

Reg. No.

**MANIPAL ACADEMY OF HIGHER EDUCATION**

**MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2018**

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

Monday, April 02, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the lymphatic drainage of tongue and management of CA oral tongue T4N1M0.  
(15 marks)
2. Discuss cell survival curves and explain  $\alpha/\beta$  ratio.  
(15 marks)

3. **Short Answers:**

- 3A. Kerma
- 3B. Fractionation
- 3C. Norton simon hypothesis
- 3D. Phase III clinical trials
- 3E. Anova
- 3F. Role of I-131 in follicular CA thyroid
- 3G. Prognostic factors in CA cervix
- 3H. OER
- 3I. Cisplatin
- 3J. Effect of radiation on the lens

(7 marks  $\times$  10 = 70 marks)



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**MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2018**  
**SUBJECT: PAPER II: RADIATION PHYSICS, RADIOTHERAPY**

Tuesday, April 03, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Write on the FIGO staging of endometrial carcinoma. What are the other important prognostic factors in endometrial carcinoma?

(15 marks)

2. Describe the different techniques of orthogonal field matching.

(15 marks)

3. **Write short notes on:**

3A. Photoelectric Effect

3B. Cumulative Dose volume histogram

3C. Clinical features, staging and treatment of Esthesio neuroblastoma

3D. Digitally Reconstructed Radiograph

3E. Templates in interstitial brachytherapy for pelvic tumors

3F. Cobalt-60

3G. Role of radiotherapy in the treatment of keloids

3H. AJCC staging for Non-small cell lung cancer

3I. Enumerate any seven Cranial nerve dysfunction syndromes in Nasopharyngeal cancer

3J. Radiation pneumonitis

(7 marks × 10 = 70 marks)



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**MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2018**  
**SUBJECT: PAPER III: CHEMOTHERAPY, CLINICAL ONCOLOGY**

Wednesday, April 04, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the management of T3N1M0 CA stomach.

(15 marks)

2. Discuss the management of spinal cord compression secondary to metastases.

(15 marks)

3. **Short Notes:**

3A. PSA velocity

3B. Orbital lymphoma

3C. Role of radiotherapy in wilm's tumour

3D. Vandetanib

3E. Epirubicin

3F. Kadish staging for olfactory neuroblastoma

3G. Osteoclastoma

3H. Bone seeking isotopes

3I. Imatinib

3J. Siadh

(7 marks × 10 = 70 marks)



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**MD (RADIOTHERAPY) DEGREE EXAMINATION – APRIL 2018**

**SUBJECT: PAPER IV: RECENT ADVANCES**

Thursday, April 05, 2018

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Write the staging of CA Nasopharynx and the management of stage III CA. Nasopharynx.  
(15 marks)
2. Classify Radiosensitisers and discuss their mode of action of action.  
(15 marks)

3. **Short Notes:**

- 3A. Hyper fractionation
- 3B. Atra
- 3C. Discuss the effects of radiation on the spinal cord
- 3D. Amifostine
- 3E. Compton scattering
- 3F. Endovascular brachy therapy
- 3G. Craniopharyngeoma
- 3H. Erlotinib
- 3I. Discuss the complications of HDR Brachy therapy in CA Cervix
- 3J. Pazopanib

(7 marks × 10 = 70 marks)

