

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year (Semester-III)

July - 2017 Examination

B.Sc. Imaging Technology (IMT)

Time : 2.30 Hrs.

[Max. Marks : 80]

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 Describe in detail about transformers.
- 2 X-ray productions with diagram.

SHORT ESSAY (Answer any Six)

6 X 5 = 30 Marks

- 3 Space charge effect and focusing cup.
- 4 What Compton interaction? Explain the factors that the Compton interaction depends on.
- 5 With neat diagrams explain film badge and pocket dosimeters.
- 6 Give a brief an account of properties of X-rays.
- 7 Define and explain ohm's law.
- 8 Rectifiers.
- 9 Gas filled detectors.
- 10 Stochastic effects.

SHORT ANSWERS (Answer any Ten)

10 X 3 = 30 Marks

- 11 Methods of cooling.
- 12 Filament design.
- 13 Define half life.
- 14 Magnetic induction.
- 15 Charge neutrons and protons.
- 16 Define HVL
- 17 Write any three uses of radiation survey meter.
- 18 Units of dosimeters.
- 19 Radiation protection methods for staffs during working time.
- 20 What are the equipments used for radiation survey.
- 21 Thermionic Emission.
- 22 Step of Transformer.

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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. Describe x-ray tube with diagram.
2. Role of radiographer in radiation protection for patients.

SHORT ESSAY (Answer any Six)

6 X 5 = 30 Marks

3. Advantages and disadvantages of portable and mobile x-ray devices.
4. Magnification radiography.
5. Auto timers.
6. AERB.
7. Principle of image intensifier.
8. Types of grids.
9. Cones.
10. Anode heel effect.

SHORT ANSWERS (Answer any Ten)

10 X 3 = 30 Marks

11. Types of transformer.
12. Screen film contact test.
13. Air gap technique.
14. What are the materials used for target and filtration in mammography machine.
15. Mention common views taken in mammography.
16. Principle of subtraction radiography.
17. Types of X-ray film.
18. What is bucky factor.
19. Fuses.
20. Mention two methods of X-ray production in X-ray tube.
21. Definition of electromagnetic radiation.
22. Role of radiographer in maintenance of dark room.

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