SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)
February-2017 Examination
B.Sc. Imaging Technology (IMT)

Time : 2.30 Hrs. **[Max. Marks : 80]**

Paper-II

Medical Physics

Q.P Code : AHS-111

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

LONG ESSAY **2 X 10 = 20 Marks**

1. What are grids? Types and uses in modern day X-Ray machines.
2. Describe in detail the X-Ray tube. Describe production of X-Rays.

SHORT ESSAY (Answer any Six) **6 X 5 = 30 Marks**

3. What are the general and special cares for use of mobile X-Ray units?
4. Collimators and uses.
5. Cones and tubes.
6. Image intensifiers.
7. Mammography.
8. Filters and uses.
9. Rectifiers.
10. Fluorescence and phosphorescence.

SHORT ANSWERS (Answer any Ten) **10 X 3 = 30 Marks**

11. Half wave rectifiers.
12. Switch.
13. Exposure timers.
14. Filament circuit.
15. Rotating anode.
16. Cones.
17. Bucky.
18. Filters.
19. Focal spot.
20. Meters in any X-Ray machine.
21. Mammography cassettes.
22. Image intensifier television (IITV).

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Paper-I

Physics of Radiology & Radiation Physics

Q.P. Code : AHS-110

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

LONG ESSAY **2 X 10 = 20 Marks**

1. How do you plan the layout for X-ray unit in a hospital with diagram? How do you achieve personal protection and patient protection?
2. Describe the basic interactions between X-rays and matter. Describe the scattered radiation.

SHORT ESSAY (Answer any Six) **6 X 5 = 30 Marks**

3. Use of photographic film as dosimeter.
4. Thermo luminescent dosimeters.
5. Concept of karma.
6. Scattered radiation.
7. Anode design.
8. Photoelectric effect.
9. Gas filled detectors.
10. Chemical effects of radiation.

SHORT ANSWERS (Answer any Ten) **10 X 3 = 30 Marks**

11. Use of photographic film as dosimeter.
12. Uses of radioactive nuclides in medicine.
13. What is rectification?
14. Uses of semiconductors.
15. What are the methods of cooling of X-Ray tube?
16. What are the principles of dosimeters?
17. Linear energy transfer.
18. Maximum permissible exposure concept.
19. Attenuation coefficient.
20. Compton effect.
21. Types of transformers.
22. Diode.

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