

## MANIPAL UNIVERSITY

MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2010

SUBJECT: PAPER I: BASIC SCIENCES IN RELATION TO RADIOTHERAPY

Monday, April 05, 2010

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Draw neat labeled diagrams wherever necessary.

1. Describe the anatomy and lymphatic drainage of Uterus. Stage carcinoma of uterine cervix and discuss its clinical presentation.

(20 marks)

2. Expand OER, LET and RBE. Discuss in detail the relationship between them.

(20 marks)

3. Write in detail about lymphatics of tongue. How do you manage stage T2 NO MO carcinoma of left lateral border tongue?

(20 marks)

4. Write short notes on:

- 4A. Hypofractionation  
4B. Radiation cataractogenesis  
4C. S-phase fraction  
4D. NSD

(40 marks)



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## MANIPAL UNIVERSITY

MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2010

SUBJECT: PAPER II: PHYSICS, NUCLEAR MEDICINE AND STATISTICS

Tuesday, April 06, 2010

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

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1. Describe in detail the quality assurance program to be followed for a Linear accelerator used in a radiotherapy department.  
(20 marks)
2. Describe in detail the various radiotherapy techniques used in the management of carcinoma prostate. Mention the prognostic factors.  
(20 marks)
3. Discuss in detail “Wedge Filters” and wedge field techniques.  
(20 marks)
4. Write short notes on:
  - 4A. Edge effect.
  - 4B. Half Value layer.
  - 4C. Phase II clinical trial.
  - 4D. Radiosensitizers.

(10×4 = 40 marks)



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MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2010

SUBJECT: PAPER III: CLINICAL RADIOTHERAPY AND CANCER CHEMOTHERAPY

Wednesday, April 07, 2010

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

1. Describe the staging of Endometrial carcinoma and management of Endometrial carcinoma.  
(20 marks)
2. What is Tumour Lysis syndrome and describe management of Tumour Lysis syndrome.  
(20 marks)
3. Discuss the anatomy of Hypopharynx and treatment options for stage II Pyriform sinus cancer.  
(20 marks)
4. Write short notes on:
  - 4A. ATRA.
  - 4B. Eaton-Lambert syndrome.
  - 4C. AIDS related cancers.
  - 4D. Letrozole.

(10×4 = 40 marks)



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## MANIPAL UNIVERSITY

MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2010

SUBJECT: PAPER IV: RECENT ADVANCES IN RADIATION ONCOLOGY

Thursday, April 08, 2010

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer all the questions.
- ✍ Draw neat labeled diagrams wherever necessary.

1. What is 3D conformal radiotherapy? Discuss in detail the steps involved in 3DCRT.  
(20 marks)
2. What are the indications for cranio-spinal irradiation? Discuss in detail the management of medulloblastoma.  
(20 marks)
3. Describe in detail the etiology, pathophysiology and management of Superior Vena Caval obstruction.  
(20 marks)
4. Write short notes on the following:
  - 4A. PET Scan
  - 4B. Virtual simulation
  - 4C. Amifostine
  - 4D. Bisphosphonates.

(40 marks)

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