Rajiv Gandhi University of Health Sciences, Karnataka

III year B.Sc. Radiotherapy Technology Examination – Aug / Sep 2011

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 the management of Medulloblastoma and techniques of cranio spinal irradiation
2. Discuss the management of carcinoma cervix stage – III

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

3. Techniques of TBI
4. Quality assurance procedures before IMRT
5. Proton beam radiotherapy in head & neck cancers

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

6. Cerro bend blocks
7. C T – simulator in RT planning
8. Mantle field
9. Chemotherapy in Gliomas
10. Gating techniques in radiotherapy of lung cancer
11. Cetuximab in solid tumors

Section – B

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

1. Explain palliative care of a adult cancer patient and importance of cancer planning & follow-up
2. Describe psychosocial problems of cancer patients and how do you support in managing their illness

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

3. Cyberknife
4. Hospice
5. Steps involved in formulation of a research study

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

6. Radioactive waste material disposal
7. Keeping patients diagnosis in confidentiality
8. Self – help groups
9. Complemenatary therapies
10. End of life issues
11. Differentiate between verbal and non verbal communication

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III year B.Sc. Radiotherapy Technology Examination – Aug / Sep 2011

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. Define percentage depth dose and tissue maximum ratio and explain about the different parameters which influence them
2. explain the different principles by which radiation can be measured
3. Describe the various steps involved in treatment planning of intensity modulated

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

4. What is a wedge and explain different types of wedge used for radiotherapy
5. Explain the skin sparing effect in megavoltage therapy
6. Define the different ICRU target volumes and their significance in planning
7. What is an isodose chart and what are the different factors which influence them
8. What is a simulator and explain the simulation procedures for tumor localization and verification
9. What is high dose rate Brachytherapy and state how it differs from LDR treatments
10. How can you minimize radiation exposure to public and radiation workers in a radiotherapy department

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

11. Multi leaf collimators
12. Tissue phantom ratio
13. Breast cone
14. Electron cone
15. Sliding window IMRT
16. ALARA
17. TLD badge

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Rajiv Gandhi University of Health Sciences, Karnataka

Third year B.Sc. Radiotherapy Technology Examination – Feb/March 2011

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. Define percentage depth dose and tissue maximum ratio and explain about the different parameters which influence them
2. Explain the significance of patient immobilization and how it is achieved. Write about the different methods by which patient positioning can be verified
3. Write in detail about the principle and functioning of a Tele – cobalt machine. Mention the advantages of Linear Accelerator compared to a Telecobalt unit.

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

4. Briefly write about the manual and remote controlled Brachy therapy
5. What is a wedge and explain about the different types of wedges in radiotherapy
6. What do you mean by a CT simulator and why it is used
7. What is an isodose chart and what are the different factors which influence them
8. How can you minimize radiation exposure to public and radiation worker in a Radiotherapy department?
9. Write a brief note about Total body irradiation
10. What is meant by stochastic and non – stochastic effect?

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

11. Multi Leaf Collimators
12. Low melting point Alloy
13. Penumbra
14. Lasers
15. Bolus materials
16. Electron cones
17. ALARA

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Rajiv Gandhi University of Health Sciences, Karnataka

Third year B.Sc. Radiotherapy Technology Examination – Feb/March 2011

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 oral cancer. Elaborate on the Mould room techniques used and simulation techniques used and simulator techniques used
2. Describe in detail the process involved in Radiotherapy planning of a patient with caner Cervix. Elaborate on the Mould room technique used and simulator techniques used

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

3. Describe in brief an Intracavitory brachytherapy procedure its simulation procedure
4. Describe in brief the technique used for simulation of Hodgkin's disease with Mantel RT planning techniques
5. Describe in brief the patient positioning and precautions to be taken for Craniospinal irradiation

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

6. Mould
7. ILBT
8. Target volume
9. Normal tissue shielding methods
10. Use of Breast cone
11. SRS

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 Oesophagus
2. Describe the emergency procedure to be followed by the Technologist in a Telecobalt Machine when the source get stuck during treatment of a patient

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

3. Describe the normal tissues to be shielded and methods used in shielding in Head and Neck cancer in patient treated on Telecobalt machine
4. What are the advantages & disadvantages of conformal RT in comparison to Telecobalt
5. Describe in detail the process of CT simulation for 3 Dconformal radiotherapy. What are the mould room techniques used for patient positioning for 3DCRT of Bone tumour

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

6. Informed cosnsent
7. ALARA
8. IGRT
9. Amifostine
10. Cyberknife
11. Cisplatin

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