Reg. No.										

MANIPAL UNIVERSITY

THIRD YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY 2013

SUBJECT: PHYSICS AND DARK ROOM TECHNIQUES

Monday, May 27, 2013

Time: 10:00-13:00 Hrs. Max. Marks: 80

- **Answer ALL questions.**
- **All questions carry equal marks.**

1. Describe interaction of radiation with matter.
2. Explain the steps involved in production of photographic emulsion. Add a note on light sensitive emulsions.
3. What is the use of personnel monitoring devices? Explain personnel monitoring devices in detail.

4. **Write short note on:**

4A. Factors affecting quality and intensity of x rays

4B. Quantum detection and conversion efficiency

4C. Mains voltage compensation

4D. Geometric unsharpness

5. **Write short note on:**

5A. Rectifiers

5B. Dark room illumination

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MANIPAL UNIVERSITY

THIRD YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY 2013

SUBJECT: RADIOLOGICAL PROCEDURES

Wednesday, May 29, 2013

Time: 10:00-13:00 Hrs. Max. Marks: 80

✍ **Answer all questions. Each question carries EIGHT marks.**

1. Describe the indication, contraindication, filming and procedure for Barium Enema.
2. Classify Catheters and explain about the different types of Catheters.
3. Describe the radiographic anatomy of the female reproductive system. Explain the indication, contraindication and procedure for HSG.
4. Write short notes on emergency drugs used in the Radiology Department.
5. Explain the radiographic procedure for Dacrocyatography.

✍ **Describe the following Radiographic views:**

6. View for base of Skull
7. Views for Chest Apices
8. View for Bicipital groove
9. Nirgaard method
10. Mortise view

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MANIPAL UNIVERSITY

THIRD YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY 2013

SUBJECT: NEW IMAGING MODALITIES AND RECENT ADVANCES

Friday, May 31, 2013

Time: 10:00-13:00 Hrs. Max. Marks: 80

All the questions are compulsory.

1. Explain the basic principles of Doppler scan. List few importance of Doppler scan.

(6+2 = 8 marks)

2. What are the type of detector used in CT scan and explain each in detail.

(8 marks)

3. Write detail note on contrast media used in MRI.

(8 marks)

4. **Write short note on:**

4A. Detector cross talk

4B. Mammography target

(4+4 = 8 marks)

5. Explain gamma camera in detail with diagram.

(8 marks)

6. Explain the subtraction technique used in DSA.

(8 marks)

7. **Write short note on:**

7A. Reason to used compression in mammography

7B. Component of PACS

(4+4 = 8 marks)

8. Define artifact. Explain the type of artifact in MRI in detail.

(8 marks)

9. **Write short note on:**

9A. Difference between T1 and T2 weighted image

9B. Conventional spin echo

(8 marks)

10. Write a note on Ultrasound artifacts.

(8 marks)