

MANIPAL ACADEMY OF HIGHER EDUCATION
(Deemed University)

MSc (FINAL) PHYSIOLOGY DEGREE EXAMINATION – JULY 2002

PAPER I : GENERAL PHYSIOLOGY, NERVOUS SYSTEM INCLUDING SPECIAL SENSES AND MUSCLES
Monday, July 01, 2002

Time available: 3 Hours

Maximum Marks: 100

- Answer all the questions.
 - All questions carry equal marks.
 - Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.
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1. Describe the pathways for pain impulses from left foot. Mention various mechanisms by which pain could be modified.

(20 Marks)

2. Give an account of location and functions of reticular formation with relevant connections.

(20 Marks)

- 3A. Name the contents of middle ear and describe their functions.
- 3B. Draw pathways of pupillary reflexes. Name the conditions where pupillary reflexes are altered.

(10+10 = 20 Marks)

4. Describe the role of hypothalamus in homeostasis.

(20 Marks)

- 5A. Compare and contrast the characteristics of neuromuscular transmission and synaptic transmission.
- 5B. Outline the results of section of a motor nerve.

(10+10=20 Marks)

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MSc (FINAL) PHYSIOLOGY DEGREE EXAMINATION – JULY 2002

PAPER II : CARDIOVASCULAR SYSTEM, RESPIRATORY SYSTEM, RENAL PHYSIOLOGY AND BLOOD
Tuesday, July 02, 2002

Time available: 3 Hours

Maximum Marks: 100

- Answer all the questions.
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1. Describe the principle of measurement, factors affecting and regulation of coronary circulation. (20 marks)

2. Discuss in detail peculiarities and physiological role of cutaneous circulation. (20 marks)

3. Describe the role of brain-stem center in the regulation of respiration. Add a note on principles of Artificial Respiration. (15+5 = 20 marks)

4. With experimental evidences, describe the factors influencing glomerular filtration rate. Add a note on the principle of its measurement. (20 marks)

- 5A. Discuss the ENDOCRINE functions of the kidney.
- 5B. Write briefly on:
 - i. Rh-incompatibility
 - ii. Interleukins

(10+10 = 20 marks)

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MSc (FINAL) PHYSIOLOGY DEGREE EXAMINATION – JULY 2002

PAPER III : GASTROINTESTINAL TRACT, ENDOCRINOLOGY AND REPRODUCTION
Wednesday, July 03, 2002

Time available: 3 Hours

Maximum Marks: 100

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- **Answer all the questions.**
 - **All questions carry equal marks.**
 - **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**
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1. Discuss "Gastric motility" in detail.

(20 Marks)

2. Describe "sexual differentiation" in foetal life.

(20 Marks)

3. Describe the biosynthesis and actions of vitamin D. Add a note on the deficiency states of vitamin D.

(20 Marks)

4. Describe hypothalamic-pituitary-endocrine axis.

(20 marks)

5. Write briefly on:
 - 5A. Steatorrhoea
 - 5B. Contraceptive methods
 - 5C. Biosynthesis of catecholamines
 - 5D. Hepatic bile secretion

(20 marks)



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MSc (FINAL) PHYSIOLOGY DEGREE EXAMINATION – DECEMBER 2002

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

Monday, December 02, 2002

Time available: 3 Hours

Maximum Marks: 100

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- **Answer all the questions.**
 - **All questions carry equal marks.**
 - **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**
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1. Explain how the nervous system distinguishes stimuli of

1A. Different intensities

1B. Different locations

1C. Different modalities.

(20 Marks)

2. Compare the immediate effects of complete transection of the spinal cord at upper cervical and mid thoracic levels. Explain the effects.

(20 Marks)

3. Explain with experimental evidences the ionic basis of transmembrane potentials at rest and on adequate stimulation.

(20 Marks)

4. Draw a labelled diagram to show the sclerocorneal junction. Describe the formation, circulation and functions of aqueous humor.

(20 Marks)

5. Explain the mechanism of stimulation of

5A. Taste receptors

5B. Auditory receptors.

(10+10=20 Marks)



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

Tuesday, December 03, 2002

Time available: 3 Hours

Maximum Marks: 100

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- Answer all the questions.
 - All questions carry equal marks.
 - Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.
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1A. Describe the specialized conducting system of human heart.

1B. Describe the different lead systems of E.C.G.

(10+10=20 marks)

2. Describe the causes and features of different types of Hypoxia.

(20 marks)

3A. Describe "micturition reflex".

3B. Explain the intrinsic pathway of coagulation.

(10+10 = 20 marks)

4. Describe the special features of

4A. Coronary circulation

4B. Renal circulation

(10+10=20 marks)

5A. Describe the renal handling of glucose.

5B. Describe carbon dioxide transport.

(10+10 = 20 marks)



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MSc (FINAL) PHYSIOLOGY DEGREE EXAMINATION – DECEMBER 2002

PAPER III: GASTROINTESTINAL TRACT, ENDOCRINOLOGY AND REPRODUCTION
Wednesday, December 04, 2002

Time available: 3 Hours

Maximum Marks: 100

- **Answer all the questions.**
 - **All questions carry equal marks.**
 - **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**
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1. Describe the control of different phases of gastric secretion with experimental evidences.
(20 Marks)

2. Discuss the action of hormone produced by B cell of islets of langerhans in endocrine pancreas. Add a note on the effects of its deficiency.
(20 Marks)

3. Describe the hormonal control of lactation.
(20 Marks)

4. Discuss the stages and factors influencing spermatogenesis. How will you detect a case of sterility in male?
(20 marks)

5. Briefly explain the role of:
 - 5A. CCK-PZ-in pancreatic secretion
 - 5B. Cortisol in carbohydrate metabolism
 - 5C. Inhibin in testicular function
 - 5D. Calcitonin in females.

(5 x 4 = 20 marks)