

**MANIPAL ACADEMY OF HIGHER EDUCATION**  
(Deemed University)

**M.Sc. (PRELIMINARY) DEGREE EXAMINATION – JUNE 2004**

**PAPER I: ANATOMY**  
Tuesday, June 22, 2004

**Time available: 3 Hours**

**Maximum Marks: 100**

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- ➔ **Answer ALL the questions.**  
➔ **Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.**
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1. Describe the position and relations of kidneys. Add a note on microscopic structure. (15 marks)
2. Describe the arterial supply of the heart. Add a note on applied aspects. (15 marks)
3. Write short notes on each of the following: (5×4 = 20 marks)
  - 3A. Corpus luteum
  - 3B. Hyoid bone
  - 3C. Masseter
  - 3D. Decidua
4. Describe the glossopharyngeal nerve. Add a note on its applied aspects. (15 marks)
5. Describe the parts, position, and supports of uterus. Add a note on its blood supply. (15 marks)
6. Write short notes on each of the following (5×4 = 20 marks)
  - 6A. Microscopic structure of lymphnode.
  - 6B. External jugular vein.
  - 6C. Compound epithelium.
  - 6D. Mitochondria.



- † Answer all the questions.  
† Illustrate your answers with neatly drawn and correctly labelled diagrams wherever appropriate.

1. Explain how cardiac output is regulated. (10 marks)
- 2A. With the help of a diagram explain the special conducting system of the heart.  
2B. Define a reflex. With the help of a diagram to show the reflex arc, explain the myotatic reflex.  
2C. Draw a labeled pathway for fine touch sensation from lower extremity.  
2D. Explain the role of hypothalamus in control of appetite. Mention four other functions of hypothalamus. ((2+3)+(1+4)+5+(3+2) = 20 marks)
- 3A. Define micturition. Outline the reflex mechanism of micturition.  
3B. Outline how body temperature is maintained when exposed to cold.  
3C. Outline the functional differences between skeletal and cardiac muscle.  
3D. Diagrammatically represent the cause and correction of i) myopia ii) hypermetropia. Define presbyopia. ((1+4)+5+5+(2+2+1)=20 marks)
4. Explain the actions of thyroxine on:  
4A. Nervous system  
4B. Cardiovascular system.  
Add a note on cretinism (4+4+2 = 10 marks)
- 5A. Name the plasma proteins, give their normal values. Outline Starling's fluid shift hypothesis.  
5B. Explain the role of platelets in haemostasis.  
5C. Outline the role of growth hormone in skeletal growth. List any four features of acromegaly.  
5D. List any four functions of placenta and explain any one of them. ((2+3)+5+(3+2)+(2+3)=20 marks)
- 6A. Define and classify hypoxia. Mention the types of hypoxias where cyanosis is seen.  
6B. Draw a labeled diagram of spirogram. Mention the significance of functional residual capacity.  
6C. Name the different types of mixing movements in small intestine. Explain peristalsis.  
6D. Explain the cephalic phase of gastric secretion. Mention the experimental evidence in this connection. ((1+2+2)+(4+1)+(2+3)+(4+1)=20 marks)

