agents.
7. CT artifacts.
8. Principle and utility of MR spectroscopy.
9. Tissue Harmonic Imaging.
10. X-ray beam restriction devices.
