Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Radiotherapy Technology Examination – 24-Aug-2020

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. Explain in detail the Isocentric setup and design of a LINAC unit.
2. Explain the interaction of X-rays with matter.
3. Explain in detail the source drawers in a CO60 teletherapy limit.

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

4. Geiger muller detector
5. Penumbra
6. Photodynamic therapy
7. Application of SBRT
8. Thermoplastic mould and moulding principles
9. Measurement and limits used in radiation
10. Breast Cone

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

11. Port film
12. Compensators
13. Contrast media
14. Integral dose
15. Hyperbaric oxygen
16. Therapeutic ratio
17. ALARA

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III Year B.Sc. Radiotherapy Technology Examination – 26-Aug-2020

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

Principles & 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. Describe in detail the process involved n radiotherapy planning of a patient with brain tumor.
2. Discuss the radiotherapy management of post lumpectomy right breast cancer.

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

3. Intra operative radiotherapy
4. Techniques of TBI
5. Virtual simulation

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

6. Seminoma
7. Sublethal damage
8. Radiation safety devices in teletherapy
9. Brachytherapy sources
10. Daily QA in LINAC
11. Bone tumors

Section – B

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

12. Explain palliative care of a adult cancer patient and importance of cancer planning and follow up.
13. Describe the various Brachytherapy techniques employed and their clinical application.

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

14. Cell survival curve
15. Pediatric radiotherapy
16. Randomized trials

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

17. Strontium applications
18. Morphine
19. Tomotherapy
20. Oral care in head and neck radiotherapy
21. Wedges
22. Cisplatin

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Radiotherapy Technology Examination – 10-Dec-2020

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 biological effects of Radiation.
2. Describe the different methods of treatment verification during external beam radiotherapy and correction of patient setup errors.
3. Define Brachytherapy. How do you classify Brachytherapy? Enumerate the most common radioactive sources used in Brachytherapy.

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

4. Port films.
5. Tomotherapy.
6. Linear Accelerator Bunker room design.
7. Adaptive Radiotherapy.
8. What are the daily quality assurance (QA) procedures for a linear accelerator?
9. CT (Computed Tomography) simulator.
10. Compton scattering.

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

11. Labelled diagram of collimators in Linear Accelerator.
12. Secondary electrons and practical importance.
13. Caesium 137 (Decay pattern, half life and therapeutic application).
14. Pocket Dosimeter.
15. Breast Cone.
16. Bremsstrahlung effect.
17. Define Radiosensitisers with two examples.

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Rajiv Gandhi University of Health Sciences, Karnataka

III Year B.Sc. Radiotherapy Technology Examination – 14-Dec-2020

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. Prepare for simulation procedure that is scheduled for a 3 year old child under anesthesia. Elaborate on the prerequisites and the precautions during planning for Radiotherapy.
2. Explain preparation, planning and treatment delivery with QA for 3D CRT Head and Neck.

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

3. Importance of review the RT chart during the patient under radiation.
4. Steps involved in preparing patient for Brachytherapy.
5. ILBT.

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

6. Prone breast board.
7. Shrinking field technique.
8. Steps involved in preparing a patient for Brachytherapy.
9. VMAT.
10. CT simulation for ca esophagus.
11. PORT film.

Section – B

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

12. The role of a technologist during IMRT treatment for Ca. Nasopharynx – explain in detail including patient preparation, patient set up, chart checking and verification.
13. Advantages and Challenges of image Guided Radiation Therapy.

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

14. Steps involved in Research and publication.
15. Safety practicing in radiotherapy.
16. Steps involved in sources disposal.

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

17. Data Handling.
18. EPID.
19. Institutional relevant board.
20. DVH.
21. Stress management of cancer patient.
22. Treatment time scheduling.

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