

**PHYSIOLOGY**  
**PAPER – I**

Time : 3 hours  
Max. Marks : 100

PHY/D/17/36/I

**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:

- Define homeostasis. 1+6+3
  - Explain in brief characteristic features of negative and feedback mechanisms. Give appropriate examples.
  - Add a note on Feed Forward Control system.
- Illustrate with the help of diagram /flow chart the formation of temporary and permanent haemostatic plugs. 5+3+2
  - Components and physiological importance of Fibrinolytic system.
  - Pathophysiology of disseminated intravascular coagulation.
- Enumerate various components of Cytoskeleton. 6+4
  - Explain in brief the structure and function of each.
  - List the major molecular motors and their functions.
- Role of folic acid in erythropoiesis 4+(3+3)
  - Features and laboratory investigations of folic acid deficiency anemia
- Steps involved in production of hyperosmotic renal medullary interstitium. 5+3+2
  - Role of vasa-recta in excreting concentrated urine
  - Free-water clearance
- Define Glomerular Filtration Rate (GFR) 1+3+3+3
  - Determinants of GFR
  - Autoregulation of GFR and renal blood flow
  - Measurement of GFR

**P.T.O.**

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|-----|--|-------|
| 7.  | a) What is Mononuclear Phagocytic System?<br>b) What are its components, their location and functions in human body? | 2+8   |
| 8.  | a) Define ageing<br>b) Theories of ageing<br>c) Anti-ageing therapies  | 1+5+4 |
| 9.  | a) Sampling techniques in medical research<br>b) ANOVA   | 6+4   |
| 10. | a) What are the factors affecting metabolic rate?<br>b) Obesity  | 6+4   |

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