

# Question Paper

Exam Date & Time: 20-Mar-2023 10:20 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST MBBS DEGREE EXAMINATION – MARCH 2023

SUBJECT: PHYSIOLOGY - PAPER I

(OR - REPEATERS)

Marks: 80

Duration: 160 mins.

**All questions are compulsory. Write brief, clear and legible answers.**

**Illustrate your answers with diagrams and flow charts wherever appropriate.**

### Essay questions:

1. List the hormones secreted from pituitary gland. Explain the formation, secretion and action of thyroid hormones. (2+2+2+4 = 10)
2. A 50 yr old patient was admitted to the hospital following a head injury. Examination revealed loss of skilled movement.
  - 2A) Explain the origin, course and innervation of fibers required for skilled movement of upper limbs. (7)
  - 2B) Enumerate the differences between upper motor neuron and lower motor neuron lesion. (3)

### 3. Short answer questions:

- 3A) Explain the formation, circulation and drainage of cerebrospinal fluids. (4)
- 3B) Explain with help of diagram the pathway for pain sensation from right upper limb in a labeled diagram. (4)
- 3C) List the functions of hypothalamus. (4)
- 3D) Explain cause and features of Parkinson's disease. Give physiological basis of the treatment. (4)
- 3E) Explain the uterine changes during menstrual cycle. (4)
- 3F) Briefly explain the functions of placenta. (4)
- 3G) List the functions of sartoli cells. (4)
- 3H) Explain the transmission of impulse across a neuromuscular junction. (4)
- 3I) Explain the movement of ions across a nerve cell membrane during action potential. (4)
- 3J) Draw a sarcomere and label the parts. Name contractile proteins present in skeletal muscle. (4)
- 3K) What is accommodation reflex? Mention the changes taking place in the eye during accommodation. (4)
- 3L) List the basic taste sensations. Trace the taste pathway. (4)
- 3M) Explain the mechanism of impedance matching in middle ear. (4)
- 3N) What is cushings syndrome? Explain the clinical features. (4)
- 3O) Abnormalities of growth hormone secretion. (4)

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# Question Paper

Exam Date & Time: 22-Mar-2023 10:20 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

FIRST MBBS DEGREE EXAMINATION – MARCH 2023

SUBJECT: PHYSIOLOGY - PAPER II

(OR - REPEATERS)

Marks: 80

Duration: 160 mins.

**All questions are compulsory. Write brief, clear and legible answers.**

**Illustrate your answers with diagrams and flow charts wherever appropriate.**

### Essay questions:

- 1) Define blood pressure. Mention its normal range. Explain the mechanism of regulation of blood pressure when the Mean arterial pressure change is within the range of (50-200) mm Hg. (1+1+8 = 10)
- 2) Explain the mechanism of HCl secretion in stomach. In a flow chart, explain the Physiological basis for the treatment of peptic ulcer. (6+4 = 10)

### 3) Short answer questions:

- 3A) Explain the different waves of lead II ECG. Add a note on ST segment. (3+1 = 4)
- 3B) Briefly explain the special features of coronary circulation. (4)
- 3C) Define cardiac output. Mention its normal value. Enumerate in a schematic presentation the major factors involved in regulation of cardiac output. ( $\frac{1}{2}+\frac{1}{2}+3 = 4$ )
- 3D) Define compliance of the lungs. Explain the Physiological basis of lung compliance being more in emphysema and low in lung fibrosis. (1+3 = 4)
- 3E) Explain the functions of surfactant. (4)
- 3F) Define intrapleural pressure. Mention its normal value in quiet breathing. Explain the reason for it being negative under normal circumstances. ( $\frac{1}{2}+\frac{1}{2}+3 = 4$ )
- 3G) Mention the differences between obstructive and restrictive lung diseases. (4)
- 3H) Explain the functions of juxtaglomerular apparatus. (4)
- 3I) Define glomerular filtration rate (GFR). Give its normal value. Mention the factors affecting GFR. ( $\frac{1}{2}+\frac{1}{2}+3 = 4$ )
- 3J) Define renal clearance of a substance. Mention the criteria a substance should fulfill to be used for assessment of renal clearance. Name the substance which is clinically preferred for this purpose. ( $\frac{1}{2}+3+\frac{1}{2} = 4$ )
- 3K) In a flowchart format, explain the tubulo-glomerular feedback mechanism. (4)
- 3L) Mention the functions of plasma proteins. (4)
- 3M) Define anemia. Enumerate the morphological classification of anemia. (1+3 = 4)
- 3N) Enumerate in a tabular format the antigens and antibodies present in ABO system of blood grouping. Mention any two indications of blood transfusion. (3+1 = 4)
- 3O) Explain the mechanism of defecation reflex. (4)

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