

MANIPAL UNIVERSITY

MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2015

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

Wednesday, April 01, 2015

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Long Essay:

1. Describe the anatomy and lymphatic drainage of rectum. Write the AJCC staging for rectal cancers.

(15 marks)

2. Explain the rationale for fractionation in radiotherapy. Describe the use of Linear-Quadratic model in the development of altered fractionation schedules.

(15 marks)

3. Write short notes on:

3A. Advantages of Hypofractionation

3B. Oxygen enhancement ratio

3C. Reporting of mammography

3D. Differences between stochastic and deterministic effects of radiation exposure

3E. The ALARA principle

3F. Interaction between hyperthermia and radiation

3G. FIGO staging for carcinoma cervix

3H. Acute gastrointestinal syndrome of radiation exposure

3I. Hypoxic cell sensitizers

3J. Metanalysis of clinical trials

(7 marks × 10 = 70 marks)



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SUBJECT: PAPER II: RADIATION PHYSICS, RADIOTHERAPY

Thursday, April 02, 2015

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

✍ **Long Essay:**

1. Discuss the Management of CA Supraglottis T3N2Cm0. (15 marks)

2. Define percentage depth dose. Discuss the factors affecting it. (15 marks)

3. **Write short notes on:**

3A. LET

3B. Wedge filter

3C. Bolus in radiotherapy

3D. Ir-192

3E. Isodose curves

3F. Arc therapy

3G. Effect of radiation on kidney

3H. Manchester system of brachytherapy

3I. Cancer registry

3J. Optimization in HDR brachytherapy

(7 marks × 10 = 70 marks)



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MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2015

SUBJECT: PAPER III: CHEMOTHERAPY, CLINICAL ONCOLOGY

Saturday, April 04, 2015

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

☞ Answer ALL the questions.

☞ Long Essay:

1. Enumerate the pre-treatment investigations to be obtained in a 28 year old female with diffuse large B cell lymphoma of tonsil. Write the treatment plan outline in DLBCL.

(15 marks)

2. What are the signs and symptoms of bone metastases? Briefly write on the evaluation and treatment of a patient with breast cancer and suspected bone metastases.

(15 marks)

3. Write short notes on:

3A. Management of tumor lysis syndrome

3B. Evaluation and treatment of malignant ascites

3C. Evaluation of Ewing's sarcoma, and prognostic factors

3D. Prophylactic cranial irradiation in small cell lung cancer

3E. Bleomycin

3F. Bladder preservation therapy in muscle invasive bladder cancer

3G. Classification of Hodgkin's lymphoma

3H. Superior sulcus tumors

3I. Lapatinib

3J. Role of radiotherapy in Wilms' tumor

(7 marks × 10 = 70 marks)



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MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2015

SUBJECT: PAPER IV: RECENT ADVANCES

Monday, April 06, 2015

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Long Essay:

1. Classify cns tumours. Discuss the management of glioblastoma multiforme. (15 marks)

2. Discuss the role of chemoradiation in head and neck malignancies. (15 marks)

3. Write short notes on:

3A. Kaposi sarcoma

3B. Oncotype DX

3C. CA 15-3

3D. Langerhans cell histiocytosis

3E. Who pain ladder

3F. Prevention and management of radiation induced xerostomia

3G. Heterotopic ossification

3H. Field cancerisation

3I. Management of SVC syndrome

3J. Miller-payne criteria

(7 marks × 10 = 70 marks)

