Rajiv Gandhi University of Health Sciences, Karnataka

M.D. Degree Examination – 02-Jan-2025

Time: Three Hours **Max. Marks: 100 Marks**

Radiotherapy - PAPER – I (RS-2/RS-3)
Applied Anatomy, Pathology, Radiation Physics, Radio Biology
Q. P. CODE: 7481

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

Answer All The Questions **10 x 10 = 100 Marks**

1. Describe 'Reoxygenation' and its importance in radiation therapy.
2. Define percentage depth dose and factors affecting it in radiotherapy.
3. Discuss mechanism of production of X-rays.
4. Discuss the rationale for accelerated fractionation in radiation therapy.
5. Thermoluminescent dosimetry.
6. Radioisotopes for HDR brachytherapy.
7. Describe the lymph node drainage of breast, pathology and molecular classification in Breast cancer.
8. ICRU 38 in cervix brachytherapy.
9. Describe the design of a linear accelerator.
10. Stochastic and deterministic effects of radiation.

M.D. Degree Examination – 04-Jan-2025

[Time: 3 Hours] [Max. Marks: 100]

RADIATION ONCOLOGY – PAPER – II (RS-2/RS-3)
Principles & Practice of Chemotherapy in Malignant Diseases, Preventive Oncology, Palliative Care
Q. P. CODE: 7482

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

Answer All The Questions **10 X 10 = 100 Marks**

1. Cancer breast screening.
2. Staging and management of carcinoma ovary.
3. Pain management in Cancer.
4. Dose dense chemotherapy in cancer breast.
5. Temozolamide.
6. Targeted agents used in colon cancer.
7. Management of Bone metastasis.
8. Treatment of stage III non-small cell lung cancer.
9. Chemotherapeutic management of nasopharynx cancer.
10. Langerhans cell histiocytosis.

Rajiv Gandhi University of Health Sciences, Karnataka

M.D. Degree Examination – 06-Jan-2025

[Time: 3 Hours] [Max. Marks: 100]

RADIATION ONCOLOGY - PAPER- III (RS-2/RS-3)

General Principles of Radiotherapy and Oncology,
Principles and Practice of Radiotherapy of skin, Head & neck,
Central and Peripheral Nervous System, GI Tract Tumors.

Q. P. CODE: 7483

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

Answer All The Questions **10 X 10 = 100 Marks**

1. Draw a contour (Tumour volume and organs at risk) for a patient being treated for carcinoma of vocal cord T1N0M0 using opposed lateral along with beam portals and isodose curves 100%, 95% and 50%.

2. Discuss molecular genetics and targeted therapy for brain tumours.

3. Describe the role of chemoradiation in the management of rectal malignancies.

4. Give an account of the predisposing factors and diagnostic evaluation of hepatocellular carcinoma. Discuss in detail treatment modalities available for Hepatocellular carcinoma.

5. How would you investigate and treat a patient of carcinoma esophagus middle third. Explain various techniques of radiation.

6. Human papilloma virus relevance in oncology. Describe Kaposi's sarcoma.

7. Management of meduloblastoma.

8. Describe field cancerisation and cancer prevention

9. Chemo Irradiation in Carcinoma Anal Canal.

10. Acoustic neuroma (Vestibular Schwannoma).

M.D. Degree Examination – 08-Jan-2025

[Time: 3 Hours] [Max. Marks: 100]

RADIATION ONCOLOGY - PAPER- IV (RS-2/RS-3)

Principle and Practice of Radiotherapy of Thoracic Region,
Including Breast, Genito Urinary System, Lymphoreticular System,
Musculo-Skeletal System and Paediatric Tumors

Q. P. CODE: 7484

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

Answer All The Questions **10 X 10 = 100 Marks**

1. The role of chemotherapy and radiotherapy in the management of Lymphomas.

2. Epidemiology, staging and prognostic factors in Carcinoma Cervix. Describe in detail conventional and advanced treatment technique in carcinoma cervix stage IIIB.

3. What are the methods of APBI in practice? What are the patient selection criteria for APBI?

4. Discuss the role and technique of permanent interstitial brachytherapy and IMRT (Intensity Modulated Radiation Therapy) in carcinoma prostate.

5. Explain Lymphatic drainage of Penis. How would you manage a middle-aged man with early penile cancers?

6. Breast conservation therapy

7. Management of Retroperitoneal Tumors

8. Role of PET scan in Oncological practice
9. Management of Solitary Plasmacytoma and role of RT in multiple myeloma.
10. Rhabdomyosarcoma in Paediatrics.

