Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – AUG/SEP 2016

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. Explain the interactions between X Rays with matter.

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

4. Radiation protection, ADEL and ALARA
5. IMRT: Principle, procedure and treatment delivery
6. Explain Stochastic and Deterministic effects with examples.
7. Survey meters and Gamma zone monitors: principle and working
8. Beam modifying devices
9. Photodynamic therapy
10. Immobilization and Simulation Procedure for Ca Oesophagus Upper 1/3rd

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

11. Doubling dose
12. Portal imaging
13. Roentgen and rad
14. Hypothermia
15. IORT
16. Beam quality and HVT
17. Bolus materials

Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – SEP -2016

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 role and treatment technique of IMRT in Brain tumour.
2. Discuss the pathology and management of breast cancer.

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

3. Virtual simulation
4. Discuss radiation safety in brachytherapy
5. Multi Leaf Collimators (MLC)

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

6. Radiation protectors
7. Advantages and disadvantages of post operative RT
8. Hospice
9. Inverted Y field
10. Sources used in Brachytherapy
11. ALARA

Section – B

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

12. Describe the psychosocial problems of a cancer patient and the role of counseling skills in cancer care, mention on quality of life and end care management.
13. Describe emergencies in oncology and their management with radiotherapy.

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

14. Biomedical waste management
15. Bring out the importance of play therapy for children.
16. Discuss in detail about TBI.

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

17. Thermoplastic device
18. Dynamic wedge
19. Amifostine
20. Gamma knife
21. Gross tumour volume
22. Chromosomal aberration

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III year B.Sc. Radiotherapy Technology Examination – May 2016

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. Describe biological effects of radiation.
2. Explain model X-ray tube, factors influencing the intensity and quality of X-ray.
3. Explain personal monitoring devices.

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

4. Physical properties of brachytherapy sources
5. Explain LDR v/s HDR.
6. Explain beam modifying devices and beam directional devices.
7. Explain daily QA in linear accelerator.
8. Explain single, parallel and multiple field technique.
9. Isodose charts
10. Pair production

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

11. TLD
12. Tomotherapy
13. ALARA
14. HVL
15. Iridium-192
16. Mould brachytherapy
17. Penumbra

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III year B.Sc. Radiotherapy Technology Examination – May 2016

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 role of a Radiographer in Brachytherapy for Carcinoma of Cervix using manual after loading method.
2. Describe the importance of treatment position and treatment setup during simulation and treatment with IMRT. What are the general guidelines to be followed while positioning the patient?

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

3. Describe in brief the technique used for simulation of Hodgkin's disease and preparation of block for Mantle RT.
4. Describe in brief the patient positioning and precautions to be taken for Craniospinal irradiation.
5. EPID

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

6. ILBT (Intraluminal Brachytherapy)
7. Use of Breast cone
8. DVH (Dose Volume Histogram)
9. Outline how you would prepare a lead cut-out to treat a patient with 9mev electron beam.
10. CHART (continuous hyper fractionated accelerated radiotherapy)
11. Radiation proctitis

Section – B

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

12. Describe the psychological problems of cancer patient and role of counseling skills in cancer care
13. Write an essay on the radiotherapeutic management of tumors in children. Add a note on parent counseling.

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

14. What are the advantages and disadvantages of conformal RT in comparison To Tele-cobalt?
15. National cancer control program
16. ALARA

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

17. IGRT
18. Cisplatin
19. Targeted therapy
20. Forward planning
21. Randomization in clinical trails
22. Use of contrast in simulation for radiotherapy

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