

Rajiv Gandhi University of Health Sciences, Karnataka
II Year B.Sc. Imaging Technology Degree Examination – Aug 2013

Time: 3 Hours**Max. Marks: 40 Marks****Physics of Radiology****Q.P. Code : 1353**

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary
(Note : Both QP Codes 1353 and 1354 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One)**1 x 10 = 10 Marks**

1. State Inverse Square law as applied to a point Isotropic source of any Electromagnetic radiation, prove the inverse square law using sphere model. If the Intensity of photons at a distance of one meter from a point isotropic source is 100 photons/ cm²/ second, calculate the number of photons emitted by the source per hour.
2. Describe artificial radioactivity: Give an account of any two artificially produced radioactive Isotopes used in medicine under the following heads: a) Production b) Radioactive properties c) Application in the field of medicine.

SHORT ESSAYS (Answer any Three)**3 x 5 = 15 Marks**

3. Rectification of A.C. voltage.
4. Semiconductor diode.
5. Self Induction, Mutual Induction and their application.
6. Exponential nature of radioactive decay.

SHORT ANSWERS (Answer any Five)**5 x 3 = 15 Marks**

7. Pair production.
8. Hardening of x-rays.
9. Photo Electric absorption.
10. Electron volt, kev, Mev.
11. Linear attenuation coefficient and mass attenuations coefficient.
12. Structure of Nucleus.