M.D. Degree Examination – 26-May-2025

Time: Three Hours **Max. Marks: 100 Marks**

RADIATION ONCOLOGY - PAPER – I (RS-2/RS-3)
Applied Anatomy, Pathology, Radiation Physics, Radio Biology
Q. P. CODE: 7481

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

Answer All The Questions **10 x 10 = 100 Marks**

1. Personnel monitoring devices in radiotherapy practice.
2. Target dose.
3. Beam modifying devices.
4. Altered fractionation and describe in detail any two.
5. Radioprotectors.
6. Anatomy and lymphatic drainage of tongue.
7. Classify lymphoma and describe pathological characteristic of Hodgkin’s lymphoma.
8. Iridium 192.
9. Total body irradiation.
10. Checkpoints in cell cycle.

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M.D. Degree Examination – 28-May-2025

Time: Three Hours **Max. Marks: 100 Marks**

RADIATION ONCOLOGY - PAPER- II (RS-2/RS-3)
Principles and Practice of Chemotherapy in Malignant Diseases, Preventive Oncology, Palliative Care
Q. P. CODE: 7482

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

Answer All The Questions **10 x 10 = 100 Marks**

1. The role of chemotherapy in curative treatment of head and neck cancers – Discuss.
2. List the levels of evidence. What is meta-analysis? Explain meta-analysis with an example.
3. What are the complications of chemotherapy? How will you manage a case of neutropenic fever?
4. What is cancer prevention and elaborate various steps to be taken in cancer prevention.
5. Discuss oncologic emergencies and their management by chemotherapy and radiation.
6. Define cancer screening and explain cancer cervix screening.
7. Tumor lysis syndrome.
8. What is Chemo port? Hormone therapy and Breast cancer.
9. Classify chemotherapeutic agents and explain Cisplatin role.
10. Explain pain ladder and describe narcotic analgesics.

Rajiv Gandhi University of Health Sciences, Karnataka

M.D. Degree Examination – 30-May-2025

[Time: 3 Hours] [Max. Marks: 100]

RADIATION ONCOLOGY - PAPER- III (RS-2/RS-3)

General Principles of Radiotherapy and Oncology,
Principles and Practice of Radiotherapy of skin, Head & neck,
Central and Peripheral Nervous System, GI Tract Tumors.

Q. P. CODE: 7483

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

Answer All The Questions **10 X 10 = 100 Marks**

1. Describe total skin electron therapy – indications and techniques.
2. Describe target volume delineation in Nasopharyngeal carcinoma. Enumerate the various OARS in radiation planning for nasopharyngeal cancer and their dose constraints.
3. Management of intracranial Germinoma.
4. Role of radiation therapy in atypical Meningioma.
5. Discuss the role of adjuvant radiotherapy in Gastric cancer.
6. Discuss late effects of radiation on Kidneys and enumerate the radiation tolerance doses for kidneys.
7. Discuss indications and strategies for wait and watch in rectal cancer management.
8. Discuss latest AJCC staging recommendations in oral cancers. What are the indications for adjuvant RT in Ca Anterior Tongue?
9. Risk stratification and management of gastro-intestinal stromal tumors.
10. Discuss indications and protocols for adjuvant radiotherapy in low grade Gliomas.

M.D. Degree Examination – 02-Jun-2025

Time: Three Hours **Max. Marks: 100 Marks**

RADIATION ONCOLOGY - PAPER- IV (RS-2/RS-3)

Principle and Practice of Radiotherapy of Thoracic Region,
Including Breast, Genito Urinary System, Lymphoreticular System,
Musculo-Skeletal System and Paediatric Tumors

Q. P. CODE: 7484

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

Answer All The Questions **10 x 10 = 100 Marks**

1. Discuss the indications and methods of Accelerated partial Breast Radiotherapy.
2. Discuss the management strategies and the role of radiotherapy for Stage I carcinoma of the cervix.
3. Treatment of Diffuse Large B- cell lymphoma.
4. Genetic testing for cancer susceptibility.
5. Prostate cancer Screening.
6. Radiotherapy in Wilm’s tumour.
7. Use of Chemotherapy during pregnancy.
8. Thymoma.
9. Extra Corporeal irradiation.
10. Internal mammary irradiation for Ca Breast.

