



RAN-2406120901010501

M.D. Physiology Examination August - 2026

Physiology (Paper - I)

 SUMMER
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Time: 3 Hours]

[Total Marks: 100

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) All questions are compulsory.
- (3) Write legible and to the point.
- (4) Draw diagrams wherever necessary.
- (5) Figures in brackets and on the right indicate marks.

Seat No.:

Student's Signature

- Q.1.** Describe the Physiological basis of Resting membrane potential across neuronal membrane (10) Explain the principle of Gibbs Donnan membrane equilibrium (06) Compare and contrast the ionic basis of generation of Action potential in skeletal and cardiac muscle (10) 26
- Q.2.** Describe the role of kidneys in maintenance of pH (12) Add a note on Metabolic Acidosis citing examples (13) 25
- Q.3.** Describe the evolutionary development of gastrointestinal system from unicellular organisms to human beings. 25
- Q.4.** Write short notes on : 8 × 3 = 24
- a) Intercellular junctions.
 - b) Nobel Laureate in Physiology or Medicine in 2025 with their research.
 - c) Types of RNA and their Functions.



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Doctor of Medicine (M.D.) Examination August - 2026

Physiology (Paper - II)

Time: 3 Hours]

[Total Marks: 100

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) All questions are compulsory. (3) Write legible and to the point. (4) Draw diagrams wherever necessary. (5) Figures in brackets and on the right indicate marks.	Seat No.: <table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> Student's Signature						

- Q.1.** Tabulate all the clotting factors with their source, functions and effects of deficiency (6). Define Bleeding time and Clotting time writing one test for each (4). Write a detailed note on various bleeding and clotting disorders with their causes, features and management (12). Explain why bleeding occurs in scurvy despite normal bleeding and clotting time (4). 26
- Q.2..** Describe the Starling forces acting on the walls of pulmonary capillaries (10). Explain the mechanism of development of pulmonary oedema and the factors which guard against it (10). Describe the clinical features of pulmonary oedema and their causes (5). 25
- Q.3.** Enumerate gut peptides (5) and discuss the integrated action of gut peptides in digestion (10). Describe the neuroendocrine factors controlling appetite and food intake (10). 25
- Q.4.** **Write short notes on:** 8 x 3 =24
- Causes and types of Syncope.
 - Applications of concept of preload and afterload to the contraction of heart including the medications modifying preload and afterload.
 - ECG changes in various electrolyte disturbances.

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Doctor of Medicine Examination August - 2026

Physiology (Paper - III)

Time: 3 Hours]

[Total Marks: 100

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) All questions are compulsory. (3) Write legible and to the point. (4) Draw diagrams wherever necessary. (5) Figures in brackets and on the right indicate marks.	Seat No.: Student's Signature
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- Q. 1.** Describe in detail the serial and parallel processing of visual image from the retina to the brain (10) and effects of disruptions in the serial and parallel pathways. (10)
 Explain what will happen and why if visual images chronically fall on noncorresponding points in the two retinas in young children. (6) (26)
- Q.2.** Explain the physiological importance of maintaining plasma calcium within a narrow range. (4) Discuss the synthesis, target organ actions, and feedback regulation of Parathyroid Hormone and Calcitriol in calcium homeostasis. (15)
 Describe the clinical presentation and neuromuscular physiological causes of hypocalcemic tetany. (6) (25)
- Q. 3.** Differentiate between upper and lower motor neurons including their lesions. (10)
 Describe the role of basal ganglia in locomotion. (10) Explain the pathophysiology and clinical features of Huntington's chorea. (5) (25)
- Q. 4.** **Write short notes on:** (8 × 3 = 24)
 a) Neuroendocrine reflexes governing parturition and lactation.
 b) Physiological actions of testosterone and the mechanism of penile erection.
 c) Physiological basis of the classic clasp-knife response.

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Doctor of Medicine (Physiology) Examination August - 2026
PAPER - IV
Time: 3 Hours]
[Total Marks: 100
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) All questions are compulsory.
- (3) Write legibly and to the point.
- (4) Draw diagram wherever necessary.
- (5) Figures in brackets and on the right indicates marks.

Seat No.:

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Student's Signature

- Q.1.** Explain the theories of ageing (10) Write about the geriatric changes in different organs (16) 26
- Q.2** Discuss the Pathophysiology of Parkinson's disease (15) Give recent developments in it's treatment (10) 25
- Q.3.** Discuss the causes of infertility in male and female (14) and recent advances in the management of infertility (11) 25
- Q.4.** **Write notes on :** 8 × 3 = 24
- a. Pathogenesis of Fever
 - b. Functional MRI
 - c. Hemoglobinopathies