

PHYSIOLOGY

PAPER – II

PHY/D/16/36/II

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) Functional anatomy of cardiac muscle. 2+4+4
b) Role of extracellular calcium in cardiac muscle contraction.
c) Name and explain the Law which explains intrinsic modulation of contraction of Heart.
2. a) Give an account of oxygen consumption during severe exercise. 3+7
b) Explain the body's respiratory responses to meet increased oxygen demand.
3. a) With the help of a suitable diagram, describe respiratory unit and the respiratory membrane. 6+4
b) Factors affecting rate of diffusion through respiratory membrane.
4. a) Temperature regulatory mechanisms activated by cold and heat. 3+(2+5)
b) Define hypothermia and its clinical applications.
5. a) Give an account of the pattern and special features of foetal circulation. 4+(2+4)
b) List the changes that occur in circulation after birth and the mechanism involved.
6. a) Diagrammatically represent the organization of the central respiratory neurons. 4+3+3
b) Role of peripheral chemoreceptors in the regulation of respiration.
c) Briefly describe periodic breathing.
7. Cardiovascular adjustments that occur due to gravitational acceleration and deceleration. 10

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8. a) Define shock. 1+2+3+4
b) List the causes of shock.
c) Outline the vicious cycle of cardiac deterioration in cardiogenic shock.
d) Principle of management of shock.
9. a) Explain the term haemodynamics. 2+(4+4)
b) Roles of Law of Laplace and Poiseuille's law in hemodynamics.
10. a) Basis of physiological problems which occur during ascent to high altitude. 6+4
b) List preventive measures for the same.
