Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Radiotherapy Technology Degree Examination – SEPTEMBER 2015

Time: Three Hours | Max. Marks: 60 Marks

RADIOTHERAPY (Part– I – A)

FUNDAMENTAL OF PHYSICS (RS - 2)

Q.P. CODE: 1356

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 the basic interaction of X and gamma radiation with matter.
2. Construction and working of rotating and fixed anode X ray tubes
3. Explain A.C. transformer construction and its working principles.

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

4. Thermionic emission
5. Mutual induction and self-induction
6. Advantage of semiconductor device over thermionic devices
7. Principles of nuclear reactor
8. Linear energy transformer - Explain about low and high LET radiations.
9. Define equivalent dose and effective dose.
10. Radioactive nuclides used in medicine.

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

11. Fluorescence and phosphorescence
12. Inverse square law
13. Units of Radioactivity
14. Resistance
15 Focal spot size
16. HVL
17. Absorbed dose

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Radiotherapy Technology Degree Examination – APRIL 2015

Time: 3 Hours Max. Marks: 30 Marks

Radiation Biology, Applied Anatomy and Pathology

Q.P. Code: 1357

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 1357 and 1358 are to be answered within total duration of 3 hours)

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

1. Discuss the varieties of paediatric tumours and their treatment.
2. Discuss the effects of radiation on embryo and foetus. What are hereditary effects?

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

3. Total body irradiation: dosage and acute effects
4. Histology based classification of neoplasia
5. Pathology of Oesophageal cancer

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

6. Malignant tumours
7. TNM classification
8. Chromosomal aberration
9. ALARA
10. Risk estimate for Prostate cancer
11. OER

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Radiotherapy Technology Degree Examination – SEPTEMBER 2015

Time: 3 Hours Max. Marks: 30 Marks

Radiation Biology, Applied Anatomy and Pathology

Q.P. Code: 1357

Your answers should be specific to the questions asked.

Draw neat, labeled diagrams wherever necessary

(Note: Both QP Codes 1357 and 1358 are to be answered within total duration of 3 hours)

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

1. Discuss head and neck cancers, with special reference to Ca Nasopharynx.
2. Explain radiation carcinogenesis, histological classification of neoplasia and its spread.

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

3. Re-oxygenation and OER
4. Time, dose and fractionation
5. DNA strand breaks and chromosomal aberrations

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

6. LET
7. Cataractogenesis
8. Anatomic landmarks for radiotherapy of Ca Breast
9. Cancer staging
10. Relative Biologic Effectiveness
11. Hyper fractionation

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Radiotherapy Technology Degree Examination – APRIL 2015

Time: 3 Hours | Max. Marks: 30 Marks

Principles of Radiotherapy

Q.P. Code : 1358

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary
(Note : Both QP Codes 1357 and 1358 are to be answered within total duration of 3 hours)

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

1. Explain in detail TNM staging.
2. Describe the pathology of cancer Esophagus and RT planning technique.

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

3. Acute and late effects of radiation treatment
4. Explain altered fractionation.
5. Describe anatomy of Testis and pathology of seminoma testis.

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

6. Bladder cancers
7. Tumor spread
8. Role of sedation and anesthesia in radiation treatment
9. Radiation protection
10. Simulation
11. Physical effects of tumor

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Radiotherapy Technology Degree Examination – SEPTEMBER 2015

Time: 3 Hours Max. Marks: 30 Marks

Principles of Radiotherapy

Q.P. Code : 1358

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary

(Note : Both QP Codes 1357 and 1358 are to be answered within total duration of 3 hours)

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

1. Describe the Natural history and spread of Cancer.
2. Explain the Radiation effects on skin-Acute and late.

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

3. Explain the steps in treatment setup for carcinoma of anterior 2/3rd Tongue for Telecobalt.
4. Virtural Simulation
5. Outline the Precautions you take during postoperative radiotherapy treatment of 4 years old child suffering from Brain tumour.

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

6. Radiosensitizer
7. Tumor Makers
8. LET
9. OER – factors affecting it.
10. Post operative Radiotherapy.
11. Hyperbaric Oxygen

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