PHYSIOLOGY

PAPER-IV

Time: 3 hours PHY/J/20/36/IV
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. Physiological changes that occur in response to exercise of moderate intensity. 10

2. Describe the recent advances in concept of bone formation and resorption. Name some drugs used to counter post-menopausal osteoporosis. 8+2

3. Draw a neatly labelled diagram to illustrate the sequential steps in the transmission of an impulse across the neuromuscular junction. Highlight the sites of blockage of transmission in four clinical conditions, using arrows. 6+4

4. Clinical tests performed for diagnosis of cerebellar disease. 10

5. List the diagnostic criteria for metabolic syndrome. Describe the pathophysiology of metabolic syndrome. 3+7

6. What are neurodegenerative disorders? Describe the pathophysiology of three most common neurodegenerative disorders that occur primarily due to ageing process. 1+(3+3+3)

7. a) Name the scientists who won the Nobel prize in Physiology and Medicine in 2019. 1+9
   b) Discuss how cells sense and adapt to variations in oxygen availability.

8. Discuss the therapeutic role of: 5+5
   a) Biofeedback.
   b) Magnetic stimulation.

9. a) Define stress. 2+8
   b) Discuss the role of hypothalamic pituitary axis in stress response

10. a) Regulation of coronary blood flow. 7+3
    b) Consequences of myocardial ischemia.

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