

# 2010 Scheme

Q.P. Code: 103001

Reg. No.: .....

## First Professional MBBS Degree Supplementary Examinations January 2026 Physiology - Paper I

Time: 3 Hours

Total Marks: 50

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw table/diagrams/flow charts wherever necessary

### Long essay

(10)

1. A 28-year-old woman, a vegetarian, presented with progressive fatigue, numbness and tingling in her lower limbs, pallor, shortness of breath on exertion, and unintentional weight loss over the past two months. She also reported difficulty in concentrating and mild depression. On clinical examination, she appeared pale with a mild glossitis. Her blood investigations revealed: RBC count: 2.8 million cells/cu.mm, Hemoglobin: 6.0 g/dL, MCV: 120 fL, Peripheral smear: hypersegmented neutrophils and pancytopenia. After starting parenteral cobalamin therapy, she experienced marked improvement in energy levels, appetite, and mental clarity, with gradual weight gain.
- What is she suffering from.
  - Explain erythropoiesis and which step of erythropoiesis gets affected in her.
  - Explain the physiological basis behind this blood picture.
  - List the factors regulating erythropoiesis. (1+5+2+2)

### Short essays

(2x5 =10)

- Describe the stages of deglutition
- Explain the conducting system of the heart

### Answer briefly

(5x3=15)

- Isovolumetric relaxation phase
- Counter-current multiplier
- Role of Immunoglobulins in Immunity
- Chemoreceptors in the regulation of respiration
- Composition and functions of bile

### Draw and label

(2x2½ =5)

- Lead II ECG
- Oxygen-Hemoglobin Dissociation Curve

### Explain the physiological basis of the following

(5x2=10)

- Resting membrane potential in excitable cells
- Urine concentration in the Distal Convoluted Tubule
- Heart sounds during the cardiac cycle
- Increased ventilation at high altitude
- Cutaneous vasodilation in body temperature regulation

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