PHYSIOLOGY

PAPER – I

PHY/D/16/36/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 Fick's law of diffusion. 2+(4+4)
   b) Movement of ions across a semipermeable membrane and the factors affecting the movement of ions.

2. a) Explain the physiological basis of blood transfusion. 3+3+2+2
   b) List and briefly describe the tests that should be performed to ensure safe blood transfusion.
   c) Enumerate the precautions that should be followed during blood transfusion.
   d) Define autologous blood transfusion.

3. Function of membrane proteins in signal transduction. 10

4. Explain the mechanisms that help in maintaining the pH of the body within a narrow range. 10

5. a) Define cell adhesion molecules. 2+(4+4)
   b) Classify cell adhesion molecules and their role during embryonic development.

6. a) Define immunity and list the various types of immunity. 2+4+4
   b) With the help of schematic diagram, explain the stages of humoral immunity.

7. a) With the help of a suitable diagram outline the micturition reflex. 4+4+2
   b) Its facilitation and inhibition by the brain.
   c) What is atonic bladder?

8. a) Fate of RBCs in the body. 4+4+2
   b) Classify jaundice and list the salient features of each.
   c) Physiological jaundice.

P.T.O.

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9. a) Define Recommended Dietary Allowances (RDAs). 2+4+4
   b) Process of formulation of RDAs.
   c) Role of trace elements in diet.

10. a) Define Meta analysis and its role in Medical research. 5+5
    b) Differentiate between case control and randomized control studies.

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