

5. Explain the following using a flow chart:

- i. Relation between ECG, Cardiac Cycle and Ventricular volumes
- ii. Relation between Neuromuscular junction, and excitation contraction coupling in skeletal muscle
- iii. Relation between FVC, FEV1, PEF and VC as measured in a spirometer (5x3= 15)

6. Comment on the following statements:

- i. Exercise can delay the physiological outcomes of ageing
- ii. A long QT in an ECG can be an indication of cardiac insufficiency during an exercise
- iii. Higher aerobic capacity is essential only in certain sports
- iv. Ligament tears are more common than muscle tears during endurance exercise.
- v. Use of growth hormone for increasing muscle endurance is contraindicated. (3x5= 15)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

आपका अनुक्रमांक.....

Sr. No. of Question Paper : 3006

I

Unique Paper Code : 2494002003

Name of the Paper : Physiology of sports and exercise

Name of the Course : GE- Biochemistry

Semester : III

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. There are 6 questions.
3. Attempt any 4 questions.
4. All questions carry equal marks. Question no. 1 is compulsory.

P.T.O.

1. A. Define the following:

- i. Lung compliance
- ii. Ergogenic aids
- iii. Hysterisis
- iv. Cardiac output
- v. Phosphocreatine
- vi. Muscle hypertrophy

B. Expand and elaborate the physiological significance of the following:

- i. VO_2 max
- ii. MAP
- iii. EDV
- iv. DOMS
- v. EMG
- vi. FEV

(6,9)

2. Differentiate between the following:

- i. Arteries and veins
- ii. Tidal volume and vital capacity
- iii. Conducting and contracting cardiac muscles
- iv. Slow and fast twitch fibres
- v. Muscle fatigue and muscle soreness.(3x5=15)

3. A. Explain the biochemical basis for the following:

- i. Higher venous return increases stroke volume
- ii. Respiratory acidosis and hypercapnea during extreme anaerobic exercise
- iii. Use of anabolic steroids to increase sports performance.
- iv. Decrease in LBM and increase in fat mass with ageing.
- v. Heart is an aerobic tissue as compared to muscle.

B. Comment and compare on the physiological difference in the performance of a marathon runner and a swimmer. (10,5)

4. A. Explain the use of the following drugs in sports doping:

- i. Erthropoetin
- ii. Beta blockers
- iii. Diuretic
- iv. Amphetamines

B. Explain the role of both hormonal and nutritional agents used to enhance sports performance.(9,6)