

MANIPAL UNIVERSITY**FIRST YEAR B.Sc. R.T./ B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2012****SUBJECT: ANATOMY**

Tuesday, August 21, 2012

Time: 10.00-11.30 Hrs.

Max. Marks: 40

✍ Answer ALL the questions.

1. Name the parts of urinary system. Explain the position, external features, capsules and relations of the right kidney.

(1+1+2+1+3 = 8 marks)

2. Describe the gross anatomy of the eyeball with the help of a labeled diagram.

(8 marks)

3. **Answer briefly on:**

3A. Cartilage

3B. Para nasal air sinuses

3C. Internal features of larynx

3D. Functional areas of cerebrum

3E. Anal canal

3F. Prostate

3G. Female breast

3H. Suprarenal gland

(3×8 = 24 marks)



MANIPAL UNIVERSITY

FIRST YEAR B.O.T (NR)/B.Sc. M.I.T/ B.Sc. R.T/B.Sc. N.M.T/ DEGREE EXAMINATION – AUGUST 2012

SUBJECT: PHYSIOLOGY

Wednesday, August 22, 2012

Time: 10.00-11.30 Hours.

Max. Marks: 40

✍ **Answer ALL questions. Draw diagrams wherever necessary.**

1. Essay questions:

- 1A. With the help of a schematic diagram, explain the process of intrinsic pathway of blood coagulation.
- 1B. Draw a neat labeled diagram of neuromuscular junction. Describe the events that occur during neuromuscular transmission in the form of flow chart.
- 1C. Mention three functions of middle ear. Describe any one.
- 1D. List any four hormones secreted by anterior pituitary and explain the actions of any one hormone.

(5×4 = 20 marks)

2. Write short answers for the following:

- 2A. Explain facilitated diffusion with an example.
- 2B. Mention two functions of lymph.
- 2C. Discuss two properties of sensory receptors.
- 2D. Define cardiac output. Give its normal value.
- 2E. Mention any two clinical features of Addison's disease.
- 2F. Describe the second stage of deglutition.
- 2G. List two functions of kidneys.
- 2H. What are the different types of hypoxia?
- 2I. Name the receptors for smell and taste. Where are they located?
- 2J. Mention any two actions of progesterone.

(2×10 = 20 marks)



MANIPAL UNIVERSITY

FIRST YEAR B.P.T./B.O.T/B.Sc. R.T./ B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2012

SUBJECT: BIOCHEMISTRY
(COMMON FOR BOTH OR AND NR)

Thursday, August 23, 2012

Time: 10.00-11.30 Hours

Max. Marks: 40

- ✍ **Answer ALL the questions.**
✍ **Draw diagrams and flow charts wherever appropriate.**

1. Describe the synthesis of mature collagen with diagrams. (8 marks)

2. Write the site, subcellular site and reactions of urea cycle. (6 marks)

3. **Write short notes on the following:**

3A. Structure of DNA

3B. FOUR functions each of calcium and phosphorus

3C. Classification of lipids with examples

3D. Reactions of β -oxidation in mitochondria

(4×4 = 16 marks)

4. **Give brief answers for the following:**

4A. Define specific dynamic action and give values for all THREE macronutrients.

4B. Name FOUR physiologically important compounds derived from tyrosine.

4C. Name TWO glycogen storage disorders with their deficient enzymes.

4D. Define proenzymes with TWO examples.

4E. Write the normal serum levels of uric acid, total protein, glucose and creatinine.

(2×5 = 10 marks)



MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2012

SUBJECT: RADIATION PHYSICS

Friday, August 24, 2012

Time: 10.00-13.00 Hrs.

Max. Marks: 80

- ✍ **Answer all questions.**
- ✍ **Each question carries equal marks.**

1. **Write short notes on the following:**

- 1A. Photo electric effect and Compton scattering
- 1B. Beam filtration in x-ray tube

2. Explain in detail about rotating anode x-ray tube with diagram.

3. What is grid? Explain the types of grid.

4. Write a note on x-ray beam restrictors.

5A. Describe concept of time, distance and shielding for radiation protection.

5B. Write a note on primary and secondary barrier.



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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2012

SUBJECT: DARK ROOM TECHNIQUES

Saturday, August 25, 2012

Time: 10.00-13.00 Hrs.

Max. Marks: 80

✍ Answer all the questions. Each question carries SIXTEEN marks.

1. Describe the different types of film artifacts and its causes.
2. Explain the different layers of a film and add a note on cross over effect.
3. Describe types of screens and their application. Discuss on variation in speed of front and back screen.
4. What is development? Write briefly on factors affecting development.
5. Write short notes on the following:
 - 5A. pH scale
 - 5B. Multisection cassette
 - 5C. Constituents of fixing solution
 - 5D. Drying section in automatic processor



MANIPAL UNIVERSITY
FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2012
SUBJECT: IMAGING PHYSICS AND RADIOGRAPHIC POSITIONING

Monday, August 27, 2012

Time: 10:00-11:30 Hrs.

Max. Marks: 40

1. Explain the basic principle of CT scanner and mention the geometry of different generation of CT scanner.

(8 marks)

2. Write a note on coupling agent used for Ultrasonography.

(8 marks)

- 3A. Describe the radiological anatomy of orbit and list the radiographic views for the same.
3B. Describe PA view of orbit.

(4×2 = 8 marks)

- 4A. Describe the view for cervico-thoracic junction.
4B. Explain chest radiography for infant.

(4×2 = 8 marks)

5. Explain carpal tunnel syndrome and explain the methods for carpal tunnel radiography.

(8 marks)

