

RAT & DT

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.L.T./B.Sc. N.M.T./B.Sc. R.T./B.Sc. M.R.T./B.Sc. M.I.T./ B.Sc. C.V.T./
B.Sc. R.R.T & D.T./M.Sc. N.M.T.

FIRST SEMESTER B OPTOM./B.Sc. H.I.A./ B.Sc. P.F.T.

DEGREE EXAMINATION – JUNE 2014

SUBJECT: ANATOMY/GENERAL ANATOMY

Tuesday, June 03, 2014

Time: 10.00-11.30 Hrs.

Max. Marks: 40

Answer ALL the questions.

1. Name the parts of respiratory system. Describe the right lung in detail.

(5+5 = 10 marks)

2. Write short notes on the following:

- 2A. Spermatic cord
- 2B. Pericardium
- 2C. Gall bladder
- 2D. Spinal cord
- 2E. Tongue
- 2F. Fibrous joints

(5 marks × 6 = 30 marks)



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**FIRST YEAR BOT/B.Sc. MLT/B.Sc. CVT/B.Sc. MIT/B.Sc. RT/B.Sc. NMT/
B.Sc. RRT & DT/B.Sc. MRT/M.Sc. NMT DEGREE EXAMINATION – JUNE 2014**

SUBJECT: PHYSIOLOGY

Thursday, June 05, 2014

Time: 10.00-11.30 Hours.

Max. Marks: 40

Answer ALL questions. Draw diagrams wherever necessary.

1. Essay questions:

- 1A. Define cardiac output. Give its normal value and describe the factors regulating cardiac output.
- 1B. List any five actions of thyroid hormones.
- 1C. Define erythropoiesis. Mention its stages and list any two factors regulating it.
- 1D. Define a reflex. Draw a neat labeled diagram of a reflex arc.

(5 marks × 4 = 20 marks)

2. Write short answers for the following:

- 2A. Write any two differences between simple diffusion and facilitated diffusion.
- 2B. Draw a neat labeled diagram of a neuron.
- 2C. List any four hormones secreted by anterior pituitary.
- 2D. Name the two divisions of autonomic nervous system.
- 2E. Mention any two contraceptive methods in males.
- 2F. List two functions of liver.
- 2G. Mention the location of rods and cones. State one function of each.
- 2H. Classify hypoxia.
- 2I. Define GFR and give its normal value.
- 2J. Draw a labeled diagram of a sarcomere.

(2 marks × 10 = 20 marks)



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FIRST YEAR BPT/BOT/B.Sc. MLT/ B.Sc. NMT/B.Sc. RT/B.Sc. MIT/B.Sc. CVT/ B.Sc. RRT & DT/M.Sc. NMT

DEGREE EXAMINATION – JUNE 2014

SUBJECT: BIOCHEMISTRY

Saturday, June 07, 2014

Time: 10.00-11.30 Hours

Max. Marks: 40

☞ Answer ALL the questions.

☞ Draw diagrams and flow charts wherever appropriate.

1. Explain gluconeogenesis under the following headings:

1A. Site and subcellular site

1B. Reactions of synthesis of glucose from lactate

(1+7 = 8 marks)

2. Classify enzymes giving one example for each class.

(6 marks)

3. Write short notes on the following:

3A. Structure of starch

3B. Reactions of β -oxidation of fatty acyl CoA

3C. Four differences between DNA and RNA

3D. Classification and functions of lipoproteins

(4 marks \times 4 = 16 marks)

4. Answer the following:

4A. Define and write the normal values of BMR

4B. Name two essential fatty acids and write their functions

4C. Write the normal serum levels of total protein, creatinine, calcium and urea

4D. List four differences between kwashiorkor and Marasmus

4E. Mention the fate of the end product of glycogenolysis in liver and muscle

(2 marks \times 5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR B.Sc. RRT & DT DEGREE EXAMINATION – JUNE 2014**
SUBJECT: BDT 104 – OVERVIEW OF RENAL FAILURE AND BASICS OF DIALYSIS THERAPY, RENAL REPLACEMENT THERAPY

Tuesday, June 10, 2014

Time: 10.00-13.00 Hrs.

Max. Marks: 80

1. Long essay questions:

- 1A. Describe the functions of the kidney.
- 1B. What are the vascular access options for chronic Hemodialysis? Describe the complications of AVfistula.
- 1C. Illustrate the clotting pathway and indicate the site of action of heparin. What are the side effects of heparin therapy?

(10 marks × 3 = 30 marks)

2. Short essay questions:

- 2A. What is convection? Describe its importance in renal replacement therapy.
- 2B. Briefly describe the PD regimes used in endstage renal disease.
- 2C. Describe the indications for epoetin therapy and how it is monitored.
- 2D. Classify AKI and briefly describe the RRT methods used in the management of AKI.
- 2E. Define hypertension and describe the stages of hypertension.
- 2F. Describe the importance of blood grouping and crossmatching.

(5 marks × 6 = 30 marks)

3. Write short notes on:

- 3A. What is ultrafiltration?
- 3B. What is the normal serum osmolality and how is it maintained?
- 3C. What are the complications of AKI?
- 3D. List the renal hormones and their actions briefly.
- 3E. What are the indications for Hemodialysis?
- 3F. What is plasmapheresis?
- 3G. What are the causes for anemia in CKD?
- 3H. Name four causes of hypotension in the Hemodialysis patient.
- 3I. What are the actions of Vitamin D?
- 3J. How does the rennin angiotensin system help in maintaining ECF volume?