Rajiv Gandhi University of Health Sciences, Karnataka

M.D. Degree Examination – 24/Sep/2025

Time: Three Hours **Max. Marks: 100 Marks**

RADIATION ONCOLOGY - PAPER – I (RS-2/RS-3)
Applied Anatomy, Pathology, Radiation Physics, Radio Biology
Q. P. CODE: 7481

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

Answer All The Questions **10 x 10 = 100 Marks**

1. Describe in detail the site plan and safety aspects in construction and installation of the Cobalt therapy unit in your hospital.
2. Draw and explain the Mammalian cell survival curve. Write about the mathematical models describing the cell survival curve.
3. Briefly describe oxygen enhancement ratio and ways to overcome hypoxia. What is the importance of oxygen in the action of radiation?
4. Physical properties of Electron beam and Protons and its clinical applications.
5. Write a detailed note on molecular pathophysiology of tumours.
6. Lymphatic drainage of tongue and role of organ and functions preservation in oncology.
7. Recent advances in precision radiation.
8. **QUANTEC-clinical application**
9. Acute and Late effects of radiation in children.
10. Explain thimble chambers and other dosimetric equipments.

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MD Degree Examination – 26/Sep/2025

Time: Three Hours **Max. Marks: 100 Marks**

RADIATION ONCOLOGY - PAPER- II (RS-2/RS-3)
Principles & Practice of Chemotherapy in Malignant Diseases, Preventive Oncology, Palliative Care
Q. P. CODE: 7482

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

Answer All The Questions **10 x 10 = 100 Marks**

1. Explain complications and methods to prevent complications in Pelvic Radiation therapy.
2. a) Metronomic Chemotherapy b) **Craniopharyngioma**.
3. Short notes – a) Gleason's Score b) BIRADS Score.
4. How do you manage pain due to Bone Metastasis?
5. Short notes on – a) Plasmacytoma b) **Naso Pharyngeal Angiofibroma**.
6. Write about HPV Infection and Vaccination against HPV.
7. Short notes on – a) Tumor Lysis Syndrome b) Osteo Radio Necrosis.
8. Short notes on – a) Temozolamide b) Geftinib.
9. Write about – a) Intra luminal Brachytherapy b) Endo vascular Brachytherapy.
10. Role of Chemo prevention in Cancer.

Rajiv Gandhi University of Health Sciences, Karnataka

M.D. Degree Examination – 29/Sep/2025

[Time: 3 Hours] [Max. Marks: 100]

RADIATION ONCOLOGY - PAPER- III

General Principles of Radiotherapy and Oncology,
Principles and Practice of Radiotherapy of skin, Head & neck,
Central and Peripheral Nervous System, GI Tract Tumors.

Q. P. CODE: 7483

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

Answer All The Questions **10 X 10 = 100 Marks**

1. Management of Medulloblastoma.
2. Tolerance dose and its clinical importance of i) Parotid ii) Heart iii) Spinal Cord iv) Skin
3. Radiation therapy in thyroid malignancy.
4. Classify meningioma and management of recurrent meningomas.
5. Linac based stereotactic radiotherapy.
6. Acute and chronic effect of brain irradiation.
7. Management of Lower one third carcinoma esophagus.
8. Radiation techniques in cancer maxillary antrum.
9. Brachytherapy in carcinoma tongue right lateral border T2N0M0.
10. Proton therapy in current practice.

M.D. Degree Examination – 03/Oct/2025

Time: Three Hours **Max. Marks: 100**

RADIATION ONCOLOGY - PAPER- IV

Principle and Practice of Radiotherapy of Thoracic Region,
Including Breast, Genito Urinary System, Lymphoreticular System,
Musculo-Skeletal System and Paediatric Tumors

Q. P. CODE: 7484

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

Answer All The Questions **10 x 10 = 100 Marks**

1. Indications for Adjuvant Radiotherapy in Carcinoma Breast after mastectomy and explain Radiotherapy technique of for Left Chest wall.
2. Describe management of Squamous cell carcinoma of bladder T2 N1 M0.
3. How do you manage Carcinoma Cervix during pregnancy?
4. Short notes on – a) CA 125 b) Plasmacytoma
5. Explain the evaluation and management of Adeno Carcinoma of Left Supra Clavicular lymph node in a Female.
6. Short notes on – a) Management of Liver Metastasis b) SRS in Benign CNS tumors
7. Write about classification of Bone Tumors and how do you treat a 10-month-old boy with Osteo sarcoma.
8. Short notes on – a) Lung bath b) Glomus tumor
9. Explain Pathological classification of Ovarian tumors. Explain about the Radiotherapy techniques in ovarian carcinoma.
10. a) Intra Operative Radiotherapy b) Hemostatic irradiation

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