Reg. No.										

MANIPAL UNIVERSITY

FIRST MBBS DEGREE EXAMINATION – AUGUST 2007

SUBJECT: PHYSIOLOGY – PAPER I (ESSAY)

Monday, August 13, 2007

Time: 10:20–13:00 Hours. Maximum Marks: 40

- **All questions are compulsory. Write brief, clear, relevant and legible answers.**
- **Illustrate your answers with diagrams and flow charts wherever appropriate.**

1. Draw a neat labelled diagram of the muscle spindle. Discuss the role of muscle spindle as a 'receptor'. Enumerate four somatic reflexes integrated at the level of spinal cord.

(2+6+2 = 10 marks)

2. Name the types of hormones synthesized by the suprarenal glands. Discuss the role of cortisol on carbohydrate metabolism and immune functions.

(2+2+2 = 6 marks)

3. Draw a neat labelled diagram of auditory pathway. List two special features of this pathway. Discuss briefly how the source of a sound is localized.

(3+1+2 = 6 marks)

4A. List six functions of estrogen.

(3 marks)

4B. Explain briefly any one neuro-endocrine reflex using a labelled diagram.

(3 marks)

4C. Name the hormones secreted by islets of Langerhans of pancreas. Write briefly on 'paracrine' regulation within the islets of Langerhans.

(2+1 = 3 marks)

4D. Name different types of aphasias. With the help of a labelled diagram, show the area of probable damage in each.

(1½+ 1½ = 3 marks)

4E. Write briefly on colour blindness.

(3 marks)

4F. Mention the varieties of neuro-muscular blocking agents with an example for each. Briefly discuss the mechanism of action of each of them.

(3 marks)

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FIRST MBBS DEGREE EXAMINATION – AUGUST 2007

SUBJECT: PHYSIOLOGY – PAPER II (ESSAY)

Tuesday, August 14, 2007

Time: 10:20–13:00 Hours. Maximum Marks: 40

- **All questions are compulsory. Write brief, clear, relevant and legible answers.**
- **Illustrate your answers with diagrams and flow charts wherever appropriate.**

1. Draw graphs to show the left intraventricular pressure changes and aortic pressure changes during a cardiac cycle. Indicate therein the opening and closing of heart valves. What is phonocardiogram?

(4+2+2+2 = 10 marks)

2. Describe the role of respiratory centers in normal respiration. List the chemical and nonchemical influences on respiratory centers.

(4+2 = 6 marks)

3. Name four different types of blood transfusions. Give an example when each would be needed. Explain the dangers of incompatible blood transfusion.

(2+2+2 = 6 marks)

4A. Give the normal value of coronary blood flow. Explain why coronary blood flow is related to the phases of cardiac cycle.

(1+2 = 3 marks)

4B. Define Marey's law. Draw a diagram to show the pathway for Marey's reflex.

(1+2 = 3 marks)

4C. Give the clearance formula. Give clearance values for:

i) Glucose.

ii) Inulin.

Explain why their clearance values are different.

(1+1+1 = 3 marks)

4D. Explain the terms 'counter current multiplier' system and 'counter current exchanger' system. Specify the role of each.

(2+1 = 3 marks)

4E. Explain the regulation of gastric phase of gastric juice secretion.

(3 marks)

4F. Name the bile salts. Briefly explain the functions of bile salts in digestion.

(1+2 = 3 marks)