Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – Aug 2013

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 the principle and functioning of a HDR Machine and draw diagrams of the source loading methods
2. Describe the principle and functioning of a Dual energy Linear Accelerator Machine and the radiation safety devises
3. Describe the principle and design of Teletherapy bunker for a low energy linear accelerator and the radiation protection and safety features

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

4. Write briefly on the Radiation Safety measures to be adopted in the event of source getting stuck in a HDR brachytherapy machine
5. Write briefly on Roentgen to rad conversion
6. What is a Simulator X –ray machine, explain the principles with diagram
7. Write briefly on the monitoring and management of equipments related to control panel, safety devices and interlocks, electricity and temperature maintenance of a Telecobalt machine
8. Write briefly on procedure of Molud room procedures for brain tumours
9. Write briefly on QA procedure for 3DCRT & IMRT
10. Write briefly on calculation of treatment time in a telecobalt machine

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

11. Portal imaging technique's
12. Total body electron irradiation
13. Isodose curves
14. Percentage depth dose
15. SI unit : Gray
16. SI unit : Roentgen
17. SI unit : Bequerel

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – Aug 2013

Time: Three Hours Max. Marks: 60 Marks

PRINICPLES & PRACTICE OF RDIOTHERAPY

(RS -2)

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. Discuss the multi modality management of carcinoma anterior tongue
2. Describe the role and treatment technique of IMRT in carcinoma prostate

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

3. Intra luminal Brachytherapy
4. Management of skin cancer
5. Pet scan cancer management

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

6. Immobilization devices
7. Advantages and disadvantages of postoperative radiotherapy
8. Hormone therapy in carcinoma breast
9. Biological response modifiers
10. Stereo tactic radiotherapy
11. CHART – in head & neck cancers

Section – B

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

1. Discuss the various rehabilitation programs for cancer patients
2. Describe the psychosocial problems of a cancer patient and the role of counseling skills in cancer care

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

3. Define statistics and its methodologies
4. Explain the aseptic technique used in OT to prevent infection
5. Bring out the importance of play therapy for children

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

6. Institutional review board
7. Physicians role in disclosure to cancer patients
8. Support group in cancer care
9. Amifostine
10. Tracheostomy care
11. Safety measures in IMRT treatment

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – Mar 2013

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 the principle and functions of a Telecobalt Machine and draw diagrams of the source loading methods
2. Describe the principle and functioning of a High energy Linear Accelerator Machine and the radiation safety devises
3. Describe the principle and functioning of a Ir – HDR Brachytherapy Machine and the safety devises

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

4. Write briefly on the Radiation Safety measures to be adopted in the event of source getting stuck in a Teleobalt
5. Write briefly on patient direct and indirect action of radiation
6. What is a Simulator, explain the principles with diagram
7. Write briefly on the monitoring and management of equipments related to control panel, safety devices and interlocks, electricity and temperature maintenance of a HDR brachytherapy machine
8. Write briefly on procedure of digital X – ray films and archiving
9. Write briefly on QA procedure for 3 DCRT
10. Write briefly on virtual simulation of patient with oral cancer

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

11. Portal imaging for IMRT
12. Total body irradiation
13. Isodose curves
14. Wedges
15. Focal spot
16. SSD
17. Geiger muller counter

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Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – Mar 2013

Time: Three Hours Max. Marks: 60 Marks

PRINICPLES & PRACTICE OF RDIOTHERAPY

(RS -2)

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 in Radiotherapy planning of a patient with Brain Tumor. Elaborate on the Mould room technique used and simulation techniques used
2. Describe in detail the process involved in Radiotherapy planning of a patient with Breast Cancer. Elaborate on the Mould room techniques used and simulation techniques used

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

3. Intra operative radiotherapy
4. Palliative radiotherapy
5. Emergency in radiotherapy

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

6. Hemibody Radiotherapy
7. Contouring methods
8. Virtual simulation
9. Gamma knife
10. Radon
11. Seminoma

Section – B

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

1. Describe the Radiotherapy Fractionation schedules and rationale. What are the schedules used in Teletherapy and Brachytherapy of cancer cervix
2. Describe in detail the process of CT simulation for 3D conformal radiotherapy. What are the mould room techniques used for patient positioning for 3DCRT of Brain tumor

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

3. Sedation during radiotherapy and the safety of patient during radiotherapy
4. IMRT
5. Radiation safety principles to be followed during HDR Brachytherpy

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

6. Rapid arc
7. Hemoglobin
8. Chemotherapy
9. Amifostine
10. Portal imaging methods
11. Bite block

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