Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.L.T./ B.Sc. N.M.T./ B.Sc. R.T./ B.Sc. M.I.T.

DEGREE EXAMINATION – JUNE 2007

SUBJECT: ANATOMY

Thursday, June 07, 2007

Time: 1½ Hrs. Max. Marks: 40

Answer all the questions. Draw neat labeled diagram wherever necessary.

1. Give a brief account of the different parts of small intestine. Add a note on pancreas.

(4+4 = 8 marks)

2. Discuss the uterus under

2A. Normal axis

2B. Parts and relations

2C. Supports

(2+4+2 = 8 marks)

3. Answer briefly on:

3A. Vocal cord

3B. Left coronary artery

3C. Normal constrictions of ureter

3D. Position and external features of kidney

3E. External features of the right lung

3F. Neuron

3G. Microscopic structure of suprarenal gland

3H. Ascending tracts of the spinal cord and their functions.

(3×8 = 24 marks)

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FIRST YEAR B.Sc. M.I.T./B.Sc. HIA. DEGREE EXAMINATION – JUNE 2007

SUBJECT: PHYSIOLOGY

Friday, June 08, 2007

Time: 1½ Hrs. Max. Marks: 40

✍ Answer **ALL** questions.

1. Write short notes on the following:

(5×5 = 25 marks)

1A. Functions of photoreceptors.

1B. Functions of posterior pituitary gland.

1C. Baroreceptor reflex.

1D. Regulation of respiration.

1E. Dangers of blood transfusion.

2. Give brief answers to the following questions:

2A. Mention the cause and any two clinical features of Cushing's syndrome.

2B. List the factors that affect body temperature.

2C. What is isotonic contraction? Give an example.

2D. Define 'blood pressure'. List two factors which affect blood pressure.

2E. Enumerate two functions of the kidney.

(2×5 = 10 marks)

3. State whether the following statements are **TRUE** or **FALSE**.

3A. Plasma is also known as serum.

3B. Cardiac muscle can be tetanized.

3C. Hypoxia refers to oxygen deficiency at tissue level.

3D. Intrinsic factor secreted by parietal cells help in absorption of vitamin B_{12}.

3E. Myopia is a type of muscle disorder.

(1×5 = 5 marks)

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FIRST YEAR B. Sc. N.M.T./B. Sc. M.I.T/B.Sc. R.T. DEGREE EXAMINATION – JUNE 2007

SUBJECT: BIOCHEMISTRY

Saturday, June 09, 2007

Time: 1½ Hrs. Max. Marks: 40

✍ Answer **ALL** the questions.

1. Define glycolysis. Write the reactions of aerobic glycolysis mentioning the enzymes and coenzymes at each step.

(1+7 = 8 marks)

2. Define the term carbohydrates. Classify carbohydrates and give two examples for each class.

(5 marks)

3. Name lipoproteins and write one function each of the lipoproteins.

(4 marks)

4. Define BMR and list the factors affecting it.

(4 marks)

5. With the help of a graph explain the effect of substrate concentration and temperature on enzyme activity.

(6 marks)

6. Discuss urea cycle under the following headings:

6A. Site and subcellular site.

6B. Reactions.

(1+5 = 6 marks)

7. What are essential fatty acids? Give **TWO** examples.

(2 marks)

8. Write the coenzyme form of thiamine and pyridoxine. Write two reactions each in which coenzyme form of the above vitamin takes part.

(5 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2007

SUBJECT: RADIATION PHYSICS

Monday, June 11, 2007

Time: 3 Hrs. Max. Marks: 80

Answer any FIVE of the following.

1. Explain the following:

1A. Exposure.

1B. Kerma.

1C. Absorbed Dose.

1D. Relative Biological Effectiveness.

1E. f-factor.

(4+3+3+3+3 = 16 marks)

2. Discuss the following:

2A. Line focus principle.

2B. Anode angle.

2C. Space charge effect.

2D. Tube cooling.

(4+3+5+4 = 16 marks)

3A. List the requirement of X-ray production.

3B. Discuss the Gas tubes and Coolidge's tube with necessary diagram.

(4+12 = 16 marks)

4A. What is electromagnetic radiation?

4B. Explain:

i) Quantum nature of radiation.

ii) Mass-Energy Equivalence.

iii) Fluorescence.

iv) Electromagnetic spectrum.

(2+(4+3+3+4) = 16 marks)

5. Explain in detail methods of radiation control with an example each.

(16 marks)

6A. At 150 kVp, 80mA for an exposure time of 2 seconds find out the Quantity of X-ray radiation for the target material of tin(Z=50) and for tungsten (Z=74).

6B. Write down the equation for energy deposited in the target. So find out the energy deposited in both the target Z=74 and Z=50 for single phase system as well as 3-phase /6-phase circuits.

(6+10 = 16 marks)

7. Discuss in detail Exposure Switching, timer and HT cables.

(16 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.I.T. DEGREE EXAMINATION – JUNE 2007

SUBJECT: X-RAY DARK ROOM TECHNIQUES

Tuesday, June 12, 2007

Time: 3 Hrs. Max. Marks: 80

- **Answer any FIVE questions.**
- **Question number 1 is compulsory.**
- **Each question carries 16 marks.**

1. Write short notes on any **FOUR** of the following:

1A. Curved cassette.

1B. Cleaning of screens.

1C. Intra-oral dental film.

1D. Step wedge.

1E. Basic fog.

1F. Functions of gelatin in film.

2. Storage of films in x-ray Department store.

3. Dark room construction.

4. Automatic film processor.

5. Types of films used for medical imaging and their uses.

6. Intensifying screens.

7. Characteristic curve of films. Effect of developer on characteristic curve.