Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Radiography Degree Examination – MARCH 2018

Time: Three Hours **Max. Marks: 80 Marks**

RADIATION PHYSICS & MEDICAL PHYSICS

Q.P. CODE: 2204

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. What are the advantages of using rotating anode x-ray tube? Describe construction and working of rotating anode X-ray tube with a neat diagram.
2. Explain in detail about the three major methods of interaction of x-ray and gamma rays with matter.
3. What is maximum permissible dose and mention the AERB recommended dose limits for Radiation workers and public. Write about the construction and estimation of personnel dose using TLD badge.

SHORT ESSAYS (Answer any Ten) **10 x 5 = 50 Marks**

4. Types of grids
5. Ionization timer or photo timer
6. Thermal rating charts
7. Beam centering devices
8. Bridge rectifier
9. Line focus principle
10. Image intensifier
11. Mobile x-ray machine
12. Image intensifier
13. Properties of x-rays
14. Auto transformer
15. Clockwork timer

SHORT ANSWERS **5 x 2 = 10 Marks**

16. Circuit breakers
17. Grid ratio
18. Step wedge
19. Thermionic emission
20. Heel effect

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II Year B.Sc. Radiography Degree Examination – SEP-2018

Time: Three Hours **Max. Marks: 80 Marks**

Radiation Physics & Medical Physics
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Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Explain the properties of alpha, beta and gamma radiations.
2. Explain in detail about rotating anode X-ray tube and fixed anode X-ray tube.
3. Describe in detail about gas fill detectors like ionization chamber, proportional counter and GM counter.

SHORT ESSAYS (Answer any Ten) **10 x 5 = 50 Marks**

4. Explain the radioactive disintegration
5. What are different types of radioisotopes used in medicine? Explain about any two radioisotopes.
6. What is mean by mutual induction and self induction
7. Explain the different types of full wave rectification with necessary diagram
8. Explain about continuous and characteristics x-ray spectrum
9. Define equivalent dose and effective dose
10. Explain in detail Thermoluminescent Dosimeter as a personal monitoring device
11. Explain the principles of scintillation detector with necessary diagram
12. Explain about different types of filters used in X-ray tube
13. What are different types grids used in X-ray imaging? Explain the advantage of use of grid in X-ray imaging
14. Define absorbed dose and kerma
15. Explain the concept of time, distance and shielding

SHORT ANSWERS **5 x 2 = 10 Marks**

16. What is thermionic emission
17. Fluorescence and phosphorescence
18. Ionization and excitation
19. What is mean by insulator and semi-conductor
20. List the different types of personal monitoring devices

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