

## MANIPAL UNIVERSITY

SECOND YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: GENERAL AND APPLIED PATHOLOGY  
(2011 SCHEME)

Friday, June 02, 2017

Time: 10:00-11:30 Hrs.

Max. Marks: 40

✍ **Answer ALL questions.**

1. Describe the aetiology, clinical features and basic investigations of two nutritional anemias.  
(2+3+3 = 8 marks)
2. Define necrosis. Describe the types of necrosis with examples.  
(1+6 = 7 marks)
3. **Write short notes on:**
  - 3A. Factors influencing wound healing
  - 3B. Hemophilia
  - 3C. Phagocytosis
  - 3D. Primary tuberculosis
  - 3E. Mode of spread and prognosis of tumours(5 marks × 5 = 25 marks)



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**MANIPAL UNIVERSITY**

**SECOND YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2017**

**SUBJECT: RADIATION PHYSICS  
(2011 SCHEME)**

Monday, June 05, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

**PART: A**

1. **Answer ALL the questions:**

- 1A. Define Specific activity and derive an expression for the same.
- 1B. Write a short note on Compton Scattering.
- 1C. What are the factors that affect the intensity and quality of the X-ray?
- 1D. Write briefly about effect of filters on patient exposure.
- 1E. What is the activity of 1gm of Ra-226 (half-life = 1622 years)?
- 1F. Write a short note on liquid scintillation detectors.

(5 marks × 6 = 30 marks)

**PART: B**

2. **Answer any FIVE of the following questions:**

- 2A. Draw V-I characteristics curve of gas filled detectors and explain each region in detail.
- 2B. Define radioactivity and derive radioactive disintegration law. How many Becquerels of  $^{24}\text{Na}$  should be ordered so that the sample activity will be  $3.7 \times 10^8$  Bq when it arrives 24 hours later?
- 2C. Write in detail about x-ray production in x-ray tube.
- 2D. What are the different modes of decay? Explain each mode with example.
- 2E. Write in detail about hooded anode therapy tube with neat labelled diagram.
- 2F. **Write short notes on:**
  - i) Electron capture
  - ii) Isomeric Transition
  - iii) Internal conversion
  - iv) Photodisintegration
  - v) Atomic mass unit

(10 marks × 5 = 50 marks)



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## MANIPAL UNIVERSITY

SECOND YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: PRINCIPLES AND PRACTICE OF RADIOTHERAPY: PART – I  
(2011 SCHEME)

Wednesday, June 07, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

### PART – A

1. Answer any FIVE questions from the following

- 1A. Differentiate between Teletherapy and Brachytherapy.
- 1B. What is meant palliative radiotherapy? How is it different from curative radiotherapy?
- 1C. TDF (Time/Dose/Fractionation) concept in radiotherapy
- 1D. Simulation of a patient for Cranio Spinal irradiation
- 1E. Fractionation Schedules in radiotherapy
- 1F. Patient simulation process in radiotherapy

(10 marks × 5 = 50 marks)

### PART – B

2. Answer ALL the following questions

- 2A. Tissue tolerance for any five critical organs
- 2B. Radiotherapy: Physical Effects
- 2C. Skin Dose and Skin Sparing effect
- 2D. What is Lethal Dose, Sub Lethal and Supra Lethal Dose?
- 2E. List Complications Associated with cancer.
- 2F. List the Altered Fractionation Schedules.

(5 marks × 6 = 30 marks)



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## MANIPAL UNIVERSITY

SECOND YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: PRINCIPLES AND PRACTICE OF RADIOLOGY  
(2011 SCHEME)

Friday, June 09, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

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1. **Answer any FIVE questions from the following:**

- 1A. Describe about the Instrumentation for MRI.
- 1B. Discuss about the characteristics of an Image.
- 1C. Explain about the types of X-ray tube.
- 1D. Explicate the X-ray film and its types.
- 1E. Explain the Instrumentation of Automatic Processor.
- 1F. Describe the positioning and view for Hip joint.

(10 marks × 5 = 50 marks)

2. **Answer ALL questions**

- 2A. What do you mean by silver recovery? Outline the methods for it.
- 2B. Narrate the generations of CT.
- 2C. Outline the CT artefacts and its remedies.
- 2D. List out the constituents and functions of processing solutions.
- 2E. Compare Manual and Automatic Processing.
- 2F. Describe the basic techniques of DSA.

(5 marks × 6 = 30 marks)



**MANIPAL UNIVERSITY****SECOND YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2017****SUBJECT: (A) HOSPITAL PRACTICE AND PATIENT CARE (B) RECORD KEEPING  
(2011 SCHEME)**

Monday, June 12, 2017

Time: 10:00-13:00 Hrs.

Max. Marks: 80

**SECTION – A : HOSPITAL PRACTICE AND PATIENT CARE (40 MARKS)****1. Answer any FOUR of the following questions:**

- 1A. Why is ileostomy care so different from colostomy care? Explain the nursing care for patient having stoma.
- 1B. Briefly write on the skin care of a patient receiving radiotherapy for cancer of tongue.
- 1C. Explain briefly the procedure in a radiotherapy department.
- 1D. Briefly explain legal issue of medical records and informed consent.
- 1E. Write a short note on adult basic life supporting algorithms.

(10 marks × 4 = 40 marks)

**SECTION – B : RECORD KEEPING (40 MARKS)****Answer any FOUR of the following questions:**

- 2A. Define numbering system.
- 2B. Write the short note on serial numbering system.
- 2C. What is the main characteristic of good medical record?

(2+4+4 = 10 marks)

- 3A. Explain subjected oriented medical record.
- 3B. Write few tips about consent form in radiotherapy procedure.

(5+5 = 10 marks)

- 4A. Describe source oriented medical record.
- 4B. Mention type of registers in hospital.

(5+5 = 10 marks)

- 5A. Write the format of operation report form.
- 5B. A medical record is both personal document and impersonal document. How? Explain.

(5+5 = 10 marks)

- 6A. Describe microfilming medical record.
- 6B. Explain Computerization of medical records.

(5+5 = 10 marks)

