

QP CODE: 201018

Reg. No.....

**Second Year B.Sc MRT Degree Regular/Supplementary
Examinations March 2023**

Radiation Physics I

Time: 3 Hours

Total Marks:100

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*

Essays:

(3x10=30)

1. Explain the principle of Computerised Tomography and the different generations of CT
2. Describe in detail the different quality control tests that are done for a diagnostic X-ray machine
3. Explain the variation of ionisation current with applied voltage in a gas chamber. What are the different detectors in use, based on the applied voltage

Short notes:

(8x5=40)

4. Mammography
5. Luminescence and its uses
6. Types of Grids in diagnostic X-ray units
7. Digital Subtraction Angiography
8. Measuring KVp of X-ray machine
9. Scintillation detector
10. Villard Circuit
11. Manual film processing

Answer briefly:

(10x3=30)

12. Modulation Transfer Function
13. Photo electric effect
14. Half value layer
15. Heating of X-ray units
16. Focal Spot
17. Define Rad, Gray, Sievert
18. Thermoluminescent Dosimeter
19. He-Ne Laser
20. X-ray emission Spectrum
21. Electronic equilibrium
