| Reg. No. | | | | | | | | | | |
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# MANIPAL UNIVERSITY

## FIRST YEAR B.Sc. M.L.T./ B.Sc. N.M.T./ B.Sc. R.T./ B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2008

### SUBJECT: ANATOMY

Monday, June 09, 2008

Time: 1½ Hrs. Max. Marks: 40

- **Answer all the questions.**
- **Draw neat labeled diagram wherever necessary.**

1. Classify the joints giving examples to each variety. Discuss the structure of a typical synovial joint.

(8 marks)

2. Name the fissures and lobes of the right lung. Name the structures related to the mediastinal surface of right lung.

(2+6 = 8 marks)

3. Answer briefly on:

3A. Multipalar neuron

3B. Trachea

3C. Interior of the right ventricle

3D. Stomach

3E. Spleen

3F. Uterus

3G. Functional areas of cerebrum

3H. Right kidney

(3×8 = 24 marks)

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# MANIPAL UNIVERSITY

**FIRST YEAR B.Sc. M.I.T./FIRST SEMESTER B.Sc. HIA. DEGREE EXAMINATION – JUNE 2008**

**SUBJECT: PHYSIOLOGY**

Tuesday, June 10, 2008

Time: 1½ Hrs. Max. Marks: 40

✍ Answer **ALL** questions.

1. Write Short notes on:

1A. Sequence of events involved in pain perception.

1B. Regulation of arterial blood pressure.

1C. Regulation of plasma calcium level.

1D. Lung volumes and capacities.

1E. Functions of kidney.

(5×5 = 25 marks)

2. Write brief answers to the following:

2A. What is presbyopia? Give its cause.

2B. Name any two functions of liver.

2C. What is acromegaly? Give any two clinical features of the same.

2D. Name the protein that converts angiotensinogen to angiotensin I. Where is it secreted?

2E. Name the different types of cells in the stomach. Mention the secretion of any one type of cell.

(2×5 = 10 marks)

3. Indicate whether the following statements are True or False.

3A. Deficiency of cortisol leads to hyperglycemia.

3B. Nitric oxide is a neurotransmitter.

3C. Estrogen causes secretory changes in endometrium.

3D. Excess secretion of Prolactin inhibits ovulation.

3E. Platelets are responsible for clot retraction.

(1×5 = 5 marks)

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# MANIPAL UNIVERSITY

## FIRST YEAR B.P.T./B.O.T/ B.Sc. M.L.T./ B.Sc. N.M.T./ B.Sc. R.T./ B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2008

### SUBJECT: BIOCHEMISTRY
### (NEW REGULATIONS)

Wednesday, June 11, 2008

Time available: 1½ Hours | Max. Marks: 40

**Answer ALL questions.**

1. Classify polysaccharides. Give TWO examples for each with their functions.

(4 marks)

2. Write the reactions of the citric acid cycle. Add a note on its energetics.

(8 marks)

3. Mention TWO physiologically important compounds each derived from glycine, tyrosine, histidine and tryptophan.

(4 marks)

4. Give the RDA, sources, biochemical functions and disorders for Vitamin A.

(6 marks)

5. Give the normal serum level and TWO conditions in which they are altered for glucose and protein.

(3 marks)

6. Write the reactions involved in the oxidation of palmitic acid.

(6 marks)

7. What is the diagnostic importance of serum creatine kinase and alanine transaminase?

(3 marks)

8. What is biological value of a protein? Mention protein sources with high biological value.

(2 marks)

9. Mention the causes for lactose intolerance. Describe the clinical features and biochemical changes occurring after the intake of milk in these patients.

(4 marks)

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# MANIPAL UNIVERSITY

## FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2008

### SUBJECT: RADIATION PHYSICS

Thursday, June 12, 2008

Time: 3 Hrs. Max. Marks: 80

**Answer any FIVE of the following.**

1A. Discuss X-ray spectrum with necessary plot.

1B. Explain Bremstrauhlung process and Characteristic X-rays.

(4+12 = 16 marks)

2A. Discuss the transformer losses.

2B. What is rectification? Discuss Half wave rectifier, Full wave rectifier and silicon rectifier using necessary diagram.

(6+10 = 16 marks)

3A. What is electromagnetic radiation?

3B. Explain:

i) Quantum nature of Radiation

ii) Mass-Energy Equivalence

iii) Fluorescence

iv) Electromagnetic spectrum

(2+(4+3+3+4) = 16 marks)

4A. Discuss the safety specification for diagnostic X-ray unit under general Radiography.

4B. Write a short note on area monitoring.

(12+4 = 16 marks)

5A. Discuss the Grid controlled X-ray tubes.

5B. Explain Heel Effect.

5C. Discuss Tube rating in detail with necessary plots.

(4+4+8 = 16 marks)

6A. Explain with an example how rotating anode arrangement is Advantageous over stationary anode arrangement.

6B. List the rule of Bohr- Burry scheme for the arrangement of electrons in an atom.

(8+8 = 16 marks)

7. Describe AC generators with neat diagram.

(16 marks)

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# MANIPAL UNIVERSITY

## FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2008

### SUBJECT: DARK ROOM TECHNIQUES

Friday, June 13, 2008

Time: 3 Hrs. Max. Marks: 80

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- **Answer any FIVE questions. Question number 1 is compulsory.**
- **Each question carries 16 marks.**

1. Write short notes on any **FOUR** of the following:

1A. Safe light

1B. Electrolysis

1C. Quantum mottle

1D. Care of cassette holders

1E. Duplication film

1F. Shelf life

- Write short notes on any **FOUR** of the following.

2. Factors affecting fixing process.

3. Dark room construction.

4. Characteristic curve of film and its significance.

5. Film artifacts.

6. Properties of X-rays.

7. Film transport system in automatic processor.