

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)



MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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)



Reg. No.										
----------	--	--	--	--	--	--	--	--	--	--

MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

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

(Deemed University)

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

Saturday, June 03, 2006

Time: 3 Hrs.

Max. Marks: 80

Answer ALL questions.

- 1A. Enumerate six routes of drug administration.
1B. Mention three advantages and three disadvantages of any one route.
(3+3 = 6 marks)
2. Mention two preparations of synthetic glucocorticoids. List four uses and four adverse effects of them.
(1+2+2 = 5 marks)
- 3A. Define bioavailability.
3B. Enumerate four factors affecting drug absorption.
3C. Calculate the amount of ingredients required to prepare 500ml of 5% dextrose in normal saline.
(1+2+4 = 7 marks)
4. Explain the following terms with an example wherever necessary:
4A. Succinylcholine apnoea.
4B. Dissociative anaesthesia.
4C. Mucolytics.
4D. Bacteriostatic.
4E. Postural hypotension.
(2×5 = 10 marks)
5. Write briefly on:
5A. Preanaesthetic medication.
5B. Gentamicin.
5C. Loop diuretics.
5D. H₁ blockers.
(4×4 = 16 marks)
6. Giving an indication, explain the pharmacological basis for the use of following drugs:
6A. Propranolol
6B. Digoxin
6C. Streptokinase.
6D. Nitroglycerine
6E. Scopolamine.
(3×5 = 15 marks)

7. Answer the following:

- 7A. Enumerate four drugs used in bronchial asthma. Explain the mechanism of action of any one.
- 7B. Enlist four tetracyclines. Mention four adverse effects of them.
- 7C. Define local anaesthetic. List four techniques of administration of local anaesthetics. Explain why adrenaline is combined with local anaesthetic.

$((2+2)+(2+2)+(1+2+2)) = 13$ marks)

8. Name two drugs used in the following conditions.

- 8A. Glaucoma.
- 8B. Myasthenia gravis.
- 8C. Post-operative pain.
- 8D. Insomnia.

$(1 \times 4 = 4)$ marks)

9. Mention one use and one adverse effect for each of the following drugs:

- 9A. Codeine.
- 9B. Thiopentone sodium.
- 9C. Erythromycin.
- 9D. Captopril.

$(1 \times 4 = 4)$ marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY/JUNE 2006**SUBJECT: RESPIRATORY THERAPY SCIENCE - I**

Monday, June 05, 2006

Time: 3 Hrs.

Max. Marks: 80

Answer ALL questions. Draw diagrams wherever necessary.

1. Mention the principle used in pulse oximetry using a schematic diagram. List the indications and complications of pulse oximetry. Which are the common sites for monitoring SpO₂? Mention the factors affecting the accuracy of pulse oximeters.

(4+4+4+4 = 16 marks)

2. Define flowmeters. With the help of a neat diagram, mention the working principle of a flowmeter. Briefly describe the different types of flowmeters available. Explain how flow is affected in flow meters when gases like Helium and Nitrogen are used other than the specified gas.

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

3. Write brief notes on:

3A. Medical gas pipelines.

3B. Oxygen cascade.

3C. Electrochemical oxygen analyser.

3D. Pressure regulators.

3E. Boyle's law, Charle's, Dalton's law and Henry's law and their application in respiratory therapy.

3F. Monitoring of patient on oxygen therapy.

(8×6 = 48 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION

(Deemed University)

FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY/JUNE 2006**SUBJECT: PATIENT CONTACT TECHNIQUES**

Tuesday, June 06, 2006

Time: 3 Hrs.

Max. Marks: 80

Answer ALL questions. Draw diagrams wherever necessary.

1. Give the indications, complications and contra indications of endotracheal suctioning. Describe briefly about endotracheal suctioning procedure.
(10+6 = 16 marks)
2. What are the different types of breathing exercises? Mention the significance of breathing exercises for a post operative patient.
(10+6 = 16 marks)
3. Write short notes on:
 - 3A. Normal values and give one abnormal condition.
 - i) Platelet count
 - ii) Red Blood Cell count
 - iii) Blood urea nitrogen
 - iv) Albumin(2×4 = 8 marks)
 - 3B. Significance bronchopulmonary segments.
(8 marks)
 - 3C. Isolation procedures.
(8 marks)
 - 3D. Adventitious breath sounds.
(8 marks)
 - 3E. Clinical history taking.
(8 marks)
 - 3F. Basic Life Support.
(8 marks)

