

RRT&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. DEGREE EXAMINATION – JUNE 2015

SUBJECT: ANATOMY

Tuesday, June 02, 2015

Time: 10.00-11.30 Hrs.

Max. Marks: 40

☞ Answer ALL the questions.

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

(5+5 = 10 marks)

2. Write short notes on:

2A. Spinal cord

2B. Vas deferens

2C. Typical synovial joint

2D. Nasal septum

2E. Ovary

2F. Maxillary air sinus

(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/M.Sc. NMT DEGREE EXAMINATION – JUNE 2015

SUBJECT: PHYSIOLOGY

Thursday, June 04, 2015

Time: 10.00-11.30 Hours.

Max. Marks: 40

✍ Answer ALL questions. Draw diagrams wherever necessary.

1. Essay Questions:

- 1A. Explain the chemical regulation of respiration.
  - 1B. Draw and label an electrocardiogram (ECG) from limb lead II. Indicate any two intervals of ECG. Mention any two uses of ECG.
  - 1C. Mention any two functions of cerebellum. List any three features of cerebellar lesion.
  - 1D. Mention any two actions of growth hormone. List any three clinical features of acromegaly.
- (5 marks × 4 = 20 marks)

2. Write short answers for the following:

- 2A. List any two functions of hemoglobin.
- 2B. List any two functions of white blood cells.
- 2C. Write a note on achalasia cardia.
- 2D. Name the parts of the vestibular apparatus and mention one function of vestibular apparatus.
- 2E. Define blood pressure. Mention the normal systolic and diastolic blood pressure range in a normal adult, at rest.
- 2F. Mention any two functions of skin.
- 2G. Name two indicators of ovulation.
- 2H. Mention two differences between facilitated diffusion and active transport mechanism.
- 2I. Mention two differences between skeletal and cardiac muscles.
- 2J. Give any two differences between rods and cones.

(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/M.Sc. NMT DEGREE EXAMINATION – JUNE 2015

SUBJECT: BIOCHEMISTRY

Saturday, June 06, 2015

Time: 10.00-11.30 Hours

Max. Marks: 40

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☞ Answer ALL the questions.

☞ Draw diagrams and flow charts wherever appropriate.

1. Explain anaerobic glycolysis and add a note on its energetics.

(8 marks)

2. Give a diagrammatic representation of the processes of emulsification and absorption of lipids in the intestine.

(6 marks)

3. Write short notes on the following:

3A. Components of electron transport chain and order of their arrangement

3B. Reactions of  $\beta$ -oxidation in mitochondria

3C. Importance of dietary fibers

3D. Secondary structure of proteins

(4 marks  $\times$  4 = 16 marks)

4. Answer the following:

4A. List four differences between DNA and RNA.

4B. Write two reactions where the coenzyme form of niacin is required.

4C. List the four key enzymes of gluconeogenesis.

4D. Name one condition in which these biochemical parameters are increased in blood: glucose, uric acid, bilirubin and urea.

4E. Define buffer and write the Henderson- Hasselbalch equation.

(2 marks  $\times$  5 = 10 marks)

## MANIPAL UNIVERSITY

FIRST YEAR B.Sc. RRT &amp; DT DEGREE EXAMINATION – JUNE 2015

SUBJECT: BDT 104 – OVERVIEW OF RENAL FAILURE AND BASICS OF DIALYSIS  
THERAPY, RENAL REPLACEMENT THERAPY

Tuesday, June 09, 2015

Time: 10.00-13.00 Hrs.

Max. Marks: 80

## 1. Long essay questions:

- 1A. Describe water treatment for hemodialysis.
- 1B. Briefly explain donor and recipient workup for renal transplantation.
- 1C. Which are the components of the urinary system? Describe longitudinal section of the kidney.  
(10 marks × 3 = 30 marks)

## 2. Short essay questions:

- 2A. What are the types of epoietin available and how is epoietin therapy monitored?
- 2B. Illustrate the extracorporeal blood circuit for hemodialysis.
- 2C. Describe how blood group testing is carried out.
- 2D. What are the complications of end stage renal disease?
- 2E. Classify acute kidney injury and briefly describe the renal replacement therapy methods used in the management of acute kidney injury.
- 2F. Write a note on juxta glomerular apparatus.  
(5 marks × 6 = 30 marks)

## 3. Short notes questions:

- 3A. Define anemia.
- 3B. What is deceased donor transplantation?
- 3C. What are the complications of erythropoietin therapy?
- 3D. What is osmosis?
- 3E. List the important causes of tachycardia.
- 3F. What are the side effects of heparin?
- 3G. What is plasmapheresis?
- 3H. What are the actions of Vitamin D?
- 3I. What is creatinine?
- 3J. Which tests are used to detect clotting abnormalities?  
(2 marks × 10 = 20 marks)

