

MANIPAL UNIVERSITY**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2013****SUBJECT: PAPER I: GENERAL PHYSIOLOGY INCLUDING HISTORY OF PHYSIOLOGY**

Tuesday, April 02, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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

1. Discuss how blood is kept in fluid state in blood vessels and how its consistency changes when exposed to atmosphere as a result of vascular injury. (20 marks)
2. Discuss bio-electric potentials and their physiological significance. (20 marks)
3. Discuss evolution of circulatory system in terrestrial animals in comparison with that of man. (20 marks)
- 4A. Oxygen debt during severe exercise
- 4B. Physiological benefits of regular Yoga practice (10×2 = 20 marks)
- 5A. Contributions of Sir Charles Sherrington to Physiology
- 5B. Body adaptation to hostile environmental conditions (10×2 = 20 marks)



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MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2013

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

Wednesday, April 03, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

- ✍ Answer ALL the questions.
- ✍ Draw diagrams wherever necessary.

1. Explain the normal ECG in detail. Add a note on cardiac arrhythmias. (20 marks)
2. Discuss in detail the mechanism of concentration of urine in the kidney. Add a note on kidney function tests. (20 marks)
3. Describe the mechanism of oxygen transport in detail with special reference to oxygen dissociation curve. (20 marks)
4. Discuss the Gastro-intestinal hormones in detail. (20 marks)
- 5A. Discuss the special features of Coronary circulation.
- 5B. Digestion and absorption of fats (10×2 = 20 marks)



MANIPAL UNIVERSITY**MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2013****SUBJECT: PAPER III: SYSTEMIC PHYSIOLOGY (SYSTEM CONCERNED WITH PROCREATION, REGULATION AND NEURAL CONTROL)**

Thursday, April 04, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

✍ **Draw diagrams wherever necessary.**

1. Discuss sub-cortical control of muscle tone in detail. (20 marks)
2. Discuss functions of middle and internal ear in relation to sound perception. (20 marks)
3. Discuss physiological role played by Glucocorticoids. Add a note on its role in response to stress. (20 marks)
- 4A. Describe Spermatogenesis and Oogenesis
- 4B. Gonadotropic hormones (10×2 = 20 marks)
- 5A. Paracrine secretions and their significance
- 5B. Association areas of brain (10×2 = 20 marks)



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MD (PHYSIOLOGY) DEGREE EXAMINATION – APRIL 2013

SUBJECT: PAPER IV: APPLIED PHYSIOLOGY INCLUDING RECENT ADVANCES

Friday, April 05, 2013

Time: 14:00 – 17:00 Hrs.

Max. Marks: 100

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

1. Discuss patho-physiology of pain. (20 marks)
2. Discuss physiological basis of gastric and peptic ulcer and their management. (20 marks)
3. Renal function tests and their utility in evaluation of Kidney functions. (20 marks)
- 4A. ANOVA and Student's "t" test
4B. Modern concepts in memory (10×2 = 20 marks)
- 5A. Conditioned reflexes as a tool for understanding of learning mechanism
5B. Brown-Sequard syndrome (10×2 = 20 marks)

