

MANIPAL UNIVERSITY
FIRST YEAR B.Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2008

SUBJECT: ANATOMY

Friday, August 22, 2008

Time: 1½ Hrs.

Max. Marks: 40

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

1. Name the parts of small and large intestine. Discuss the duodenum. (3+5 = 8 marks)

2. Give an account of the external features of heart. Add a note on the interior of the right atrium. (4+4 = 8 marks)

3. **Answer briefly on:**
 - 3A. Interior of the larynx.
 - 3B. Microscopic structure of a lymph node.
 - 3C. Broncho pulmonary segments.
 - 3D. Urinary bladder.
 - 3E. Prostate gland.
 - 3F. Position, parts and blood supply of thyroid gland.
 - 3G. Fourth ventricle.
 - 3H. Functional areas of cerebrum.

(3×8 = 24 marks)



MANIPAL UNIVERSITY
FIRST YEAR B.Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2008

SUBJECT: PHYSIOLOGY

Saturday, August 23, 2008

Time available: 3 Hours.

Max. Marks: 80

1. Essay:

- 1A. Draw and label the oxygen-haemoglobin dissociation curve and describe its relation to transport of oxygen in blood.
- 1B. Explain the functions of cerebellum. Describe features seen in cerebellar lesion.
- (10+10 = 20 marks)

2. Write short notes on:

- 2A. Middle ear function.
- 2B. Types and properties of smooth muscles.
- 2C. Neuromuscular junction.
- 2D. Sympathetic nervous system.
- 2E. Salivary secretion.
- 2F. Cause and features of diabetes mellitus.
- 2G. Pain transmission in CNS.
- 2H. Erythropoiesis

(5×8 = 40 marks)

3. Write brief answers to the following:

- 3A. List four functions of Hypothalamus.
- 3B. Name the visual receptors and mention their functions.
- 3C. Name two hyperglycemic hormones.
- 3D. Define arterial blood pressure. Give its normal value.
- 3E. Name two functions of Cerebrospinal fluid.
- 3F. Define vital capacity. Give its normal value in males.
- 3G. What is ECG? Mention two clinical uses of it.
- 3H. Define 'Active transport'. Give one example.
- 3I. Name the two components of gastric juice and mention the role of each.
- 3J. Name two functions of skin and the structures responsible for these functions.

(2×10 = 20 marks)



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MANIPAL UNIVERSITY

FIRST YEAR B. Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2008

SUBJECT: BIOCHEMISTRY

Monday, August 25, 2008

Time: 1½ Hrs.

Max. Marks: 40

✍ Answer ALL the questions:

1. How is glucose synthesized from lactate? Which are the key enzymes involved? How is the pathway regulated?
(8 marks)
2. Explain the denovo synthesis of palmitic acid. Add a note on its regulation during well fed and fasting state and also mention the regulatory enzymes.
(7 marks)
3. Describe the different levels of structural organization of proteins.
(5 marks)
4. Write short notes on:
 - 4A. Ketogenesis
 - 4B. BMR
 - 4C. Homopolysaccharides(4×3 = 12 marks)
5. List the similarities and differences between:
 - 5A. DNA and RNA.
 - 5B. Marasmus and kwashiorkor.(4×2 = 8 marks)



MANIPAL UNIVERSITY
FIRST YEAR B.Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2008
SUBJECT: BIOMEDICAL INSTRUMENTATION TECHNIQUES

Tuesday, August 26, 2008

Time: 3 Hrs.

Max. Marks: 80

✍ **Answer all questions. Draw diagrams if necessary.**

1. What is the principle behind the working of a pH meter? Discuss the working of pH meter in detail.

(10 marks)
2. What are the different types of centrifuges? Discuss about the components of a centrifuge. What are the important tips to be kept in mind in the maintenance of a centrifuge?

(10 marks)
3. What are the major sub systems in computer tomography systems? Explain the working of a CT scanner with the help of a block diagram.

(10 marks)
4. Write detailed notes on:
 - 4A. Autoclave.
 - 4B. Spectrophotometer.
 - 4C. Electron microscope.
 - 4D. ECG wave forms.
 - 4E. Bronchoalveolar lavage.
 - 4F. FNAC.
 - 4G. Treadmill test.

(5×7 = 35 marks)
5. Write short notes on:
 - 5A. Beer Lambert law.
 - 5B. Flame photometer.
 - 5C. Hotair oven.
 - 5D. Laser applications in medicine.
 - 5E. RIA.

(3×5 = 15 marks)

