

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 2009****SUBJECT: ANATOMY**

Monday, May 18, 2009

Time: 10.00-11.30 Hrs.

Max. Marks: 40

1. List the parts of female reproductive system. Describe the position, parts, relations and blood supply of the uterus.

(2+1+2+2+1 = 8 marks)

2. Explain the arterial supply and venous drainage of the heart.

(4+4 = 8 marks)

3. Answer briefly on:
 - 3A. Skeletal muscle.
 - 3B. Nasal septum.
 - 3C. Superior vena cava.
 - 3D. Nerve supply of tongue.
 - 3E. Ureter.
 - 3F. Right suprarenal gland.
 - 3G. Cerebrospinal fluid.
 - 3H. Corpus callosum.

(3×8 = 24 marks)



Reg. No.

MANIPAL UNIVERSITY
FIRST YEAR B.P.T./B.O.T./B.Sc.M.L.T./B.Sc.N.M.T/B.Sc.R.T.T.
DEGREE EXAMINATION – MAY 2009

SUBJECT: PHYSIOLOGY

Tuesday, May 19, 2009

Time: 10.00-13.00 Hours.

Max. Marks: 80

1. Explain the functions of different areas of cerebral cortex. (10 marks)
2. Describe mechanism of breathing. (10 marks)
3. Write briefly on the following:
 - 3A. Enumerate any four properties of cardiac muscle. Explain briefly any two of them.
 - 3B. Define venous return. Name any four factors influencing venous return. Explain how venous return affects cardiac output.
 - 3C. Draw and label the diagram of the cross section of the human eye. Mention the functions of any two structures.
 - 3D. Explain the actions of thyroid hormones on growth and development.
 - 3E. Mention the function of T-tubules and terminal cisternae of sarcotubular system. What are the sources of energy for muscular contraction?
 - 3F. Describe the structure and functions of the respiratory membrane.
 - 3G. Describe the functions of basal ganglia. Mention the clinical features of a disease due to a lesion in it.
 - 3H. Draw and label the normal electrocardiogram. Write a note on P-R interval. (5×8 = 40 marks)
4. Write short answer to each of the following:
 - 4A. Mention two actions of estrogen.
 - 4B. Define deglutition. Mention the stages of deglutition.
 - 4C. What is hemophilia? What is its cause?
 - 4D. How much is the normal body temperature? Name ONE change in the body when exposed to cold.
 - 4E. Mention the effects of sectioning of a motor nerve.
 - 4F. List the functions of placenta.
 - 4G. List the hormones which increase blood glucose level.
 - 4H. Name the lymphatic organs in the body. Mention the function of one of them.
 - 4I. What is meant by oxygen carrying capacity of blood? Give its normal value.
 - 4J. Mention the functions of saliva. (2×10 = 20 marks)



MANIPAL UNIVERSITY**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./B.Sc.C.V.T****DEGREE EXAMINATION – MAY 2009****SUBJECT: BIOCHEMISTRY
(NEW REGULATIONS)**

Wednesday, May 20, 2009

Time: 10.00-11.30 Hours

Max. Marks: 40

1. Explain the β -oxidation of palmitic acid. Add note on its energetic. (5+2 = 7 marks)
2. Describe the pathway of urea synthesis. Mention the disorders of urea cycle with defect. (4+2 = 6 marks)
3. Give an account of glycogen metabolism. (3+3 = 6 marks)
4. Discuss protein energy malnutrition in detail. (7 marks)
5. Explain how substrate concentration affects enzyme activity. (4 marks)
6. Write the steps involved in the activation of vitamin D in the body. (3 marks)
7. Write note on Dietary Fibers. (3 marks)
8. Explain Essential fatty acids under the following Definition, examples and functions. ($\frac{1}{2}+1+2\frac{1}{2} = 4$ marks)



MANIPAL UNIVERSITY**FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY 2009****SUBJECT: PHARMACOLOGY**

Thursday, May 21, 2009

Time: 10.00-13.00 Hrs.

