

**MANIPAL UNIVERSITY****FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013****SUBJECT: ANATOMY**

Tuesday, May 28, 2013

Time: 10.00-11.30 Hrs.

Max. Marks: 40

**✍ Answer ALL the questions.**

1. Describe the lobes and functional areas of cerebral hemisphere.

(2+6 = 8 marks)

2. Describe the position, lobes, surfaces, relations, blood supply and nerve supply of liver.

(1+2+1+2+1+1 = 8 marks)

3. **Write briefly on:**

3A. Ureter

3B. Spermatic cord

3C. Breast

3D. Cartilage

3E. Thoraco-abdominal diaphragm

3F. Retina

3G. Superior vena cava

3H. Pituitary gland

(3×8 = 24 marks)



**MANIPAL UNIVERSITY****FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013****SUBJECT: PHYSIOLOGY**

Thursday, May 30, 2013

Time: 10.00-11.30 Hours.

Max. Marks: 40

✍ **Answer ALL questions. Draw diagrams wherever necessary.**

**1. Essay questions:**

- 1A. Classify leucocytes. Mention one function of each.
- 1B. Draw a neat labeled diagram of the visual pathway.
- 1C. Mention the site of formation and circulation of cerebrospinal fluid. List any two functions of cerebrospinal fluid.
- 1D. List five actions of cortisol.

(5×4 = 20 marks)

**2. Write short answers for the following:**

- 2A. Mention any two transport mechanisms across the cell membrane.
- 2B. Mention any two differences between the first and second heart sounds.
- 2C. Enumerate any two differences between skeletal and smooth muscles.
- 2D. Mention any two anticoagulants.
- 2E. Define stroke volume. Give its normal value.
- 2F. Mention the different forms in which oxygen is transported in the blood.
- 2G. List any two functions of liver.
- 2H. Define alveolar ventilation. Mention its normal value.
- 2I. List any two functions of placenta.
- 2J. Define renal threshold. Mention the renal threshold for glucose.

(2×10 = 20 marks)



**MANIPAL UNIVERSITY****FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013****SUBJECT: BIOCHEMISTRY**

Saturday, June 01, 2013

Time: 10.00-11.30 Hours

Max. Marks: 40

1. Write in detail the reactions of urea cycle. Add a note on two disorders of urea cycle.  
(8 marks)
2. Explain the metabolism of ketone bodies.  
(6 marks)
3. **Write short notes on the following:**
  - 3A. Structure of DNA
  - 3B. Secondary structure of proteins
  - 3C. Digestion of starch
  - 3D. Reactions of  $\beta$ - oxidation of palmitic acid in mitochondria  
(4×4 = 16 marks)
4. **Answer the following:**
  - 4A. Give two functions of dietary fibers.
  - 4B. Name two important products each derived from tyrosine and glycine.
  - 4C. List four functions of calcium.
  - 4D. Write the normal serum levels of total protein, uric acid, creatinine and total cholesterol.
  - 4E. What are proenzymes? Give two examples.  
(2×5 = 10 marks)



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**MANIPAL UNIVERSITY**

**FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013**

**SUBJECT: RADIATION PHYSICS**

Tuesday, June 04, 2013

Time: 10.00-13.00 Hrs.

Max. Marks: 80

- ✍ **Answer all questions**  
✍ **Each question carries SIXTEEN marks**

1. Write a detailed note on transformer.
2. Explain principle of rectification. Discuss in details the different types of rectifiers.
3. **Define the following:**
  - 3A. Biological effect of radiation
  - 3B. Units of measurement of radiation
4. **Write short notes on:**
  - 4A. Soft x-rays and its control
  - 4B. Anode heel effect and its significance in medical imaging
5. **Discuss in details:**
  - 5A. Bremsstrahlung radiation
  - 5B. Types and use of filter used in diagnostic radiology



## MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013

SUBJECT: DARK ROOM TECHNIQUES

Thursday, June 06, 2013

Time: 10.00-13.00 Hrs.

Max. Marks: 80

✍ Answer ALL the questions. Each question carries SIXTEEN marks.

1. Explain the causes of subject contrast. How may the effects of scatter on subject contrast be minimized?
2. Describe the formation of latent image with the help of Gurney Mott theory.
3. How is characteristic curve produced?
4. Enumerate different types of dark room entrances with advantages and disadvantages.
5. Write short notes on the following:
  - 5A. Safe light
  - 5B. Film transport system
  - 5C. COSHH regulations
  - 5D. Duplitized X Ray Film



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**MANIPAL UNIVERSITY**

**FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2013**

**SUBJECT: IMAGING PHYSICS AND RADIOGRAPHIC POSITIONING**

Saturday, June 08, 2013

Time: 10:00-11:30 Hrs.

Max. Marks: 40

✍ **Answer ALL the questions.**

✍ **Draw suitable diagrams wherever required.**

1. Explain the basic principle of Doppler and mention the different types of Doppler.

(8 marks)

2. Explain piezoelectric effect in detail.

(8 marks)

3A. Explain any four CT artifacts in detail.

3B. Explain Foot AP view.

(8 marks)

4A. Describe the Knee skyline view.

4B. Draw a neat labeled diagram of Ultrasound Transducer.

(8 marks)

5. Explain Shoulder AP and Axial view.

(8 marks)