(2 marks × 10 = 20 marks)



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B.Sc. R.R.T & D.T. DEGREE EXAMINATION – AUGUST 2014**

SUBJECT: ANATOMY

Monday, August 25, 2014

Time: 10.00-11.30 Hrs.

Max. Marks: 40

Answer ALL the questions.

1. Name the parts of female reproductive system. Describe the uterus.

(5+5 = 10 marks)

2. **Write short notes on the following questions:**

2A. Hyaline cartilage

2B. Testis

2C. Pancreas

2D. Ureter

2E. Corpus callosum

2F. Oesophagus

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY

FIRST YEAR BOT/B.Sc. MLT/B.Sc. CVT/B.Sc. MIT/B.Sc. RT/B.Sc. NMT/
B.Sc. RRT & DT/B.Sc. MRT DEGREE EXAMINATION – AUGUST 2014

SUBJECT: PHYSIOLOGY

Tuesday, August 26, 2014

Time: 10.00-11.30 Hours.

Max. Marks: 40

✍ Answer ALL questions. Draw diagrams wherever necessary.

1. Essay Questions:

- 1A. Draw and label the oxygen- hemoglobin dissociation curve. Mention any two factors that shift the curve to the right.
- 1B. Define blood pressure. Describe the regulation of blood pressure by baroreceptor mechanism.
- 1C. Mention any five functions of hypothalamus.
- 1D. Name the hormones of posterior pituitary. Describe their actions.

(5 marks × 4 = 20 marks)

2. Write short answers for the following:

- 2A. Mention any two functions of plasma proteins.
- 2B. Mention the normal range of platelet count and list any one function of platelets.
- 2C. Mention two functions of large intestine.
- 2D. List two functions of aqueous humor.
- 2E. Name the permanent methods of contraception in males and females.
- 2F. Mention the two divisions of autonomic nervous system. Mention one action of any one division.
- 2G. Name the two types of smooth muscle. Give an example for each type.
- 2H. Define resting membrane potential. Mention the RMP of a neuron.
- 2I. Mention two functions of kidneys.
- 2J. Mention the cause of myopia. Name the correction lens used to treat myopia.

(2 marks × 10 = 20 marks)



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MANIPAL UNIVERSITY**FIRST YEAR BPT/BOT/B.Sc. MLT/B.Sc. NMT/B.Sc. RT/B.Sc. MIT/B.Sc. CVT/B.Sc. RRT & DT
DEGREE EXAMINATION – AUGUST 2014****SUBJECT: BIOCHEMISTRY**

Wednesday, August 27, 2014

Time: 10.00-11.30 Hours

Max. Marks: 40

1. Discuss aerobic glycolysis under the following headings:
 - 1A. Definition
 - 1B. Site and subcellular site
 - 1C. Steps with all the enzymes and coenzymes

(1+1+6 = 8 marks)

2. Write RDA, sources, biochemical functions and disorders of vitamin D.

(6 marks)

3. **Write short notes on the following:**
 - 3A. Lactose intolerance
 - 3B. Site of synthesis and functions of lipoproteins
 - 3C. Components of electron transport chain
 - 3D. Metabolic acidosis

(4 marks × 4 = 16 marks)

4. **Answer the following:**
 - 4A. Define essential amino acids with two examples.
 - 4B. List four differences between DNA and RNA.
 - 4C. Give four functions of dietary fibers.
 - 4D. Define basal metabolic rate and mention two factors affecting BMR.
 - 4E. Mention four features of marasmus.

(2 marks × 5 = 10 marks)



MANIPAL UNIVERSITY**FIRST YEAR B.Sc. RRT & DT DEGREE EXAMINATION – AUGUST 2014****SUBJECT: BDT 104 – OVERVIEW OF RENAL FAILURE AND BASICS OF DIALYSIS THERAPY, RENAL REPLACEMENT THERAPY**

Thursday, August 28, 2014

Time: 10.00-13.00 Hrs.

Max. Marks: 80

1. Long essay questions:

- 1A. What are the different types of AV Fistula? Describe the complications of AV Fistula.
- 1B. Describe the principles of solute transfer.
- 1C. Illustrate the Vitamin D pathway and highlight the role of the kidney in this process.

(10 marks × 3 = 30 marks)

2. Short essay questions:

- 2A. Describe the principles of CAPD.
- 2B. Classify AKI as per RIFLE criteria.
- 2C. Name the tests done to investigate anemia in the dialysis patient and their principles.
- 2D. How is GFR measured?
- 2E. Describe the pre transplant evaluation of the recipient.
- 2F. Describe how blood group testing is carried out.

(5 marks × 6 = 30 marks)

3. Short note questions:

- 3A. What is serum osmolality?
- 3B. List the complications of vascular hemodialysis catheter.
- 3C. List the actions of the hormone PTH.
- 3D. List the types of Erythropoiesis stimulating agents (ESA) with examples.
- 3E. What are the types of CRRT?
- 3F. Mention the causes of tachycardia in the hemodialysis patient.
- 3G. How can contrast nephropathy be prevented?
- 3H. Briefly describe the blood supply to the kidney.
- 3I. Name four complications of endstage kidney disease.
- 3J. How is hyperkalemia treated?

(2 marks × 10 = 20 marks)

