Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Radiotherapy Technology Examination – 30-Jul-2021

Time: Three Hours **Max. Marks: 60 Marks**

RADIOTHERAPY PART –II – A
Radiation physics (RS -3)
Q.P. CODE: 2915

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. Describe the positioning and immobilisation devices used during teletherapy.
2. Describe the parts of a modern high energy linear accelerator using a schematic diagram.
3. Explain personal monitoring devices. What are the AERB (Atomic Energy Regulatory Board) recommended dose limitations for occupational workers and general public?

SHORT ESSAYS (Answer any Five) **5 x 5 = 25 Marks**

4. Elementary principles of scintillation detectors.
5. Describe about Electron cone, field shaping in Electron beam therapy and clinical indications of Electron beam therapy.
6. Unsealed radioactive nuclides (Physical properties and clinical applications).
7. Describe briefly about principles of Three-dimensional conformal radiation therapy and procedure of execution.
8. Neutron contamination and protection against neutrons during teletherapy.
9. Total body irradiation.
10. Draw a schematic labelled diagram of conventional X Ray tube.

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

11. Different lasers used in Radiotherapy practice and its uses.
12. Tissue compensators.
13. Sodium Diatrizoate.
14. Define Penumbra and draw schematic diagram to represent Penumbra.
15. Doubling dose.
16. ALARA concept.
17. Multi leaf collimators (MLCs).

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III Year B.Sc. Radiotherapy Technology Examination – 02-Aug-2021

Time: Three Hours **Max. Marks: 60 Marks**

PRINCIPLES AND PRACTICE OF RADIOTHERAPY (RS3)
Q.P. CODE: 2916

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

Section – A

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

1. Writ in detail about the Radiotherapeutic management of a case of ca Prostate with IGRT with emphasis on daily verification.
2. How will you treat a case of lung cancer with radiotherapy using respiratory gating technology?

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

3. Postoperative radiotherapy technique in case of Seminoma testis.
4. Differences between conventional simulator and CT simulator.
5. Treatment of bone metastases and care in handling the patient during Radiotherapy.

SHORT ANSWERS (Answer any Five) **5 x 2 = 10 Marks**

6. Radioactive strontium.
7. DRR.
8. Radiation Proctitis.
9. Tangential fields.
10. Wedges in radiotherapy.
11. Beam direction devices.

Section – B

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

12. What is treatment planning system? Discuss in detail how it has brought revolution in the practice of radiotherapy.
13. What issues are faced in end of life care of patient? What are the needs of patient in end of life and how it is addressed?

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

14. Advantages of 3D CRT over conventional telecobalt therapy.
15. Positioning devices for pelvic radiotherapy.
16. Proton therapy.

SHORT ANSWERS (Answer any Five) **5 x 2 = 10 Marks**

17. Sampling methods in clinical trials.
18. Plaster of paris immobilization.
19. Shielding materials.
20. Side effects of morphine.
21. Breaking bed news to the patient.
22. Bolus and its effect.