

M. P. Ed 1<sup>ST</sup> Semester Examination 2021**Physiology of Exercise**

MPCC – 102

Full Marks – 70  
Hours

Time – 3

*The figures in the margin indicates full Marks.**The candidates are required to give their answers in their own words as far as practicable.**Illustrate the answer wherever necessary.*

1. Describe the structure of the contractile unit of skeletal muscle with diagram. Compare the characteristics of different types of muscle fibre. How neural transmission occurs at neuromuscular junction? 6+4+5=15

**OR**

Describe a neuromuscular junction with diagram in brief. Discuss the heat production in the skeletal muscle during exercise. State the effects of regular exercises on muscular system. 5+4+6=15

2. Discuss the conducting system of the Heart in brief. Describe the relation between cardiac output and stroke volume. Describe the effect of exercise on the Heart. 6+4+5=15

**OR**

Discuss the changes in blood flow in the body during exercise. What are the factors effecting heart rate during rest and exercise? Describe the effect of sports training on cardio vascular system. 5+4+6=15

3. Discuss the changes in pulmonary ventilation during different phases of exercise with graphical representation. Write a short note on  $VO_2$  max and sports performance. Discuss the involvement of respiratory muscles during exercise-breathing. 6+5+4=15

**OR**

How the gaseous exchange occurs between the alveoli and blood capillaries? What is EPOC? Describe the effect of exercise on respiratory system. 6+2+7=15

4. Identify the differences between anaerobic and aerobic metabolism. Discuss the energy supply system for the short duration high intensity exercise. Discuss the energy supply system for the long distance run. 5+5+5=15

**OR**

Discuss the energy supply system for the sprint events. What is ATP-PC system? How this system produces energy during exercise? What is the protocol to measure the cost of energy for swimming. 5+5+5=15

5. Write short notes on following (any two): 5x2=10

- (i) Thermoregulation
- (ii) Altitude acclimatization
- (iii) Ergogenic aid & Doping agents
- (iv) Stress test protocols