

MANIPAL UNIVERSITY

M. Sc. (FINAL) PHYSIOLOGY DEGREE EXAMINATION – AUGUST 2007

PAPER I: GENERAL PHYSIOLOGY, NERVOUS SYSTEM INCLUDING SPECIAL SENSES AND MUSCLES

Wednesday, August 01, 2007

Time available: 3 Hours

Maximum Marks: 100

✍ **Answer ALL the questions.**

✍ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**

1. Discuss genetic control of protein synthesis.
(20 marks)
2. Describe the mechanism of neuromuscular transmission with experimental evidences. Classify and explain the mechanism of action of Neuro-muscular blockers.
(15+5 = 20 marks)
3. Discuss in detail the “Righting Reflexes”.
(20 marks)
4. Diagrammatically represent the pain pathway from face and limb. Discuss the modern concept of ‘descending analgesia system’.
(20 marks)
5. Describe with experimental evidences the neurophysiology of sleep.
(20 marks)



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PAPER II: BLOOD AND BODY FLUIDS, CARDIOVASCULAR SYSTEM, RESPIRATORY SYSTEM, RENAL PHYSIOLOGY, SKIN AND TEMPERATURE REGULATION

Thursday, August 02, 2007

Time available: 3 Hours

Maximum Marks: 100

✍ **Answer ALL the questions.**

✍ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**

1. Discuss the neural mechanisms involved in the short term regulation of arterial blood pressure.

(20 marks)

2. Discuss the factors influencing diffusion of respiratory gases in the lungs.

(20 marks)

3. Explain the special features of:

3A. Coronary circulation.

3B. Cerebral blood flow.

(10+10 = 20 marks)

4A. Describe the micturition reflex.

4B. Explain why creatinine clearance is a measure of glomerular filtration rate.

(10+10 = 20 marks)

5A. Describe the role of lymphocytes in specific immune mechanisms.

5B. Describe the fibrinolytic system.

(10+10 = 20 marks)

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PAPER III: GASTROINTESTINAL TRACT, ENDOCRINOLOGY AND REPRODUCTION

Friday, August 03, 2007

Time available: 3 Hours

Maximum Marks: 100

✍ Answer ALL the questions.

✍ Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.

1. Describe the mechanism of deglutition explaining how it is controlled. Add a note on 'Achalasia Cardia'.

(20 marks)

2. Describe the role of hormones in blood glucose regulation.

(20 marks)

3. Describe the sources and actions of testosterone. How is its level controlled in the blood? Mention the consequences of its lack in an adult.

(20 marks)

4. Describe the changes during a menstrual cycle and its hormonal control.

(20 marks)

5. Briefly explain:

5A. The features of Acromegaly.

5B. Role of secretion.

5C. Oral contraceptives.

5D. Define:

i) Thelarche.

ii) Adrenarche

iii) Pubarche.

iv) Menarche.

(5×4 = 20 marks)

