

Reg. No.

MANIPAL UNIVERSITY

MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2014

SUBJECT: PAPER I: BASIC SCIENCES, RADIOLOGY, STATISTICS, NUCLEAR MEDICINE

Tuesday, April 01, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Describe the lymphatic drainage of breast and the management of stage III A carcinoma breast in a post menopausal hormone receptor positive patient.

(15 marks)

2. Discuss the anatomy of skin and response of skin to radiation.

(15 marks)

3. **Write short notes on:**

3A. Chi square test

3B. Tumour control probability

3C. Management of chemoradiation induced oral mucositis

3D. Gamma camera

3E. Nimorazole

3F. Chart

3G. Anatomy of maxillary sinus

3H. Flow cytometry

3I. Pdr brachytherapy

3J. Paired 't' test

(7×10 = 70 marks)



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MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2014

SUBJECT: PAPER II: RADIATION PHYSICS, RADIOTHERAPY

Wednesday, April 02, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Long Essay:

1. Discuss the prognostic factors for local relapse in CA breast.

(15 marks)

2. Discuss the designing of phase III clinical trial.

(15 marks)

3. **Write short notes on:**

3A. Lipowitz metal

3B. Tumour markers

3C. Auger electrons

3D. Phtotelectric effect

3E. Film dosimetry

3F. IORT

3G. Permanent implants

3H. Bolus

3I. Roentgen

3J. L-q model

(7×10 = 70 marks)



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MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2014

SUBJECT: PAPER III: CHEMOTHERAPY, CLINICAL ONCOLOGY

Thursday, April 03, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the non surgical management of limited stage small cell CA lung. (15 marks)

2. Discuss the management of stage IV a CA buccal mucosa. (15 marks)

3. **Write short notes on:**

3A. Chloroma

3B. Lymphatic drainage of testis

3C. Intraperitoneal chemotherapy

3D. Pheochromocytoma

3E. Ann arbor staging for lymphoma

3F. Ependymoma

3G. Heterotopic ossification

3H. Androgen suppression therapy

3I. Lynch syndrome

3J. Lapatinib

(7×10 = 70 marks)



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MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2014
SUBJECT: PAPER IV: RECENT ADVANCES

Friday, April 04, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the steps involved in planning and executing IGRT. (15 marks)

2. Discuss the signal transduction pathways currently targeted in molecular targeted therapy. (15 marks)

3. **Write short notes on:**
 - 3A. Gamma knife
 - 3B. Bragg peak
 - 3C. Ultra low dose rate brachytherapy
 - 3D. ICRU 83
 - 3E. Human papilloma virus in carcinogenesis
 - 3F. Management of lobular carcinoma in situ
 - 3G. Crizotinib
 - 3H. Syed-neblett template
 - 3I. Photosensitizers
 - 3J. Bevacizumab

(7×10 = 70 marks)

