

MANIPAL UNIVERSITY**M.Sc. MEDICAL (FINAL) PHYSIOLOGY DEGREE EXAMINATION – FEBRUARY 2011****PAPER I: GENERAL PHYSIOLOGY, NERVOUS SYSTEM INCLUDING
SPECIAL SENSES AND MUSCLES**

Monday, February 07, 2011

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

✍ Answer ALL the questions.**✍ Illustrate your answers with neatly drawn and correctly labelled diagrams wherever necessary.**

1. What are somatosensory receptors? Classify them and explain their properties. With suitable example explain receptor transduction mechanism.

(20 marks)

2. Enumerate the descending tracts of spinal cord. Describe in detail the pyramidal tract. Write a note on the effects of upper and lower motor neuron lesions.

(20 marks)

3. Describe hypothalamic nuclei and their connections. With suitable examples explain their functions. Add a note on its clinical disorders.

(20 marks)

4. Describe the connections and functions of reticular formation.

(20 marks)

5. **Write short notes on:**

5A. Functions of middle ear

5B. Accommodation reflex

5C. Molecular basis of skeletal muscle contraction

5D. Compound action potential.

(5×4 = 20 marks)



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MANIPAL UNIVERSITY

M.Sc. MEDICAL (FINAL) PHYSIOLOGY DEGREE EXAMINATION – FEBRUARY 2011

PAPER II: CARDIOVASCULAR PHYSIOLOGY, RESPIRATORY SYSTEM, RENAL PHYSIOLOGY AND BLOOD

Tuesday, February 08, 2011

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

- ✍ **Answer ALL the questions.**
- ✍ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever necessary.**
1. With the help of flow charts, discuss the compensatory changes occurring when there is acute loss of 500 ml of blood from the body.
(20 marks)
 2. Describe the mechanism of clotting of blood kept in a test tube. Add a note on the fibrinolytic system and its clinical application.
(20 marks)
 3. Explain the acute and chronic changes occurring when you are exposed to very hot and very cold temperatures.
(10+10 = 20 marks)
 4. Describe the coronary circulation. Highlight the special features and discuss why myocardium is at a higher risk of ischemic injury.
(20 marks)
 5. **Discuss:**
 - 5A. Acclimatization to high altitude
 - 5B. Dialysis.
(10+10 = 20 marks)



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MANIPAL UNIVERSITY

M.Sc. MEDICAL (FINAL) PHYSIOLOGY DEGREE EXAMINATION – FEBRUARY 2011

PAPER III: GASTROINTESTINAL TRACT, ENDOCRINOLOGY AND REPRODUCTION

Wednesday, February 09, 2011

Time: 14:00 – 17:00 Hrs.

Maximum Marks: 100

✍ **Answer ALL questions. All questions carry equal marks.**

✍ **Draw neat labeled diagram wherever appropriate.**

1. Describe in detail the control of pancreatic secretion in different phases. Explain the consequence of deficiency of pancreatic enzymes on the digestion and absorption of different food stuffs.
2. Describe the physiological actions & control of secretion of 'cortisol'. Give clinical features of Cushing's Syndrome explaining their physiological basis.
3. Describe the hormonal control of sexual growth and development in females.
4. Discuss the role of hormones in the regulation of plasma calcium. Add a note on the physiological role of ionic calcium.
5. **Write Briefly on:**
 - 5A. Vomiting reflex
 - 5B. Achalasia cardia
 - 5C. Oogenesis.
 - 5D. Physiological basis of 'indicators of ovulation'.

