

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH



(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Third Year Semester-V

March 2025 Examination

B.Sc. Radiotherapy Technology (RTT)

Time: 2 Hrs 30 Min

Paper – I

[Max. Marks: 80]

Radiation Physics

Q.P Code: K5580

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

- 1 Define workload, use factor and occupancy factor in shielding calculation for a radiation installation.
Draw a model layout of a Linear accelerator room and discuss the method of thickness calculation for primary and secondary barriers.
- 2 What are the different types of beam modifying devices used in radiotherapy?

SHORT ESSAY

6 X 5 = 30 Marks

- 3 Explain the importance of Multi leaf collimators in radiotherapy
- 4 Write about the Treatment planning system for external beam therapy
- 5 Distinguish between klystron and magnetron
- 6 Write the difference between SSD and SAD. Mention the treatment time calculation formula based on SSD and SAD.
- 7 Explain in detail about Chromosomal aberration and its types
- 8 Define penumbra? And what are the types of penumbra?

SHORT ANSWERS

10 X 3 = 30 Marks

9. Define GTV, CTV and PTV.
10. AERB, BARC, ICRP, WHO, IAEA ,BRIT- write the abbreviation
11. Define percentage depth dose and mention the depend factors
12. What is meant RFA?
13. Write advantages of TLD.
14. Write the Properties of electromagnetic wave.
15. Define Half-life and tenth-life.
16. Write three radionuclides used in medicine.
17. What is the Dose limits to radiation worker and public.
18. Write the Principle of dosimeter

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B.Sc. Allied Health Sciences Third Year Semester-V

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B.Sc. Radiotherapy Technology (RTT)

Time: 2 Hrs 30 Min

Paper – II

[Max. Marks: 80]

Principle and Practice of Radiotherapy

Q.P Code: K5590

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

LONG ESSAY

2 X 10 = 20 Marks

- 1 Explain the principle and functioning HDR remote after-loading machine. Mention the radioactive isotopes it can use & 3 applications
- 2 Planning of 3 field and 4 field techniques for Ca Rectum and mention 3 acute and late complications

SHORT ESSAY

6 X 5 = 30 Marks

- 3 What is Belly board? Where it used and what are its advantages..?
- 4 German helmet technique for whole brain radiotherapy
- 5 Cranio-spinal axis irradiation
- 6 Patient positioning and Immobilization in Head and neck malignancies
- 7 Different types of pre-treatment position verification techniques
- 8 Describe in brief about ICBT

SHORT ANSWERS

10 X 3 = 30 Marks

- 9 Skin care advise during Radiotherapy
- 10 Symptoms of Cervical cancer
- 11 Side effects of Pelvic RT
- 12 Name 3 OARs during Breast Radiotherapy
- 13 Grades of Mucositis
- 14 Standard deviation in statistics
- 15 What is Monophobia
- 16 WHO pain ladder
- 17 Name 3 situations when patient in prone position is advantageous dosimetrically
- 18 Mention common 3 pediatric malignancies

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