Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Medical Imaging Technology Degree Examination – 28-Oct-2025

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. Write in detail about interaction of radiation with matter
2. Explain briefly types of gas filled detector

   OR

   Define transformer. Explain its working and types. Add a note on loss of transformer

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

3. Discuss the cardinal principle of radiation protection
4. Write a short note on fuses
5. Explain X-ray room design with diagram

   OR

   Write a note on radiolysis of water

6. Illustrate the design and working of vidicon with a diagram
7. Explain radiation units and quantities
8. Write in detail about somatic effect of radiation
9. HVL and TVL
10. List the personnel monitoring devices and explain in detail about Thermoluminescent dosimeter

    OR

    Beam restricting devices

11. Radiation protection during fluoroscopic procedure
12. List the advantages of grid and explain in details about grid cut-off

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

13. ALARA
14. Properties of x-rays
15. P-n junction rectifier
16. Anode cooling chart
17. Reed switch
18. 10 day rule and 28 day rule
19. Draw a neat labelled diagram of image intensifier
20. Explain heavy metal filter
21. Gas filled x-ray tube
22. Earthing

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