Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Medical Imaging Technology Degree Examination – 05-May-2026

Time: Three Hours **Max. Marks: 100 Marks**

RADIATION PHYSICS
Medical Physics & Radiation Safety in Radio Diagnosis (RS-4)
Q.P. CODE: 3290

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 grids, its merits and demerits, types of grids and grid cut off in details
2. Explain about the radiation survey meters
   OR
   Explain the biological aspects of radiological protection

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Construction and working of a grid controlled x-ray tube
4. Elaborate the structure and working of Plumbicon tube with a neat diagram
5. Write a note on beam Restricting Devices
   OR
   Explain the types of filters used in radiography
6. Explain the photoelectric effect and its applications in radio diagnosis
7. Working of a high frequency generator
8. Write a short note on the operating principle of a scintillation detector
9. Radiation protection in mammography
10. Vacuum tube diode and triode
    OR
    Note on radioactive decay types with examples
11. Explain factors affecting quality and intensity of radiation
12. Explain self rectification circuit

SHORT ANSWER **10 x 3 = 30 Marks**

13. Law of radioactive disintegration and half –life period
14. X-ray tube housing
15. Define – equivalent dose, effective dose and Relative Biological Effectiveness (RBE)
16. ALARP principle
17. Explain Anode Heel effect
18. magnetic circuit breaker
19. Draw a neat diagram of x-ray room layout
20. Describe the "Delta" and "Wye" Connections
21. Construction of thermo luminescence dosimeter
22. Laws of Transformer

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