

2025

## ANATOMY AND PHYSIOLOGY

Course : CC-102

Full Marks : 70

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

1. Classify and describe the epithelial tissues with simple diagram. Discuss the importance of studying anatomy and physiology in physical education. 10+5

**Or**

What are the characteristics of a synovial joint? Classify synovial joints with proper example mentioning movements around them. 3+12

2. Describe the structure of skeletal muscle with simple diagram. What are the major muscles make the shoulder girdle? 10+5

**Or**

Describe the functions of circulatory system of human body. Discuss the effect of exercises on the heart, heart rate, stroke volume and cardiac output. 5+10

3. Define Hormones and enlist its functions on human body. Write about the location, secretion and the functions of **any two** of the following hormones :

- (a) T<sub>4</sub>
- (b) Insulin
- (c) Adrenaline
- (d) ADH.

(2+3)+5+5

**Or**

Discuss the functions of autonomic nervous system. Draw a diagram of the Neuron and label its different parts. 5+10

4. Write notes on (**any two**) : 7½×2

- (a) Digestion of fat
- (b) Blood pressure and exercises
- (c) Oxygen debt or EPOC
- (d) Effects of exercise on skeletal muscles.

Please Turn Over

(3806)

5. Answer the following MCQs by choosing the correct option given below and write your answer on the answer script (*any ten*) : 1×10

- (a) The power house of the cell is
- |                |                            |
|----------------|----------------------------|
| (i) Lysosome   | (ii) Endoplasmic reticulum |
| (iii) Ribosome | (iv) Mitochondria.         |
- (b) Contraction and elasticity are the main characteristics of
- |                       |                        |
|-----------------------|------------------------|
| (i) Connective tissue | (ii) Nervous tissue    |
| (iii) Muscle tissue   | (iv) Lymphatic tissue. |
- (c) Patella is an example of
- |                  |                     |
|------------------|---------------------|
| (i) Compact bone | (ii) Irregular bone |
| (iii) Long bone  | (iv) Sesamoid bone. |
- (d) Moveable bones in the human vertebral column is
- |          |          |
|----------|----------|
| (i) 12   | (ii) 19  |
| (iii) 24 | (iv) 33. |
- (e) Amylase is an enzyme that helps to digest
- |                  |                |
|------------------|----------------|
| (i) Carbohydrate | (ii) Protein   |
| (iii) Fat        | (iv) Vitamins. |
- (f) The energy metabolism produces maximum ATP in human body
- |                      |                       |
|----------------------|-----------------------|
| (i) ATP-CP system    | (ii) Anaerobic system |
| (iii) Aerobic system | (iv) None of these.   |
- (g) The Oxygen is transported in human body by
- |                  |                  |
|------------------|------------------|
| (i) Erythrocytes | (ii) Lymphocytes |
| (iii) Monocytes  | (iv) Platelets.  |
- (h) The gaseous exchange between the blood and external air occurs inside the
- |                   |                 |
|-------------------|-----------------|
| (i) Nasal passage | (ii) Oesophagus |
| (iii) Larynx      | (iv) Alveoli.   |
- (i) In Nephron the filtration of blood for excretion occurs at the
- |                                |                       |
|--------------------------------|-----------------------|
| (i) Bowman's capsule           | (ii) Henle's loop     |
| (iii) Distal convoluted tubule | (iv) Collecting duct. |

- (j) An exercise where the muscle changes its length (shortens or lengthens) while the tension or force produced remains constant, allowing for movement is called
- (i) Isokinetic exercise
  - (ii) Isometric exercise
  - (iii) Isotonic exercise
  - (iv) Eccentric exercise.
- (k) The average value of Tidal Volume during rest is
- (i) 500 ml
  - (ii) 1000 ml
  - (iii) 1500 ml
  - (iv) 5000 ml.
- (l) Due to the intensive sports training, when the resting heart rate of an endurance athlete becomes below 60 beats per minute is termed as
- (i) Trachycardia
  - (ii) Bradycardia
  - (iii) Second wind
  - (iv) Cardiac output.
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