

MANIPAL UNIVERSITY
FIRST YEAR B.Sc. M.L.T./ B.Sc. N.M.T./ B.Sc. R.T./ B.Sc. M.I.T./ B.Sc. C.V.T.
DEGREE EXAMINATION – MAY/JUNE 2012

SUBJECT: ANATOMY

Tuesday, May 29, 2012

Time: 10.00-11.30 Hrs.

Max. Marks: 40

✍ **Answer ALL the questions.**

1. Name the parts of urinary system. Describe the right kidney.

(2+6 = 8 marks)

2. Name the parts of gastrointestinal tract. Describe the stomach in detail.

(2+6 = 8 marks)

3. **Write briefly on:**

3A. Panaceas

3B. Testis

3C. CSF circulation

3D. Fallopian tube

3E. Structure of a typical synovial joint

3F. Arch of aorta

3G. Trachea

3H. Thin skin

(3×8 = 24 marks)



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FIRST YEAR B.O.T. /B.Sc. M.L.T./B.Sc. C.V.T/ B.Sc. MIT/ B.Sc. R.T./B.Sc. N.M.T/
B.Sc. OPT. DEGREE EXAMINATION – MAY/JUNE 2012

SUBJECT: PHYSIOLOGY

Thursday, May 31, 2012

Time: 10.00-11.30 Hours.

Max. Marks: 40

✍ **Answer ALL questions. Draw diagrams wherever necessary.**

1. Essay questions:

- 1A. Draw a labeled diagram of the nerve action potential. Mention the ionic basis for the different phases.
- 1B. In the form of a flow chart write the sequence of events occurring during the excitation contraction on coupling of a skeletal muscle.
- 1C. Describe the changes seen in the ovary during menstrual cycle.
- 1D. Explain the various types of movements in the small intestine.

(5×4 = 20 marks)

2. Write short answers for the following:

- 2A. What are anticoagulants? Mention any two anticoagulants.
- 2B. Mention any two functions of basal ganglia.
- 2C. Write any two properties of cardiac muscle.
- 2D. Define cardiac output and give the normal value.
- 2E. Define alveolar ventilation and pulmonary ventilation.
- 2F. Name the hormones of posterior pituitary. Mention one action of any one hormone
- 2G. Mention the cause and two features of clinical features of diabetes mellitus.
- 2H. Define GFR and mention the normal value.
- 2I. Draw a diagram to depict a reflex arc.
- 2J. List any two common errors of refraction. Describe any one.

(2×10 = 20 marks)



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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 – MAY/JUNE 2012

SUBJECT: BIOCHEMISTRY

Saturday, June 02, 2012

Time: 10.00-11.30 Hours

Max. Marks: 40

✍ **Answer ALL the questions.**

✍ **Draw diagrams and flow charts wherever appropriate.**

1. Discuss β -oxidation of palmitic acid under the following headings:

1A. Site and sub-cellular site

1B. Activation and transport

1C. Reactions

(1+3+4 = 8 marks)

2. Describe the complete digestion of carbohydrates in the GIT.

(6 marks)

3. **Answer the following:**

3A. Explain with diagrams the secondary structure of proteins.

3B. Define isoenzymes and explain the isoenzymes of LDH with its clinical significance.

3C. Write the reactions of the four key enzymes of gluconeogenesis.

3D. Discuss the RDA, sources and biochemical functions of vitamin D.

(4×4 = 16 marks)

4. **Answer the following:**

4A. Define steatorrhea and give its causes.

4B. Write a note on the regulation of glycolysis.

4C. Classify amino acids based on nutritional requirement with ONE example each.

4D. Define specific dynamic action of food and give values for the major macronutrients.

4E. Give normal serum levels of glucose in fasting and post-prandial states.

(2×5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY/JUNE 2012****SUBJECT: PHARMACOLOGY**

Tuesday, June 05, 2012

Time: 10.00-13.00 Hrs.

Max. Marks: 80

1. Explain the following terms with an examples:

- 1A. Tachyphylaxis
- 1B. Mucolytic
- 1C. Synergism.

