

Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.Sc. M.L.T./ B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2006

SUBJECT: ANATOMY

Monday, August 07, 2006

Time: 1½ Hrs.

Max. Marks: 40

☞ Answer all questions. Draw neat labeled diagrams wherever necessary.

1. Name the parts of gastrointestinal tract. Give an account of the small intestine.
(2+6 = 8 marks)
2. Name the parts of female reproductive organs. Give an account of the uterus.
(2+6 = 8 marks)
3. Answer briefly on:
 - 3A. Collagen fibres.
 - 3B. Structure of a lymph node.
 - 3C. Paranasal air sinuses.
 - 3D. Right coronary artery.
 - 3E. Nephron.
 - 3F. Thyroid gland.
 - 3G. Testis.
 - 3H. Coverings of brain.

(3×8 = 24 marks)



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FIRST YEAR B.Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2006**SUBJECT: PHYSIOLOGY****(NEW REGULATION)**

Tuesday, August 08, 2006

Time: 3 Hrs.

Max. Marks: 80

✓ Answer ALL questions.

- 1A. Define blood pressure. Give its normal value. List three factors that determine blood pressure.
 1B. Draw a neat labelled diagram to show the location and nerve supply of arterial blood baroreceptors. Describe their role in blood pressure regulation.

(4+6 = 10 marks)

- 2A. Name the hormones of anterior pituitary. List their actions.
 2B. Name the hormones that control
 i) plasma calcium level ii) Plasma Na⁺ level iii) Blood glucose level
 2C. Give the differences between dwarfism and cretinism.

(4+4+2 = 10 marks)

- 3A. Define the following terms and give the normal value of each.
 i) Alveolar ventilation ii) Tidal volume iii) Vital capacity iv) Dead space.
 3B. Give agglutinogens and agglutinins present in each group of ABO and Rh systems.
 3C. Draw a neat labelled diagram of nephron. List four important functions of kidneys.
 3D. Draw a neat labelled diagram of action potential in a nerve fiber.
 3E. Name two ascending and descending tracts. Give their functions.
 3F. Draw a neat labelled diagram of respiratory membrane. Name two factors that influence diffusion of gas across the membrane.
 3G. Define and give the normal value for clotting time. Give a cause each for hemophilia and thrombocytopenic purpura.
 3H. Give the normal body temperature. Give the location of center for temperature regulation. Name two mechanisms that help heat loss.
 3I. Give the oxygen content and partial pressure of oxygen in arterial blood. Name the forms of O₂ transport in the blood.
 3J. Give the functions of the following
 i) Gastric HCl ii) Pepsinogen iii) α - amylase iv) Trypsinogen

(4×10 = 40 marks)

- 4A. Name the different phases of ovarian cycle. Mention the day of ovulation in a 28 days cycle.
 4B. Define receptors. Give two properties of it.
 4C. Name two hormones that act on kidney with their actions.
 4D. Give the cause and two symptoms of diabetes mellitus.
 4E. List four functions of plasma proteins.
 4F. Define: i) Autorhythmicity ii) Starling's law.
 4G. List two functions each of hypothalamus and cerebellum.
 4H. Give normal value for the following:
 i) RBC count ii) WBC count iii) PCV iv) Hb concentration
 4I. Define: i) Motor unit ii) Paralysis
 4J. Give the effect of parasympathetic stimulation on gastric secretion and motility.

(2×10 = 20 marks)

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FIRST YEAR B. Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2006**SUBJECT: BIOCHEMISTRY**

Wednesday, August 09, 2006

Time: 1½ Hrs.

Max. Marks: 40

Answer all questions.

1. Classify dietary fiber and write the beneficial effects of dietary fiber.
2. Explain the intestinal digestion of lipids and proteins.
3. Define ketosis? Discuss briefly the formation, transport and utilization of ketone bodies.
4. What is essential amino acid? Give example. Name the specialized products derived from Glycine and Tyrosine and their biological role.
5. Define transamination with an example. Write the coenzyme required for transamination and its other metabolic functions.
6. What are trace elements? Name them. Explain briefly Iron under following headings:
 - 6A. Dietary source.
 - 6B. RDA.
 - 6C. Functions.
 - 6D. Disorders of Iron metabolism.
7. Classify enzymes with examples. Add a note on diagnostic importance of enzymes.
8. Write the normal values and clinical significance of following parameters:
 - 8A. Serum Cholesterol.
 - 8B. Blood Urea.
 - 8C. Bilirubin.
 - 8D. Serum Calcium.
9. Write the DNA structure and add a note on disorders of purine metabolism.
10. Explain UREA cycle and name the metabolic defects in urea cycle.

(4×10 = 40 marks)



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FIRST YEAR B.Sc. M.L.T. DEGREE EXAMINATION – AUGUST 2006**SUBJECT: BIOMEDICAL INSTRUMENTATION TECHNIQUES**

Thursday, August 10, 2006

Time: 3 Hrs.

Max. Marks: 80

Answer all questions. Draw diagrams if necessary.

1. Explain the working of electron microscope in detail.
(10 marks)
2. Write an essay about the principle and procedure of ELISA. Briefly discuss about different types of ELISA.
(10 marks)
3. Discuss the chromatographic technique. What are the different types of chromatography commonly used in the separation of substances?
(10 marks)
4. Write detailed notes on:
 - 4A. CT scan.
 - 4B. EEG.
 - 4C. Common balance.
 - 4D. Mammography.
 - 4E. Autoclave.
 - 4F. Spectrophotometer.
 - 4G. FNAC.(5×7 = 35 marks)
5. Write short notes on:
 - 5A. RIA.
 - 5B. Bronchoalveolar lavage.
 - 5C. Electrophoresis.
 - 5D. Incubators.
 - 5E. Dialysers.(3×5 = 15 marks)

