

MANIPAL UNIVERSITY**FIFTH SEMESTER B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2017****SUBJECT: MIT 301 – PHYSICS & INSTRUMENTATION OF RADIOGRAPHIC EQUIPMENTS (PART I)
(2014 SCHEME)**

Thursday, June 15, 2017

Time: 10.00-13.00 Hrs.

Max. Marks: 80

- ✍ **Answer ALL the question.**
- ✍ **Draw diagram wherever required.**

1. Long answers:

- 1A. Explain in detail the interaction of x-ray radiation with matter.
- 1B. Explain in detail about X-ray Generators.

(15 marks × 2 = 30 marks)

2. Write short notes on the following:

- 2A. Spectra of X-ray
- 2B. Linear attenuation coefficient
- 2C. Fuse
- 2D. Circuit breakers
- 2E. Rotating anode X-ray tube
- 2F. Geometry of radiographic image

(5 marks × 6 = 30 marks)

3. Discuss the following:

- 3A. Difference between dose equivalent and effective dose.
- 3B. Effect of anode heel effect in radiography.
- 3C. Cardinal principle of radiation protection.
- 3D. Single phase and poly phase power supply.

(5 marks × 4 = 20 marks)



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MANIPAL UNIVERSITY

FIFTH SEMESTER B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: MIT 303 – RADIOLOGICAL PROCEDURES AND PATIENT CARE (PART I)
(2014 SCHEME)

Saturday, June 17, 2017

Time: 10.00-13.00 Hrs.

Max. Marks: 80

- ✍ Answer ALL the questions.
- ✍ Draw diagrams wherever required.

1. **Explain in detail:**

- 1A. Describe the Indication, Contraindication, Filming and Procedure for Barium Enema.
- 1B. Briefly explain the emergency drugs used in the Radiology department.

(15 marks × 2 = 30 marks)

2. **Write short notes on the following:**

- 2A. Differentiate between BMFT and Enteroclysis procedure
- 2B. Acute Abdomen series
- 2C. Judet Method
- 2D. Explain filming technique in MCU
- 2E. Views for “Chest Apicogram”

(6 marks × 5 = 30 marks)

3. **Discuss the following:**

- 3A. View for base of Skull
- 3B. Write short notes on contrast media used in GIT
- 3C. Scapula “Y” view
- 3D. Noorgard view

(5 marks × 4 = 20 marks)



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FIFTH SEMESTER B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: MIT 307T – DIGITAL IMAGING TECHNIQUES
(2014 SCHEME)

Tuesday, June 20, 2017

Time: 10.00-11.30 Hrs.

Max. Marks: 40

- ✍ Answer ALL the questions.
- ✍ Draw diagrams wherever required.

1. Long answers:

- 1A. Discuss the dental radiographic landmarks and dental formula. Explain in detail intra-oral radiography techniques.
- 1B. Describe in detail various types of digital subtraction angiography techniques.

(10 marks × 2 = 20 marks)

2. Write short notes on the following:

- 2A. Image processing in computer radiography
- 2B. Principle of Macro-radiography
- 2C. Advantages of PACS
- 2D. Applications of photodiode in digital imaging
- 2E. Mammography x-ray tube target

(4 marks × 5 = 20 marks)



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MANIPAL UNIVERSITY

FIFTH SEMESTER B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2017

SUBJECT: MIT 305T – ULTRASONOGRAPHY TECHNIQUES
(2014 SCHEME)

Thursday, June 22, 2017

Time: 10.00-11.30 Hrs.

Max. Marks: 40

- ✍ Answer ALL the questions.
- ✍ Draw diagrams wherever required.

1. Explain in detail:

- 1A. Doppler Effect. Describe briefly instrumentation of Continuous Wave Doppler.
- 1B. Types of USG Transducers.

(10 marks × 2 = 20 marks)

2. Write short notes on the following:

- 2A. Advantages and disadvantages of USG
- 2B. Grey scale imaging
- 2C. Reverberation artefact
- 2D. TM mode of USG display
- 2E. USG coupling agent

(4 marks × 5 = 20 marks)