Max. Marks: 80

- 1A. Define the term mucokinetic with two examples.
- 1B. Name two inhalational and two systemic steroids used in bronchial asthma.
- 1C. Mention an important adverse effect of inhalational steroids and add a note on methods adapted to prevent the same.
- 1D. Name two drugs contraindicated in bronchial asthma.
- (2+2+2+1 = 7 marks)
- 2A. Define the following terms:
- Bioavailability
 - Prodrug
 - Biotransformation
- 2B. Explain two factors that modify drug action.
- 2C. Define the term enzyme induction with two examples.
- (3+4+2 = 9 marks)
3. Calculate the amounts of ingredients required to prepare 3L of 5% dextrose in double strength saline.
- (4 marks)
- 4A. Define the term sedative.
- 4B. Name two benzodiazepines.
- 4C. Mention two uses of benzodiazepines.
- 4D. Mention two advantages of benzodiazepines over barbiturates.
- 4E. Explain the basis for the use of sodium bicarbonate in barbiturate poisoning.
- (1+1+1+2+2 = 7 marks)
- 5A. Classify antimicrobial agents based on the mechanisms of action.
- 5B. Define the following terms with an example.
- Bacteriostatic
 - Chemoprophylaxis
- 5C. List four aminoglycoside antibiotics. Mention two shared toxicities of them.
- 5D. Explain the basis for combining probenecid with penicillin G.
- (4+3+3+2 = 12 marks)

6A. List four classes of antihypertensive agents with two examples for each class. Explain the mechanism of action of any one class.

6B. Explain the basis for using streptokinase in myocardial infarction.

(8+2 = 10 marks)

7A. List four anticholinergics.

7B. Mention two uses of anticholinergic drugs and explain the basis for any one of the mentioned use.

7C. Mention two adverse effects and two contraindications of anticholinergics.

(2+3+2 = 7 marks)

8. Write briefly on:

8A. Uses and adverse effects of Aspirin.

8B. Ranitidine

8C. Sodium cromoglycate

8D. Drug antagonism.

(4×4 = 16 marks)

9. Explain the pharmacological basis for the following:

9A. Adrenaline in anaphylactic shock.

9B. Neostigmine in myasthenia gravis.

9C. Salbutamol in bronchial asthma.

9D. Ethanol in methanol poisoning.

(2×4 = 8 marks)



MANIPAL UNIVERSITY**FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY 2009****SUBJECT: RESPIRATORY THERAPY SCIENCE – I**

Friday, May 22, 2009

Time: 10.00-13.00 Hrs.

Max. Marks: 80

✍ Draw diagrams wherever necessary.**✍ Answer to the question and avoid padding of answers.**

1. Define aerosol and state the aim of medical aerosol therapy? What are the different mechanisms of aerosol deposition? What are the types of aerosol delivery devices? Write a short note on jet nebulizer.

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

2. Define oxygen flux and oxygen cascade? What are the different steps in oxygen cascade? Calculate the partial pressure of arterial oxygen of patient breathing 50% oxygen (dry gas mixture) when

- i) PaCO₂ is 40 mmHg
ii) PaCO₂ is 60 mmHg.

(2+2+8+2+2 = 16 marks)

3. Write short notes on:

- 3A. Manual resuscitators.
3B. Nasopharyngeal airway.
3C. Dalton's law of partial pressure and its two applications.
3D. Medical gas pipeline supply system.
3E. Pulse oximeter.
3F. High airflow oxygen enrichment devices (HAFOE).

(8×6 = 48 marks)



MANIPAL UNIVERSITY
FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – MAY 2009
SUBJECT: PATIENT CONTACT TECHNIQUES

Saturday, May 23, 2009

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 three elements that must be present for the spread of infection? What are the two infection control strategies? What are the precautions you would take before performing sterile procedure of suctioning for a retro-positive patient?

(6+6+4 = 16 marks)

2. What are the factors influencing communication? What are the components of medical history taking? List two pulmonary symptoms and explain each in detail.

(6+6+2+2 = 16 marks)

3. Short notes:

3A. Write in step wise fashion how you would examine the thorax and lungs of a patient in cardiac intensive care unit.

3B. A patient comes to the intensive care unit with the following vitals signs: heart rate of 125/min, blood pressure of 150/ 111 mm Hg, respiratory rate of 40/min, SpO₂ of 73%. Comment on the vital signs.

3C. What are the type of questions you should ask and what are the kind of questions one should avoid during an interview? Why is it important for the interviewer to establish a good rapport with the patient?

3D. Five point auscultation.

3E. What are the increased and decreased numbers of all types of blood cells called?

3F. What are korotkoff's sounds? What are the two methods of measuring blood pressure?

(8×6 = 48 marks)

