

**PHYSIOLOGY**

PAPER – I

PHY/D/15/36/I

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:**

1.	a) Define the terms: tonicity, hypotonic and hypertonic. b) Explain Gibbs-Donnan equation and Nerst equation.	3+(3+4)
2.	a) Define recombinant DNA technology. b) Its stages.	2+8
3.	a) Physical properties of the sound stimulus. b) Biophysical basis of loudness of sound.	4+6
4.	a) Draw and discuss the myeloid series. b) Mechanism by which neutrophils and macrophages defend against infections.	4+6
5.	a) Define anemia. b) Give its etiological and morphological classifications. c) Salient features of the commonest anaemia in India.	1+5+4
6.	a) Define renal clearance. b) Significance of renal clearance as kidney function test c) GFR measurement by renal clearance tests.	1+3+6
7.	a) Mechanism of concentration of urine. b) Bartter's syndrome.	8+2
8.	How will you define obesity? What is the marker of obesity? List its causes. Name the genes which can contribute to obesity.	2+2+3+3
9.	a) How much is the total body iron, and what is the distribution? b) Mechanism of absorption of iron and its regulation.	(1+2)+(4+3)
10.	a) Define apoptosis. b) Factors, physiological significance & applied aspects of apoptosis.	2+(3+3+2)

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