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MANIPAL UNIVERSITY

THIRD YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2009

SUBJECT: PHYSICS AND DARK ROOM TECHNIQUES

Monday, June 08, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

- ✂ **Answer ALL questions.**
- ✂ **Each question carries equal marks.**

- 1A. Draw a labeled diagram of x-ray circuit.
- 1B. Explain the importance of three phase power supply in modern x-ray circuit.
2. What is the aim of radiation protection? Explain the Stochastic and non stochastic effects of radiation.
3. Write a note on soft x-rays, its significance and control in medical imaging.
4. Define oxidation and reduction and explain their significance in radiographic film processing.
5. **Write short notes on:**
 - 5A. Film screen combination.
 - 5B. Dark room ventilation and film storage.



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2009****SUBJECT: RADIOLOGICAL PROCEDURES**

Tuesday, June 09, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

✍ **Answer ALL questions. Each question carries 8 marks.**

1. Classify contrast media. Add a note on properties of an ideal contrast media.
2. What is IVU? What are the indications, relative contraindication and risk factors?
3. Explain the procedure and complications of MCU.
4. Write a note on the contrast media in myelogram.
5. How can you prepare your own barium suspension? Add to it the characteristics influencing coating.

✍ **Describe the following radiographic views**

6. Ankle AP and Lateral.
7. Views for Scaphoid.
8. Optic foramina.
9. Name the different carpal bones and explain the views for carpal tunnel.
10. Different views for the apex of lung.



MANIPAL UNIVERSITY**THIRD YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2009****SUBJECT: NEW IMAGING MODALITIES AND RECENT ADVANCES**

Wednesday, June 10, 2009

Time: 14:00-17:00 Hrs.

Max. Marks: 80

Answer ALL the questions. All question carries equal marks.

1. Write detail notes on electron beam CT scan with diagram.
2. MRI protocol of brain for the patient with the history of seizures.
3. Explain digital radiography in detail.
4. Write short notes on:
 - 4A. Detector cross talk
 - 4B. Mammography target
5. Define Doppler Effect. Explain the continuous wave Doppler in detail.
6. Write short notes on:
 - 6A. Method to reduce scan time in MRI.
 - 6B. Method to increase scan SNR in MRI.
7. Define mammography. Explain the x-ray tube used in mammography.
8. Explain direct capture radiography in detail.
9. Explain the interaction of ultrasound with matter in detail.
10. Explain and compare the different types of magnets used in MRI.

