

**Rajiv Gandhi University of Health Sciences, Karnataka**  
**Third Year B.Sc. Medical Imaging Technology Degree Examination – 30-May-2024**

**Time: Three Hours**

**Max. Marks: 100 Marks**

**Diagnostic Imaging Techniques and Modalities (RS-4)**

**Q.P. CODE: 3293**

Your answers should be specific to the questions asked  
Draw neat labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)**

**2 x 10 = 20 Marks**

1. Explain CT instrumentation in detail and explain slip ring technology
2. Explain five MRI artifacts and their compensations

**OR**

Write brief note on interventional CT guided procedures

**SHORT ESSAYS (Question No 5 & 10 choice)**

**10 x 5 = 50 Marks**

3. Data acquisition in CT
4. Doppler effect
5. Importance of informed consent and check list in MRI
6. Explain spin echo sequence, STIR, FLAIR, Fast spin echo, inversion recovery
7. Third generation CT
8. CT contrast agents
9. Explain MRI zones
10. Storage and disposal of radioactive materials

**OR**

Role of CT technologist in patient preparation, positioning, scanning and documentation

11. Explain computed radiography and digital radiography
12. Gamma camera

**SHORT ANSWER**

**10 x 3 = 30 Marks**

13. K-space
14. Explain Larmor Equation, Precessional path and Precessional frequency
15. Spectroscopy (MRS)
16. Diffusion Weighted Imaging (DWI)
17. Explain atomic structure
18. Piezoelectric effect
19. Pixel and Voxel
20. MRI perfusion imaging
21. Signal to noise ratio
22. Contraindications for MRI and importance of Fringe field

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