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## MANIPAL UNIVERSITY

### MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2014

SUBJECT: PAPER I: GENERAL PHYSIOLOGY INCLUDING HISTORY OF PHYSIOLOGY

Tuesday, April 01, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the importance of blood grouping and cross matching in clinical medicine.

2. Discuss the carrier-mediated transport processes

(15×2 = 30 marks)

3. **Write short notes on:**

3A. Junctional complexes

3B. Neurotrophins

3C. Brodmann

3D. Caissons disease

3E. Carboxyhemoglobin

3F. Lambert-Eaton syndrome

3G. Olfaction in humans and dogs (compare)

3H. Neonatal jaundice

3I. Strength-Duration curve

3J. Helper-T cells

(7×10 = 70 marks)



## MANIPAL UNIVERSITY

## MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2014

SUBJECT: PAPER II: SYSTEMIC PHYSIOLOGY (SYSTEM PROVIDING TRANSPORT,  
NUTRITION AND ENERGY) INCLUDING COMPARATIVE PHYSIOLOGY

Wednesday, April 02, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

☞ **Answer ALL the questions.**

☞ **Long Essay:**

1. Describe the structure and function/s of each segment of the vascular system.
2. Discuss mechanism of emptying of the urinary bladder in:
  - a. Infants
  - b. Normal adults
  - c. During and following spinal shock

(15×2 = 30 marks)

3. **Write short notes on:**

- 3A. Relevance of gas laws in respiratory physiology
- 3B. Haldane effect
- 3C. Mechanism of vomiting
- 3D. Colonic microflora
- 3E. Pacemaker potential
- 3F. Triple response
- 3G. Sinus arrhythmia
- 3H. Free water clearance
- 3I. Tubuloglomerular feedback
- 3J. Regulation of gastric acid secretion

(7×10 = 70 marks)



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## MANIPAL UNIVERSITY

### MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2014

#### SUBJECT: PAPER III: SYSTEMIC PHYSIOLOGY (SYSTEM CONCERNED WITH PROCREATION, REGULATION AND NEURAL CONTROL)

Thursday, April 03, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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✍ **Answer ALL the questions.**

✍ **Long Essay:**

1. Discuss the role of inner ear in hearing. Add a note on tests of hearing.
2. Compare the roles of basal ganglia and cerebellum in voluntary motor control.

(15×2 = 30 marks)

3. **Write short notes on:**

- 3A. Speech and its disorders
- 3B. Posterior pituitary hormones
- 3C. Functions and disorders of Prefrontal lobes
- 3D. Synthesis, functions and disorders of mineralocorticoids
- 3E. Color vision and color blindness
- 3F. Hormones acting on calcium metabolism
- 3G. Contraception
- 3H. Formation, circulation and drainage of aqueous humor
- 3I. Placenta and its functions
- 3J. Menstrual cycle and its hormonal regulation

(7×10 = 70 marks)



## MANIPAL UNIVERSITY

## MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2014

## SUBJECT: PAPER IV: APPLIED PHYSIOLOGY INCLUDING RECENT ADVANCES

Friday, April 04, 2014

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ Answer ALL the questions.

✍ Draw diagrams wherever necessary.

✍ Long Essay:

1. Discuss the current concepts regarding the congestive cardiac failure. Give the physiological basis of its treatment.
2. Discuss the pathophysiology of pain in detail. Add a note on descending analgesic system.

(15×2 = 30 marks)

3. Write short notes on:

- 3A. Echo-cardiography
- 3B. Pathophysiology of jaundice
- 3C. Taste pathway and taste disorders
- 3D. Prostaglandins
- 3E. Healthy Aging
- 3F. Non-invasive techniques
- 3G. Classify Anemias. Discuss megaloblastic anemia
- 3H. Blood transfusion and mismatched blood transfusion
- 3I. Refractive errors of the eye and their correction.
- 3J. Obesity and physiological basis of its management.

(7×10 = 70 marks)

