

MANIPAL UNIVERSITY

**FIRST YEAR B.Sc. M.L.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. DEGREE EXAMINATION – AUGUST 2015**

SUBJECT: ANATOMY

Wednesday, August 26, 2015

Time: 10.00 – 11.30 Hrs.

Max. Marks: 40

✍ Answer ALL the questions.

1. Name the components (parts) of female reproductive system. Describe the position, parts, relations, blood supply and lymphatic drainage of uterus.

(2+8 = 10 marks)

2. **Write short notes on:**

- 2A. Classification and structure of bones
- 2B. Lungs
- 2C. Aorta
- 2D. Anal canal
- 2E. Pituitary gland
- 2F. Lobes and functional areas of cerebral hemisphere

(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 2015**

SUBJECT: PHYSIOLOGY

Thursday, August 27, 2015

Time: 10.00 – 11.30 Hours.

Max. Marks: 40

✍ **Answer ALL questions. Draw diagrams and flow chart wherever appropriate.**

1. Essay Questions:

- 1A. Explain the intrinsic mechanism of blood clotting.
- 1B. Draw and label a normal electrocardiogram from limb lead II and mention the causes for each wave.
- 1C. Mention any three functions of cerebellum. List any two features of cerebellar lesion.
- 1D. List four actions of thyroid hormones. Name the condition that results due to deficiency of thyroid hormones in adults.

(5 marks × 4 = 20 marks)

2. Short Answer Questions:

- 2A. Describe rigor mortis
- 2B. Describe primary active transport mechanism with an example
- 2C. List two features of erythroblastosis fetalis
- 2D. What are the two different forms of carbon dioxide transport in blood?
- 2E. Define cardiac output. Mention its normal value
- 2F. Name the components of vestibular apparatus
- 2G. List any two functions of liver
- 2H. Mention any two actions of testosterone
- 2I. Define glomerular filtration rate. Give its normal value
- 2J. Mention two properties of sensory receptors

(2 marks × 10 = 20 marks)



MANIPAL UNIVERSITY

FIRST YEAR BPT / BOT / B.Sc. MLT / B.Sc. RT / B.Sc. MIT / B.Sc. CVT /
B.Sc. RRT & DT DEGREE EXAMINATION – AUGUST 2015

SUBJECT: BIOCHEMISTRY

Friday, August 28, 2015

Time: 10.00 – 11.30 Hours

Max. Marks: 40

✍ Answer ALL the questions.

✍ Draw diagrams and flow charts wherever appropriate.

1. Explain the oxidation of acetyl CoA in the TCA cycle and add a note on its energetics.
(8 marks)
2. Give a detailed account of the process of emulsification and absorption of lipids in the intestine.
(6 marks)
3. Write short notes on the following:
 - 3A. Classification of lipoproteins based on density and their functions
 - 3B. Ketolysis and its significance
 - 3C. Basal metabolic rate
 - 3D. Differences between DNA and RNA(4 marks × 4 = 16 marks)
4. Write brief answers for the following:
 - 4A. Give the Henderson- Hasselbalch equation of bicarbonate buffer system with normal values of the components.
 - 4B. Give normal serum level of calcium and mention THREE hormones involved in its regulation.
 - 4C. Define essential amino acids with THREE examples.
 - 4D. Classify polysaccharides giving ONE example each.
 - 4E. Describe the effect of temperature on enzyme activity with a suitable graph.
(2 marks × 5 = 10 marks)



Reg. No.																			
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUG/SEP 2015

SUBJECT: DARK ROOM TECHNIQUES

Saturday, August 29, 2015

Time: 10.00 – 13.00 Hrs.

Max. Marks: 80

Answer ALL questions. Each question carries SIXTEEN marks.

1. What are the characteristics of a real image? Explain and give example for each.
2. Why do we need to place the film in cassettes? List the ideal features of a cassette and add a note on cassette construction with the help of a neat diagram.
3. What is Sensitometry? Explain the features of the characteristic curve.
4. Explain the steps involved in manual processing. Add a note on pH scale.
5. **Write short notes on the following:**
 - 5A. Difference between silver halides and metallic silver
 - 5B. Types of cassettes
 - 5C. Reasons for silver recovery
 - 5D. Health & safety in processing areas



Reg. No.										
----------	--	--	--	--	--	--	--	--	--	--

MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUG/SEP 2015

SUBJECT: RADIATION PHYSICS

Monday, August 31, 2015

Time: 10.00 – 13.00 Hrs.

Max. Marks: 80

✍ **Answer ALL questions. Each question carries SIXTEEN marks.**

1. Discuss briefly the principle and types of X-ray generators.
2. Define rectification. Write a note on different types of rectifiers.
3. Explain the following:
 - 3A. Biological effect of radiation
 - 3B. Scintillation detector
4. **Short notes on:**
 - 4A. Air gap technique
 - 4B. Anode heel effect and its significance in medical imaging
5. Discuss in details:
 - 5A. High tension switch
 - 5B. Properties of alpha, beta and gamma rays

