Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.L.T./ B.Sc. R.T./ B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: ANATOMY

Monday, August 26, 2013

Time: 10:00 – 11:30 Hrs. Max. Marks: 40

Answer all the questions:

1. Describe the right atrium and arterial supply of heart.

(4+4 = 8 marks)

2. Name the parts of the pharynx. Describe the features of the nasopharynx. Add a note on its blood supply and nerve supply.

(1+4+3 = 8 marks)

3. Answer briefly on:

3A. Stratified epithelia

3B. Thalamus

3C. Ovary

3D. Tongue

3E. Prostate

3F. Bronchopulmnary segments

3G. Anal canal

3H. Circle of Willis

(3×8 = 24 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.O.T./ B.Sc. M.L.T./ B.Sc. MIT./ B.Sc. R.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: PHYSIOLOGY

Tuesday, August 27, 2013

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

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

1. Essay Questions:

1A. Write the steps involved in the intrinsic and extrinsic mechanisms of blood coagulation.

1B. Define cardiac output. Give its normal value. Describe the regulation of cardiac output.

1C. Draw and label the pathway for light reflex. Add a note on myopia.

1D. Mention any three functions of growth hormone. List two clinical features of acromegaly.

(5×4 = 20 marks)

2. Write short answers for the following:

2A. Mention two actions of testosterone.

2B. List the movements of small intestine.

2C. List any two functions of hypothalamus.

2D. Mention any two properties of sensory receptors.

2E. Define vital capacity. Give its normal value in adult males.

2F. Mention two functions of platelets.

2G. List two differences between cardiac and smooth muscles.

2H. List two functions of lymph.

2I. Define the terms:

i) Transport maximum.

ii) Glomerular filteration rate

2J. Draw a labeled diagram of the nerve action potential.

(2×10 = 20 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: BIOCHEMISTRY

Wednesday, August 28, 2013

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

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

1. Write in detail the reactions of aerobic glycolysis.

(8 marks)

2. Write the reactions of β-oxidation of palmitic acid.

(6 marks)

3. Write short notes on the following:

3A. Lactose intolerance.

3B. Effect of substrate concentration on enzyme activity with a graph.

3C. Role of vitamin C and copper in collagen biosynthesis.

3D. THREE similarities and differences each between the types of protein energy malnutrition.

(4×4 = 16 marks)

4. Answer the following:

4A. Define the terms replication and translation.

4B. Classify acidosis with ONE example each.

4C. Write the normal serum levels of fasting glucose, total cholesterol, creatinine and urea.

4D. Write ONE reaction each in which coenzyme forms of thiamine and niacin are required.

4E. Explain mutual supplementation of proteins with the help of an example.

(2×5 = 10 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: RADIATION PHYSICS

Thursday, August 29, 2013

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

Answer all questions. Each question carries SIXTEEN marks.

1. Write a detailed note on modern x-rays tube and mention their application.

2. Discuss in detail x-ray circuit.

3. Explain in details:

3A. Grids

3B. TLD

4. Short notes:

4A. Nuclides and its classification.

4B. Rectification.

5. Discuss the following:

5A. Radiation protection in fluoroscopy.

5B. Electromagnetic spectrum.

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FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: DARK ROOM TECHNIQUES

Friday, August 30, 2013

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

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

1. Explain different types of intensifying screens and add a note on factors affecting speed and sharpness.

2. Describe different methods of Silver Recovery.

3. Explain the characteristics of invisible X ray image.

4. How is a characteristic curve produced? Add a note on film latitude.

5. Write short notes on the following:

5A. Intensification Factor.

5B. Film Transport System.

5C. Direct Exposure Film.

5D. Effects of exposure on silver halide crystals.

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FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – AUGUST 2013

SUBJECT: IMAGING PHYSICS AND RADIOGRAPHIC POSITIONING

Saturday, August 31, 2013

Time: 10:00-11:30 Hrs. Max. Marks: 40

- **Answer all the questions. Each question carries EIGHT marks.**
- **Draw suitable diagrams wherever required.**

1. Explain the working principle of CT detectors.

2. Describe Continuous and Pulsed wave Doppler.

3A. Explain Skull Lateral view.

3B. Write short notes on Doppler basic principle.

4A. Explain Femur AP and Lateral view.

4B. Explain KUB Positioning.

5. Describe Knee skyline view.