

M. P. Ed 1<sup>st</sup> Semester Examination 2016  
Physiology of Exercise  
MPCC – 102

Full Marks – 70

Time – 3 Hours

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

1. i) Name the types of muscle fibers with their special features.  
 ii) What are the effects of exercise on our muscular system? 9+6  

**OR**

 i) Illustrates the process of neuromuscular transmission with diagramme. 9+6  
 ii) How heat is produced in the muscle?
  
2. i) Describe the circulation of blood through left ventricle and lungs. 9+6  
 ii) What are stroke volume and cardiac output in respect to quality or volume of blood?  

**OR**

 i) What do you understand by Athletic Heart? 6+9  
 ii) “An Athletic heart is the product of cardiac hypertrophy”- Explain.
  
3. i) How pulmonary ventilation changes along with the intensity of exercise? 9+6  
 ii) Describe the role of diaphragm in breathing.  

**OR**

 i) What are the effects of spontaneous exercise on respiratory system? 9+6  
 ii) Narrate the concept of  $\dot{V}_{O_2}$
  
4. i) Define metabolism. 2+4+9  
 ii) What is phosphagen system?  
 iii) Distinguish between aerobic and anaerobic metabolism.  

**OR**

 i) Describe the energy metabolism during long duration exercise. 7+8  
 ii) Describe the role of mitochondria in aerobic energy production.
  
5. i) How low temperatures influence the sports performance? 5+5  
 iii) Distinguish between Ergogenic aid and Doping  

**OR**

Write short notes on any four: 2.5x4

  - a) Amphetamine and sports performance
  - b) The role of Beta blocker as an ergogenic aid
  - c) Influence of altitude on sports performance
  - d) Effect of caffeine on sports performance
  - e) Thermoregulation in low temperature
  - f) Disadvantages of hot climate