

**MASTER OF PHYSIOTHERAPY  
THIRD SEMESTER  
BASICS OF EXERCISE PHYSIOLOGY & NUTRITION  
MPT – 301**

**SET  
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

**( Objective )**

Time: 30 min.

Marks: 20

***Choose the correct answer from the following:***

***1×20=20***

1. Which of these is a immediate effect of physical exercise?
  - a. Increase Heart Rate
  - b. Improved in stamina
  - c. Increase in aerobic fitness
  - d. Increased in cardiac output
2. What is the formula for calculating Cardiac Output
  - a.  $CO = \frac{SV}{HR}$
  - b.  $CO = HR \times SV$
  - c.  $CO = HR + SV$
  - d.  $CO = \frac{HR}{SV}$
3. What is the normal QT interval:
  - a. 0.03 sec
  - b. 0.13 sec
  - c. 0.35 sec
  - d. 0.20 sec
4. Which is the basic text of Yoga philosophy?
  - a. Hath Yoga Pradipika
  - b. Patanjali Yoga sutra
  - c. Gheranda Samhitha
  - d. Shiv Samhitha
5. Cardiac output of atheletes is-
  - a. 5-10 lt/min
  - b. 10-20 lt/min
  - c. More than 35 lt/min
  - d. 15-20 lt/min
6. Which of the following is a early phase of systole?
  - a. Atrial systole
  - b. Reduced ejection
  - c. Isovolumetric systole
  - d. Rapid filling
7. The duration of cardiac cycle is -
  - a. 0.8
  - b. 0.3
  - c. 0.5
  - d. 0.4
8. What is impact on insulin hormone during exercise
  - a. Increases
  - b. Slight variation
  - c. Decreases
  - d. Constant

9. The benefits of exercise include
  - a. Improved insulin sensitivity
  - b. Lowered risk of heart disease
  - c. Reduced stress and enhanced quality of life
  - d. All of the above
10. What type of exercises are prescribed for hypothyroidism?
  - a. Low impact activities
  - b. Both
  - c. High impact activities
  - d. None
11. What is the immediate short-term response of Respiratory system to Exercise
  - a. Decrease in Breathing Rate
  - b. Increase in Respiratory Volume
  - c. Increase in Lung Capacity
  - d. Increase in Endurance
12. Which of the following membranes enclose the Lungs
  - a. Pleural Membrane
  - b. Pericardium
  - c. Perichondrium
  - d. Periosteum
13. Which of the following is not a part of Conductive zone of Lungs
  - a. Air Transport
  - b. Humidification
  - c. Warming
  - d. Blood Clotting Regulation
14. ATP Stands for
  - a. Adenosine Tri-Partite
  - b. Adenosine Tri Phosphate
  - c. Adenine Tri Phosphate
  - d. Autacoid Tri Phosphate
15. The study of flow of energy in a biological system is called as
  - a. Biology
  - b. Bioenergetics
  - c. Biotechnology
  - d. Biochemistry
16. Which Biological energy system uses Creatine Kinase to maintain concentration of ATP
  - a. Phosphagen System
  - b. Glycolytic System
  - c. Oxidative System
  - d. All of the above
17. Tidal Volume in a normal Human Being is
  - a. 500 ml
  - b. 100 ml
  - c. 1000 ml
  - d. 1500 ml
18. Total Lung Capacity in an average individual is
  - a. 2500 ml
  - b. 5800 ml
  - c. 3000 ml
  - d. 10000 ml
19. Bucket Handle movement is seen in:
  - a. Lower part of Thorax
  - b. Upper Part of Thorax
  - c. Central Thorax
  - d. All of the above
20. Factors affecting Lung Volumes are:
  - a. Genetic
  - b. Body Composition
  - c. Gender
  - d. All of the above



**( Descriptive )**

Time: 2 hrs 30 min

Marks: 50

*[ Answer question no.1 & any four (4) from the rest ]*

1. Explain the phases of Pulmonary Regulation during Exercise 10
2. Define athlete's heart in detail? Explain the different physiological parameters that vary in athlete's heart from normal individual. 10
3. Explain the Chemical and Non-Chemical Regulation of Ventilation during exercise. Also explain the anatomy of Ventilation 5+5=10
4. What will be the immediate effect of exercises on cardiovascular system and aerobic training? 10
5. Explain the Biological Energy Systems 10
6. Explain in detail the hormonal response to exercise with respect to 5+5=10
  - a. Insulin and glucagon
  - b. Thyroid and parathyroid hormone
7. Explain Pranayama and its types in detail. 10
8. Define the concept of yoga? Explain Asanas its various types and principles 10

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