

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.Sc. M.L.T./ B.Sc. R.T./ B.Sc. M.I.T. DEGREE EXAMINATION – MAY/JUNE 2006**SUBJECT: ANATOMY**

Wednesday, May 31, 2006

Time: 1½ Hrs.

Max. Marks: 40

✍ Answer all questions. Draw neat labeled diagram wherever necessary.

1. Discuss the microscopic structure of the compact bone. Add a note on the matrix of the bone.
(4+4 = 8 marks)

2. Name the parts of male reproductive organs. Discuss the microscopic structure of testis.
(2+6 = 8 marks)

3. Answer briefly on:
 - 3A. Microscopic structure of an artery.
 - 3B. Vertebral column.
 - 3C. Vocal cords.
 - 3D. Right ventricle.
 - 3E. Small intestine.
 - 3F. Nephron.
 - 3G. Pyramidal tract.
 - 3H. Suprarenal gland.

(3×8 = 24 marks)



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

Thursday, June 01, 2006

Time: 3 Hrs.

Max. Marks: 80

✍ **Answer ALL questions.**

1A. Mention the agglutinogens and agglutinins present in each of the groups of ABO and Rh systems. Give any two uses of blood grouping.

1B. Give the total WBC count. Classify WBCs. List four functions of WBC.

(10 marks)

2A. Briefly explain the chemical regulation of respiration.

2B. Draw a neat labeled diagram of a nephron. Name two sites where most of the water is reabsorbed.

2C. i) Name the contractile proteins in skeletal muscle.

ii) List any two factors influencing force of contraction in skeletal muscle.

2D. Draw a neat labeled diagram of pyramidal tract. List two features seen in lesions involving pyramidal tract.

2E. Name the hormones of thyroid gland. List four actions of it. List two features of myxoedema.

(4×5 = 20 marks)

3A. Name the pacemaker of human heart. What is the effect of sympathetic stimulation on the heart rate?

3B. Define ovarian cycle. Name its phases.

3C. Define the following: i) refractory period ii) stimulus

3D. Define vital capacity. Give the normal value. Name the instrument used to measure it.

3E. Draw a neat labeled diagram to show the regulation of cortisol secretion.

(2×5 = 10 marks)

4A. Define cardiac cycle and give its normal duration. Name the different phases of cardiac cycle. List two differences between I and II heart sound.

4B. Draw a neat labeled diagram of normal ECG. Give two uses of ECG.

(6+4 = 10 marks)

5A. Name the muscles involved in quiet inspiration. Explain their role in bringing about inspiration.

5B. List two functions of each of the following:

- i) cerebral cortex
- ii) hypothalamus
- iii) thalamus
- iv) medulla oblongata

5C. Give normal plasma calcium level. List three actions of parathormone in calcium regulation.

5D. Define Micturition. Mention the role of

- i) ureter
- ii) urethra
- iii) urinary bladder.

5E. Name the parts of large intestine and list two functions of it.

(4×5 = 20 marks)

6A. Define clotting time. Give its normal value. Name the clotting factor that is deficient in haemophilia.

6B. Give the cause of each of the following and one feature of each.

- i) Cushing syndrome
- ii) Gigantism

6C. List the functions of the nose in respiration.

6D. List four functions of saliva.

6E. Name the location of the centers for thermoregulation. List three changes that occur when the body is exposed to a cold environment.

(2×5 = 10 marks)



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FIRST YEAR B. Sc. M.L.T./ B. Sc. R.T DEGREE EXAMINATION – MAY/JUNE 2006**SUBJECT: BIOCHEMISTRY**

Friday, June 02, 2006

Time: 1½ Hrs.

Max. Marks: 40

≠ Answer all questions.

1. Define the following:
 - 1A. Nitrogen balance.
 - 1B. Basal metabolic rate.
 - 1C. Respiratory quotient.
 - 1D. Specific dynamic action.
2. Trace the pathway of formation of lactate from glucose. Explain its energetics.
3. Explain lipid transport in our body.
4. Write the reactions of urea cycle. Mention four different causes of hyper uremia.
5. Write two reactions each in which following vitamins take part
 - 5A. Vitamin B 12
 - 5B. Vitamin B6
6. Explain how iron is absorbed and transported in our body.
7. Classify enzymes with one example each.
8. Explain the features of t- RNA with a labeled diagram.
9. Explain the role of various enzymes in assessing the liver function.
10. What is normal serum phosphate level? Enumerate various causes of hyper and hypo Phosphatemia.

(4×10 = 40 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

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

Saturday, June 03, 2006

Time: 3 Hrs.

Max. Marks: 80

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

1. Describe the working of ECG machines. Discuss the waveforms seen in electrocardiogram.
(10 marks)
2. Elaborate on colourimetry.
(10 marks)
3. Explain the working of electron microscopes in detail.
(10 marks)
4. Write detailed notes on:
 - 4A. ELISA
 - 4B. Electrophoresis
 - 4C. EMG
 - 4D. Darkfield microscope
 - 4E. Treadmill test
 - 4F. Incubators
 - 4G. FNAC(5×7 = 35 marks)
5. Write short notes on:
 - 5A. pH meter
 - 5B. Hot air oven
 - 5C. Beer Lambert law
 - 5D. Mammography
 - 5E. Flame photometer(3×5 = 15 marks)

