MANIPAL UNIVERSITY

FIRST YEAR B.Sc. R.T./ B.Sc. M.I.T./B.Sc.C.V.T. DEGREE EXAMINATION – AUGUST 2009

SUBJECT: ANATOMY

Wednesday, August 05, 2009

Time: 10.00-11.30 Hrs.   Max. Marks: 40

1.   Describe the boundaries of the mediastinum and list its contents.

(4+4 = 8 marks)

2.   Describe the parts, relations and blood supply of pancreas.

(2+4+2 = 8 marks)

3.   Answer briefly on:

3A.   Classify cartilage with examples

3B.   Nasal septum

3C.   Right atrium

3D.   Prostate

3E.   Pituitary gland

3F.   Position, relations and blood supply of left suprarenal gland

3G.   External features of medulla oblongata

3H.   Internal capsule.

(3×8 = 24 marks)

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MANIPAL UNIVERSITY
FIRST YEAR B.P.T./B.Sc.M.L.T./B.Sc.R.T. DEGREE EXAMINATION – AUGUST 2009
SUBJECT: PHYSIOLOGY
Thursday, August 06, 2009

Time: 10.00-13.00 Hours.   Max. Marks: 80

1. Define the terms systolic and diastolic blood pressures. Give their normal values. Explain the role of baroreceptors in the regulation of blood pressure.

(10 marks)

2. Name two ascending and two descending tracts. Mention the function of each tract. Trace the pathway of any one. State two differences between upper motor neuron and lower motor neuron lesions.

(10 marks)

3. Short essays:

3A. In the form of a flow chart describe the intrinsic and extrinsic pathways of blood clotting.

3B. Draw a labelled diagram of a neuron. Explain the functions of different parts.

3C. Describe the composition and functions of saliva.

3D. Explain how oxygen is transported in the body.

3E. What causes acromegaly and cretinism? Mention two clinical features of each of these conditions.

3F. Outline the mechanism of urine formation.

3G. Explain the mechanism of hearing.

3H. Mention the different types of transport mechanisms that occur across a cell membrane. Explain any one.

(5×8 = 40 marks)

4. Write short answer to each of the following:

4A. Define the following terms and give their normal values
    i) Tidal volume
    ii) Stroke volume

4B. Define 'muscle fatigue'. Mention the cause fatigue.

4C. Mention the functions of middle ear.

4D. State the functions of platelets.

4E. Mention two clinical features of Parkinson's disease.

4F. What is the normal heart rate? Mention two factors that increase heart rate.

4G. Mention two actions of cortisol. Name the condition that results due to excess cortisol production.

4H. Enumerate the changes that occur when one is exposed to hot environment.

4I. Give the components of bile.

4J. Mention two actions of testosterone.

(2×10 = 20 marks)

MANIPAL UNIVERSITY

FIRST YEAR B.P.T./ B.Sc. R.T./ B.Sc.C.V.T DEGREE EXAMINATION – AUGUST 2009

SUBJECT: BIOCHEMISTRY
(NEW REGULATIONS)

Friday, August 07, 2009

Time: 10.00-11.30 Hours   Max. Marks: 40

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1. Classify enzymes giving one example for each class.

                                                                    (6 marks)

2. Describe the biochemical changes occurring after intake of milk in a person with lactose intolerance.

                                                                    (4 marks)

3. Write the reactions of the citric acid cycle.

                                                                    (6 marks)

4. Describe the process of digestion of dietary lipids in the GI tract.

                                                                    (5 marks)

5. Classify amino acids on the basis of their metabolic fate giving examples for each class.

                                                                    (3 marks)

6. Give the steps involved in the beta oxidation of palmitic acid.

                                                                    (6 marks)

7. Define dietary fibers and describe their role in nutrition.

                                                                    (3 marks)

8. Give the dietary sources, RDA and describe the absorption of iron.

                                                                    (3 marks)

9. Mention the normal serum levels and one condition in which they are altered for glucose, protein, urea and cholesterol.

