Reg. No.										

MANIPAL UNIVERSITY

FIRST MBBS DEGREE EXAMINATION – AUGUST 2010

SUBJECT: PHYSIOLOGY– PAPER I (ESSAY)

Friday, August 13, 2010

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

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

1. Draw a diagram (anatomically correct) to show the pathway for tactile localization originating in lower limb. Indicate the pattern of sensory loss when there is unilateral lesion of this pathway at the level of i) Medial lemniscus. ii) First thoracic segment of spinal cord.

(6+2+2 = 10 marks)

2A. Describe the metabolic actions of cortisol.

2B. A thirty three-year old woman visited the hospital with complains of lower back pain. Physical examination showed excess fat deposits in the central axis of her body including the face, shoulders and abdomen. Her extremities were thin and exhibited muscle wasting. There were several ulcers on her left leg that did not heal. Her skin was thin with bruises and there were large, purple striae on her abdomen. X-rays revealed osteoporotic changes in vertebral bones

i) Name the above endocrine defect and give the cause.

ii) Explain the basis of any two clinical manifestations.

(3+(1+2) = 6 marks)

3. Draw a labeled diagram of auditory pathway. Mention the special features of this pathway.

(6 marks)

4A. Enumerate the clinical features of spinocerebellar lesion. Explain any one in terms of its connections.

(3 marks)

4B. List the features of thalamic syndrome. Explain their basis.

(3 marks)

4C. Give the source, target tissues and actions of calcitriol.

(3 marks)

4D. Explain any three physiological differences between skeletal and smooth muscle.

(3 marks)

4E. Explain the role of hormones in breast development in females.

(3 marks)

4F. List the factors influencing spermatogenesis. Explain any one.

(2+1 = 3 marks)

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FIRST MBBS DEGREE EXAMINATION – AUGUST 2010

SUBJECT: PHYSIOLOGY– PAPER II (ESSAY)

Saturday, August 14, 2010

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

1. Draw a neat labeled diagram of the conducting system of a human heart. Briefly discuss the mechanisms of origin and spread of the cardiac impulse. Mention any two physiological and pathological factors that would affect the origin and conduction of the cardiac impulse.

(2+4+4 = 10 marks)

2. Enumerate and explain the sequential events to prevent blood loss that occurs after an injury to a blood vessel. Name any one clinical laboratory test used to assess this process.

(5+1 = 6 marks)

3. Define and classify types of hypoxia. State the characteristic features of each type of hypoxia. Write a brief note on Caisson's disease.

(1+4+1 = 6 marks)

4A. Explain the role of hypothalamus in maintaining body temperature when exposed to a hot environment.

(3 marks)

4B. Define micturition. Draw a neat labeled diagram showing central and spinal neural reflex pathways to the urinary bladder involved in this process.

(1+2 = 3 marks)

4C. Define blood pressure and give its normal value. Explain any two mechanisms by which baroreceptors regulate blood pressure.

(1+2 = 3 marks)

4D. Enumerate four functions of liver. Discuss the role of liver in digestion of fats.

(1+2 = 3 marks)

4E. List any four differences between the first and second heart sounds. Name the areas in the precordium where the first heart sound is better heard.

(2+1 = 3 marks)

4F. Name any two hormones of the gastro intestinal tract and explain their functions.

(1+2 = 3 marks)