# PHYSIOLOGY

## PAPER – II

PHY/D/14/36/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.*

1. Name the substances released from vascular endothelium and their roles in regulation of blood flow. 2+8

2. Define blood pressure. Discuss in brief short term regulation of blood pressure. 2+8

3. Describe briefly the special features of fetal blood circulation and changes that occur after birth. Discuss the mechanism involved in the changes. 6+4

4. What is the chemical composition, source and functions of pulmonary surfactant? Give its significance. (2+2+3)+3

5. Define hypoxia. What are its types and causes? Give the role of oxygen therapy in each type. 2+5+3

6. What are the various temperature regulatory mechanisms that are activated during cold and hot environment? Write a note on hypothermia and its clinical correlates. 6+4

7. What happens to oxygen consumption during severe exercise? Describe briefly respiratory responses to meet increased oxygen demand. 4+6

8. Define acclimatization to altitude. List and discuss various compensatory changes that occur in the tissues at high altitude. 2+8

9. What is sinus arrhythmia? How is it produced? What is its clinical significance? 2+4+4

10. What are the indications and complications of administration of 100% oxygen at increased pressure? 6+4

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