Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – MAR/APR 2017

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

RADIOTHERAPY PART –II – A
Radiation physics (RS -2)
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 functioning of the Linear Accelerator. Why is it preferred over the Tele cobalt machine?
2. Discuss in detail Biological effects of Radiation.
3. Discuss construction, measurement, testing and properties of small sealed sources.

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

4. Workload, use factor and occupancy factor
5. IGRT: Principle, procedure and treatment delivery
6. Chemical effects of radiation
7. Gas filled detectors
8. Stereotactic radiotherapy and radiosurgery
9. Physical characteristics of photon beams: PDD, TPR, TMR
10. Immobilization and simulation for Ca Nasopharynx

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

11. Dose limits for public and radiation workers
12. Wedges and compensators
13. Roentgen and rad
14. Doubling dose
15. Use of CT and MR images
16. Beam quality and HVT
17. Brachytherapy: briefly discuss ILRT

Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – APRIL 2017

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

Principles & Practice of radiotherapy (RS2)

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 the management of Prostate cancer.
2. Describe the clinical application of total body irradiation treatment.

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

3. Describe the management of Pediatric Malignancies.
4. Brief about intra-operative radiotherapy
5. Describe the use of radiation protectors in radiotherapy.

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

6. Brief the causes for Gynecological cancers.
7. How do you verify the treatment portal in Telecobalt machine?
8. Define Isocentre.
9. What is conformal beam therapy?
10. Describe the advantage and disadvantages of thermoplastic mask.
11. What is the technique used for conventional breast treatment?

Section – B

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

12. Discuss about various rehablition program for cancer patients.
13. Describe the psychological problem of cancer patient and role of counseling skills in cancer care.

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

14. Define mean, median and mode.
15. What is Stress and Stress management of cancer patient?
16. How to manage the patient with Tracheostomy?

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

17. How to manage the Patients with Spinal cord injury during radiotherapy?
18. Why patient consent is required for radiotherapy treatment?
19. Hospice
20. Radiation Sensitizer
21. Cyber Knife
22. What are the easy way of patient data handling?

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – SEP-2017

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

RADIOTHERAPY PART –II – A
Radiation physics (RS -2)
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. What is IGRT, various techniques and uses of IGRT?
2. Definition of target volumes and their significance in radiotherapy
3. Production of electrons by linear acceleratory and their clinical usage

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

4. Beam direction devices
5. Immobilization of patient
6. What are possible errors during radiotherapy planning and delivery and how to avoid them?
7. Beam modifying devices
8. Uses of fluoroscopy during simulation
9. Explain direct and indirect actions of radiation.
10. Personal monitoring devices

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

11. Isodose curve
12. Contamination monitors
13. Roentgen and RAD
14. TLD
15. HVL
16. Radio surgery
17. Caesium - 137

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – SEP 2017

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

Principles & Practice of radiotherapy (RS2)

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 the management of head and neck tumours.
2. Describe the use of conventional field SSD, SAD and rotational techniques.

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

3. Management of lung cancer
4. Describe the use of radiation sensitizers in radiotherapy.
5. Describe the difference between simulator and CT simulator.

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

6. What is Lymphoma?
7. What are the common brain tumours?
8. Describe the advantages of vace-lock.
9. Why combination of Teletherapy and Brachytherapy treatment is required for carcinoma cervix patient?
10. What is SRS and SRT?
11. What is EPID?

Section – B

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

12. Describe about the management of Pediatric patient.
13. Describe about Tomotherapy unit.

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

14. Explain about Cardiopulmonary resuscitation procedures.
15. Brief the importance of play therapy for children.
16. How the patient data is maintained in the medical records department?

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

17. What is institutional review board?
18. What are the support groups in cancer care?
19. Brief the role of MCI.
20. Safety measures in IMRT treatment
21. Particle Beam Therapy
22. Gamma knife

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