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## MANIPAL UNIVERSITY

MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2011

SUBJECT: PAPER I: GENERAL PHYSIOLOGY, NERVOUS SYSTEM,  
SPECIAL SENSES AND MUSCLE

Monday, April 04, 2011

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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- ✍ Answer ALL the questions.
  - ✍ ALL questions carry equal marks.
  - ✍ Draw diagrams wherever necessary.

1. Discuss the “maintenance of Internal-environment”.
2. Describe the connections, functions and clinical disorders of Hypothalamus.
3. Write short notes on:
  - 3A. Visual pathway
  - 3B. Vestibular apparatus
4. Discuss in detail various “Postural - reflexes”. Add a note on hemiplegia.
5. Describe the molecular basis of skeletal muscle contraction. Add a note on myasthenia gravis.



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## MANIPAL UNIVERSITY

MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2011

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

Tuesday, April 05, 2011

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL the questions.
- ✍ ALL questions carry equal marks.
- ✍ Draw diagrams wherever necessary.

1. Discuss the special features of coronary circulation in detail. Add a note on Ischemic heart disease.
2. Explain the normal ECG in detail. Add a note on cardiac arrhythmias.
3. Discuss the mechanism of haemostasis in detail. Add a note on bleeding disorders.
4. Describe the mechanism of Oxygen transport in detail with special reference to oxygen dissociation curve.
5. Write notes on:
  - 5A. Hormones acting on renal tubules.
  - 5B. Counter current mechanism in kidney



**MANIPAL UNIVERSITY****MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2011****SUBJECT: PAPER III: GASTROINTESTINAL TRACT, ENDOCRINOLOGY  
AND REPRODUCTION**

Wednesday, April 06, 2011

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✗ Answer ALL the questions.
- ✗ ALL questions carry equal marks.
- ✗ Draw diagrams wherever necessary.

1. Discuss the role of hormones in calcium metabolism and bone growth. (20 marks)
2. Describe physiological actions of progesterone. Add a note on its regulation. (20 marks)
3. Describe the physiological actions of glucocorticoids. Give the physiological basis of features of 'Addison's Disease'. (20 marks)
4. Describe the regulation of enzyme secretion from pancreas. List its proteolytic enzymes, their actions and the method of their activation. (20 marks)
5. Write briefly on:
  - 5A. Features of 'cretinism' and their physiological basis
  - 5B. Pharyngeal phase of deglutition
  - 5C. Spermatogenesis
  - 5D. Diabetes insipidus(5×4 = 20 marks)



**MANIPAL UNIVERSITY****MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2011****SUBJECT: PAPER IV: RECENT ADVANCES IN PHYSIOLOGY, APPLIED AND  
CLINICAL PHYSIOLOGY**

Thursday, April 07, 2011

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL the questions.
- ✍ ALL questions carry equal marks.
- ✍ Draw diagrams wherever necessary.

1. Discuss how 'ventilatory' and 'gaseous exchange' functions of lung are assessed  
(20 marks)
2. Describe the genetic basis of gonadal development in males and females. Give clinical examples of their abnormality.  
(20 marks)
3. Define 'renal clearance value' of a substance. Explain how this concept is used to determine the way a substance is handled by the kidney.  
(20 marks)
4. Describe the optical changes and neural mechanisms necessary, while clearly viewing an object kept at 500 centimeters from an observer. If the observer is unable to view the object clearly, how is it rectified?  
(20 marks)
5. Write briefly on:
  - 5A. The role of polypeptides in the regulation of food intake
  - 5B. Nonreproductive actions of estrogen.
  - 5C. High cardiac output failure.
  - 5D. Free water clearance.

(5×4 = 20 marks)