                                                                    (4 marks)

MANIPAL UNIVERSITY
FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – AUGUST 2009
SUBJECT: PHARMACOLOGY
Saturday, August 08, 2009

Time: 10.00-13.00 Hrs.   Max. Marks: 80

1A. Enumerate different routes of drug administration.

1B. List two advantages and two disadvantages of any one route.

1C. Define the term bioavailability with example.

                                                        (2+2+2 = 6 marks)

2A. List four anticholinergic drugs.

2B. Explain two uses with the basis of the prototype drug.

                                                        (2+6 = 8 marks)

3A. Explain the term antitussive with example.

3B. Name a mast-cell stabilizer and explain it's role in bronchial asthma.

3C. Mention two inhalational steroids used in bronchial asthma and mention two adverse effects
     of the same.

                                                        (2+3+2 = 7 marks)

4.   Write briefly on the following:

4A. B$_2$ agonists

4B. Uses and adverse effects of Aspirin

4C. Enalapril.

                                                        (4×3 = 12 marks)

5A. Classify local anesthetics with examples.

5B. Mention different techniques of local anaesthesia.

5C. Explain the basis of combining adrenaline with local anesthetics.

                                                        (3+2+2 = 7 marks)

6A. Mention four aminoglycoside antibiotics.

6B. Mention four shared toxicities of these drugs.

6C. Define the term bacteriostatic and bacteriocidal

                                                        (2+2+2 = 6 marks)

7.   Giving an indication, explain the pharmacological basis for the use of the following drugs.

7A. Glyceryltrinitrate.

7B. Ranitidine

7C. Prazosin

7D. Digoxin

7E. Codeine.

<div align="right">(3×5 = 15 marks)</div>

8. Calculate the amount of ingredients required to prepare 500ml of 25% dextrose in normal saline.

<div align="right">(4 marks)</div>

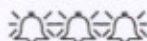9. Write two uses and two adverse effects of the following drugs.

9A. Morphine

9B. Frusemide

9C. Tetracycline

9D. Prednisolone

9E. Warfarin

<div align="right">(2×5 = 10 marks)</div>

10. Mention two drugs belonging to the following:

10A. Skeletal muscle relaxants.

10B. Leukotriene antagonists

10C. Expectorants

10D. H₁ blockers

10E. Benzodiazepines.

<div align="right">(1×5 = 5 marks)</div>

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

Monday, August 10, 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 vital signs. Enumerate the different vital signs. Write the causes of increase and decrease of each vital sign. Write Glasgow Coma Scale in detail.

(2+4+6+4 = 16 marks)

2.   Define Endotracheal Suction. Write the steps of endotracheal suction in detail. What are the complications of endotracheal suction?

(2+8+6 = 16 marks)

3.   Write short notes on:

3A.   Different methods of measuring chest expansion.

3B.   Bronchopulmonary segments.

3C.   Lung sounds.

3D.   Abnormal breathing patterns.

3E.   Pulmonary symptoms in COPD patients.

3F.   Inspiratory breathing exercise.

(8×6 = 48 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. R.T. DEGREE EXAMINATION – AUGUST 2009

SUBJECT: RESPIRATORY THERAPY SCIENCE – I

Tuesday, August 11, 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 venturi principle. What are the different parts of a venturi device? Mention the various oxygen percentages that are delivered using venturi devices and the oxygen flows that need to be set. Describe the calculation of the required gas flows with a venturi device. List the complications of oxygen therapy.

    (2+4+3+3+4 = 16 marks)

2. Write the indications of humidification and warming of inspired gases. List the physical principles on which humidifiers work. What are the different types of humidifiers and explain them in detail?

    (4+4+2+6 = 16 marks)

3. Write short notes on:

3A. Oropharyngeal airways

3B. Poiseuilles law

3C. Alarm systems of central piping system

3D. Electrochemical analyzer

3E. Ultrasonic nebuliser

3F. Nasal cannula

    (8×6 = 48 marks)