

2025

M.P.Ed. 1st Semester Examination

PHYSICAL EDUCATION

Paper : MPCC-102

[Physiology of Exercise]

Full Marks : 100

Time : Three Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. Define muscle tone.
2. What is a neuromuscular junction?
3. What is cardiac hypertrophy?
4. Define EPOC.
5. What is meant by VO_2 max?
6. Which of the following is central to the circulatory system in the human body?

(a) Blood

P.T.O.

(2)

- (b) Blood vessels
 - (c) Coronary structure
 - (d) Heart
7. Differentiate between a synapse and a neuromuscular junction.
8. Lactic acid is the biproduct of
- (a) Anaerobic metabolism
 - (b) Aerobic metabolism
 - (c) Both
 - (d) Oxidation

Group - B

Answer any *four* questions : $15 \times 4 = 60$

9. Describe the macro and micro structure of skeletal muscle. Give a concept on neuromuscular junction.
(5+5)+5
10. Explain the sliding filament theory of muscle contraction with diagram. Write down the effect of exercise and training on muscular system.
8+7
11. Describe the conduction system of heart with diagram. Explain stroke volume and cardiac output during rest and exercise.
6+(4+5)

(3)

12. Discuss blood flow at rest and during exercise with reference to hemodynamic principles. Write down the effect of exercise and training on cardiovascular system.
6+4+5
13. Explain the mechanism of breathing and discuss pulmonary ventilation at rest and during exercise. 8+7
14. Discuss the effect of training on respiratory system. Describe the exchange of gases in lungs and tissues.
8+7
15. Explain metabolism and energy transfer during exercise. Discuss the different characteristics of ATP-PC system, Lactic acid system and aerobic system. (3+3)+(3+3+3)
16. Discuss the energy supply during short-duration high-intensity exercise and long-duration exercises. Explain the measurement of energy cost of an activity. (5+5)+5

Internal Assessment : 30 marks
