Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Medical Imaging Technology Degree Examination – 28-Oct-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. Define radioactive decay. Explain different modes of radioactive decay
2. Write in detail about biological effect of radiation
   OR
   What is grid and its type? Explain grid-cut off and air gap technique

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

3. Recording of fluoroscopic image
4. Describe the structure of atom
5. Write in detail about electromagnetic spectrum
   OR
   Explain X-ray emission spectrum
6. Explain pair production and photodisintegration with their applications in radiology
7. Define filtration and types of filters
8. X-ray tube rating chart
9. Explain medium/high frequency generator
10. Discuss about protective devices
    OR
    Explain the principle of image intensifier with diagram
11. List the radiation survey meter. Explain about scintillation detector
12. Explain production of x-rays with diagram. Add note on properties of x-rays

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

13. Half value layer
14. Magnetic relay
15. Describe the 'delta' and 'wye' connection
16. Define equivalent dose and effective dose
17. Pocket dosimeter
18. inverse square law
19. Heavy metal filter
20. Concept of ALARP
21. Short note on x-ray collimator
22. Define the following a) Work load b) Use factor c) Occupancy factor

*****