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## MANIPAL UNIVERSITY

### MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2012

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

Monday, April 02, 2012

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 neuronal mechanisms involved in carrying out smooth, coordinated purposeful voluntary movements. Add a note on paralysis.
2. Explain the connections and functions of hypothalamus. Add a note on obesity.
3. Explain the mechanism of hearing. Add a note on tests of hearing.
4. Discuss the various properties of skeletal muscle and smooth muscle.
5. **Write short notes on:**
  - 5A. Role of transporter proteins
  - 5B. Neurotransmitters of brain and their clinical implications



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## MANIPAL UNIVERSITY

**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2012**

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

Tuesday, April 03, 2012

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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- ✍ **Answer ALL the questions.**
  - ✍ **ALL questions carry equal marks.**

1. Discuss the pathophysiology of circulatory shock.
2. Give an account of lung volumes and capacities. Add note on “Timed Vital Capacity” (FEV<sub>1</sub>).
3. Explain the neural regulation of respiration.
4. Describe renal tubular functions.
5. Explain the stages of erythropoiesis. Add a note on anemia.



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## MANIPAL UNIVERSITY

MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2012

SUBJECT: PAPER III: GASTROINTESTINAL TRACT, ENDOCRINOLOGY  
AND REPRODUCTION

Wednesday, April 04, 2012

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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

1. Explain in detail the digestion and absorption of carbohydrates.
2. Define stress. Explain the neuro-endocrine basis of stress response in humans.
3. Describe the ovarian changes that occur during the menstrual cycle. Explain how they are regulated.
4. **Explain briefly**
  - 4A. Consequences of Orchidectomy
  - 4B. Role of Prolactin
5. **Explain briefly**
  - 5A. Regulation of lower oesophageal sphincter
  - 5B. Mucosa Associated Lymphatic tissue



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## MANIPAL UNIVERSITY

### MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2012

#### SUBJECT: PAPER IV: RECENT ADVANCES IN PHYSIOLOGY, APPLIED AND CLINICAL PHYSIOLOGY

Thursday, April 05, 2012

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 cardio-respiratory changes occurring in a trained athlete during moderate exercise.

(20 marks)

2. Discuss the adjustments occurring in an individual who suddenly ascends to an altitude of 6000 m and stays there for a week.

(20 marks)

3. Discuss how you would differentiate between hepatic and post hepatic jaundice giving physiological basis.

(20 marks)

4. Write briefly on:

4A. ECG

4B. Radioimmunoassay

4C. Myenteric (Auerbach's) plexus

4D. Ageing

(10×4 = 40 marks)