(2×3 = 6 marks)

- 2A. Calculate the amount of ingredients required to prepare 5L of 5% Dextrose in $\frac{1}{2}$ N saline.
- 2B. Explain two factors which affect the bioavailability.
- 2C. Give two examples each for drugs which are derived from plant and animal.

(4+4+2 = 10 marks)

- 3A. Enumerate three methods of prolonging drug action with an example for each.
- 3B. Explain the effects of atropine on gastrointestinal tract and eye.
- 3C. Name two uses of cholinomimetic drugs. Explain the basis for its use in any one of them.

(3+3+2 = 8 marks)

- 4A. Enumerate four antihypertensive agents based on their site of action and give one example for each.
- 4B. Mention two drugs used in anaphylactic shock with route of administration of them.

(4+2 = 6 marks)

5. Write briefly on:

- 5A. Inhalational steroids.
- 5B. Sodium cromoglycate.
- 5C. Tetracyclines.

(4×3 = 12 marks)

6. Mention one drug used for the following conditions and explain the basis for its use.

- 6A. Methanol poisoning.

- 6B. Diazepam overdose.
- 6C. Benign prostatic hypertrophy.
- 6D. Malignant hyperthermia.

(2×4 = 8 marks)

- 7A. Classify opioid analgesics with an example.
- 7B. Explain two factors that influences induction anaesthesia.
- 7C. Mention two H₁ antihistaminics and two uses of them.

(3+4+2 = 9 marks)

- 8A. Mention three groups of drugs used in angina with an example for each group.
- 8B. Mention two H₂ blockers and two uses of them.
- 8C. Classify neuromuscular blockers with examples.

(3+2+3 = 8 marks)

- 9A. Classify semisynthetic penicillins with an example. Mention two uses of penicillin G.
- 9B. Explain the term chemoprophylaxis with suitable example.

(4+2 = 6 marks)

- 10A. Enumerate four bronchodilators. Explain the mechanism of action and mention two adverse effects of any one of them.
- 10B. Explain the neural control of bronchial smooth muscle tone.

(4+3 = 7 marks)



MANIPAL UNIVERSITY
FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY/JUNE 2012

SUBJECT: PATIENT CONTACT TECHNIQUES

Thursday, June 07, 2012

Time: 10.00-13.00 Hrs.

Max. Marks: 80

1. What are vital signs? Enumerate four vital signs and list their normal values (with units). Discuss the clinical significance of an increase and decrease in each of these vital signs.

(2+4+10 = 16 marks)

2. With the help of diagrams describe the bronchopulmonary segments of the lungs. Mention the patient position for the drainage of secretions from following segments:

- 2A. Anterior segment of right upper lobe
- 2B. Posterior segment of left lower lobe
- 2C. Lateral segment of right middle lobe
- 2D. Superior segment of left lower lobe

(8+8 = 16 marks)

3. Write short note on:

- 3A. Abnormal breathing patterns

- 3B. Define following:

- i) Cyanosis
- ii) Capillary refill
- iii) Barrel chest
- iv) Clubbing

- 3C. Technique of endotracheal suctioning.

- 3D. Define "Universal Precautions". What all precautions you will take while handling a patient with active tuberculosis.

- 3E. Breathing exercises.

- 3F. Surface markings of lung fissures.

(8×6 = 48 marks)



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FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY/JUNE 2012

SUBJECT: RESPIRATORY THERAPY SCIENCE – I

Saturday, June 09, 2012

Time: 10:00-13:00 Hrs.

Max. Marks: 80

✍ **Draw diagrams wherever necessary.**

✍ **Answer to the question and avoid padding of answers.**

1. What are the different types of aerosol therapy devices? Explain in detail the characteristics of aerosol. Explain with diagram any one aerosol therapy device.

(2+6+8 = 16 marks)

2. What are the goals of oxygen therapy? Write briefly on oxygen toxicity. Classify and write briefly about oxygen therapy devices.

(4+4+8 = 16 marks)

3. **Write short notes on:**

3A. Pressure regulators.

3B. Oxygen analyzers. Describe any one type.

3C. Different types of humidifiers.

3D. Membrane oxygen concentrator.

3E. Tracheostomy tube.

3F. Manual resuscitators.

(8×6 = 48 marks)

