Reg. No.										

MANIPAL UNIVERSITY

M.Sc. (MEDICAL) (PRELIMINARY) DEGREE EXAMINATION – SEPTEMBER 2013

SUBJECT: PAPER I: ANATOMY

Tuesday, September 10, 2013

Time: 14:00 – 17:00 Hrs. Maximum Marks: 80

- **Answer ALL the questions.**
- **Draw diagrams wherever necessary.**

1. Describe the following aspects of palatine tonsil:

1A. Position and parts

1B. Relations

1C. Blood supply

(3+4+3 = 10 marks)

2. Describe the liver under:

2A. Ligaments

2B. Relations of visceral surface

2C. Porta hepatis

(4+3+3 = 10 marks)

3. Describe the ureter under:

3A. Parts and constrictions

3B. Relations of the pelvic part in females

3C. Arterial supply

(4+4+2 = 10 marks)

4. Describe the bronchopulmonary segments of the lungs and discuss applied aspects.

(7+3 = 10 marks)

5. **Write short notes on:**

5A. Microscopic structure of large artery

5B. Left coronary artery

5C. Periosteum

5D. Mesentry

5E. Turner's syndrome

5F. Deep perineal pouch

5G. Amnion

5H. Coeliac trunk

5I. Parotid duct

5J. Ciliary ganglion

(4 × 10 = 40 marks)

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MANIPAL UNIVERSITY

M.Sc. (MEDICAL) (PRELIMINARY) DEGREE EXAMINATION – SEPTEMBER 2013

SUBJECT: PAPER II: PHYSIOLOGY

Thursday, September 12, 2013

Time: 14:00 – 17:00 Hrs. Maximum Marks: 80

1. Draw a labelled diagram of pathway for discrimination touch. Give the significance of 'adaptation' of sensations.

(6+2 = 8 marks)

2. Give the micturition reflex arc. Explain the normal mechanism of micturition in a healthy adult.

(4+4 = 8 marks)

3. **Write briefly on:**

3A. List the functions of hypothalamus.

3B. Name the steps in the synthesis of thyroid hormone and explain how thyroxine secretion is controlled.

3C. Describe the action and control of secretion of mineralocorticoids.

3D. Explain the basis of polyuria, polydipsia and polyphagia observed in diabetes mellitus.

(4×4 = 16 marks)

4. **Write briefly on:**

4A. Name the proteolytic enzymes in the GIT.

4B. Briefly outline the functions of bile.

4C. Explain how an action potential is generated in a 'nerve'.

4D. Draw a diagram to show the taste pathway from the anterior $2/3^{rd}$ of the tongue. List basic taste sensations.

(4×4 = 16 marks)

5. **Write briefly on:**

5A. List four factors affecting venous return. Explain any one.

5B. Give 'Poiseuelle's formula. Explain the role of two of the factors affecting blood flow to an organ based on this formula.

5C. Draw a labelled diagram of ECG taken from a limb lead. Explain the special significance of chest leads.

5D. Describe the changes taking place in the endometrium after ovulation.

(4×4 = 16 marks)

6. **Write briefly on:**

6A. Briefly outline the role of T-lymphocytes in immunity.

6B. Give the agglutinogen and agglutinin content in each of the different blood groups of ABO system. Explain why blood grouping is necessary before blood transfusion.

6C. Outline the functions of upper respiratory tract.

6D. Draw and label an oxygen dissociation curve. Explain Bohr effect.

(4×4 = 16 marks)

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MANIPAL UNIVERSITY

M.Sc. (MEDICAL) (PRELIMINARY) DEGREE EXAMINATION – SEPTEMBER 2013

SUBJECT: PAPER III: BIOCHEMISTRY

Saturday, September 14, 2013

Time: 14:00 – 17:00 Hrs. Maximum Marks: 80

✍ **Illustrate your answers with neatly drawn and correctly labeled diagrams wherever appropriate.**

1. What is enzyme inhibition? Describe different types of enzyme inhibition with suitable examples.

(10 marks)

2. Describe the pathway by which erythrocytes generate ATP. Give its energetics. How is it regulated?

(7+1+2 = 10 marks)

3. Explain transamination and its importance. How ammonia is formed and detoxified? Explain the pathway. Add a note on its importance.

(3+1+5+1 = 10 marks)

4. **Write short notes on:**

4A. Functions of vitamin A
4B. Oxidative phosphorylation
4C. Structure and functions of membranes
4D. Southern blotting

(5×4 = 20 marks)

5. **Write notes on:**

5A. Iron absorption
5B. Ribosomes
5C. Acute intermittent porphyria
5D. Ketoacidosis
5E. Denaturation of proteins
5F. Conjugation reaction in xenobiotics metabolism
5G. Kwashiorkor
5H. Chylomicrons
5I. Catecholamines
5J. Promoters

(3×10 = 30 marks)