Reg. No.										

MANIPAL UNIVERSITY

FIRST MBBS DEGREE EXAMINATION – MAY/JUNE 2008

SUBJECT: PHYSIOLOGY– PAPER I (ESSAY)

Thursday, May 29, 2008

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

1. An elderly male was referred by a local doctor to the neurologist with the following symptoms on his right side of the body: inability to walk without swaying to right; excessive movements of the extremities when he tried to use his right arm to reach the target; clumsiness in performing day-to-day activities using his right upper extremity and difficulty in speech. On complete clinical examination of the nervous system, the neurologist found hypotonia in right upper and lower limbs. There was no paralysis; no sensory disturbances; knee jerk was pendular on the right side. Cranial nerves were normal.

1A. Which part of the brain is most likely to be affected in the above patient? Why?

1B. Which side of the above part of brain was affected? Why?

1C. Describe any two afferent and two efferent connections of the above part of the brain.

1D. Explain any two tests (other than the ones mentioned above) employed to assess the functions of the above part of brain.

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

2. Describe the physiological actions of Thyroxine.

(6 marks)

3A. Describe regulation of testicular functions. Add a note on the mechanism of action of testosterone on different targets tissues.

3B. Differentiate primary and secondary amenorrhea.

(4+2 = 6 marks)

4A. Draw 'dorsal column pathway'.

4B. Explain 'dark adaptation' and its basis.

4C. Give the source, target organs and actions of Vitamin D.

4D. Mention the differences between end plate potential and muscle action potential.

4E. Explain 'place theory' of hearing.

4F. Describe features of REM sleep.

(3×6 = 18 marks)

Reg. No.										

MANIPAL UNIVERSITY

FIRST MBBS DEGREE EXAMINATION – MAY/JUNE 2008

SUBJECT: PHYSIOLOGY– PAPER II (ESSAY)

Friday, May 30, 2008

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

1. With the help of suitable diagrams, explain the changes occurring in the blood pressure when a person suddenly stands upright from lying down position. Add a note on clinical features of hypovolemic shock.

(7+3 = 10 marks)

2. Explain why and how coagulation occurs when a blood sample is drawn into a glass test-tube. How can you prevent that?

(5+1 = 6 marks)

3. Describe the physiological basis of acclimatization to a high altitude. Add a note on 'Acute mountain sickness.'

(4+2 = 6 marks)

4A. Discuss briefly the role of gastrointestinal hormones in the regulation of pancreatic juice secretion.

4B. Describe the events occurring in the second phase of deglutition.

4C. How is the heat lost from the body? What is the role of skin in adaptation to hot climatic conditions?

4D. With the help of a flow chart, discuss the role of Juxta-Glomerular apparatus in the autoregulation of GFR.

4E. Define '*filtered load*' and '*transport maximum (Tm)*' of a substance. Calculate filtered load for a freely filtered substance using the following data:
GFR=120 ml/min; Plasma concentration of substance=300 mg%
Calculate the rate of excretion of this substance if its Tm for reabsorption is 350 *mg/min.*

4F. In a diagram, show the changes occurring in aortic pressure, left ventricular pressure and jugular venous pressure during one complete cardiac cycle.

(3×6 = 18 marks)