



## BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Physiotherapy-2022/B.Physiotherapy-2023/B.Physiotherapy-2024

Course Name – Human Physiology - II

Course Code - BPTC202

( Semester II )

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

(i) Choose the correct option for: Thin filament consists of all, except:

- |                |             |
|----------------|-------------|
| a) Actin       | b) Myosin   |
| c) Tropomyosin | d) Troponin |

(ii) When the tension in a muscle fiber is maximum its length is defined as:

- |                       |                      |
|-----------------------|----------------------|
| a) Optimum length     | b) Initial length    |
| c) Equilibrium length | d) None of the above |

(iii) State the resting membrane potential of skeletal muscles:

- |           |           |
|-----------|-----------|
| a) +50 mV | b) +70 mV |
| c) -70 mV | d) -90 mV |

(iv) Cite the event that happens when a nerve impulse arrives at the neuromuscular junction:

- |  |   |
|--|---|
| a) Release of calcium ions from sarcoplasmic reticulum                 | b) Acetylcholine binds to receptors on the post synaptic sarcolemmal membrane |
| c) Efflux of calcium through synaptic vesicles into the synaptic cleft | d) Initiation of formation of cross bridges to allow muscle contraction       |

(v) Report the extension of sarcomere

- |                    |                      |
|--------------------|----------------------|
| a) A band & I band | b) Two I bands       |
| c) Two Z-lines     | d) None of the above |

(vi) Select the correct option for: Thin filament in skeletal muscle does not contain:

- |           |                |
|-----------|----------------|
| a) Actin  | b) Troponin    |
| c) Myosin | d) Tropomyosin |

(vii) State the feature of Type I muscle fiber:

- a) Anerobic  
c) Fast acting
- b) Glycolytic  
d) Red
- (viii) Select the cause increasing Stroke volume during exercise
- a) the Frank-Starling mechanism  
c) decreased peripheral resistance
- b) increased ventricular contractility  
d) all of the above
- (ix) Choose the Partial pressure of oxygen in the inspired and expired air is respectively
- a) 158 and 116 mm Hg  
c) 100 and 95 mm Hg
- b) 158 and 40 mm Hg  
d) 40 and 95 mm hg
- (x) Identify the factor with process of respiration
- a) Intake O<sub>2</sub>  
c) Liberation of CO<sub>2</sub>
- b) Liberation of O<sub>2</sub>  
d) liberation of energy
- (xi) State the cause of Asthma as
- a) Infection of trachea  
c) Infection of lungs
- b) Spasm in bronchial muscles  
d) Bleeding into pleural cavity
- (xii) Identify the location of Gas exchange
- a) pharynx.  
c) alveoli.
- b) larynx.  
d) trachea.
- (xiii) Select the type of gaseous exchange in alveoli
- a) simple diffusion  
c) active transport
- b) osmosis  
d) passive transport
- (xiv) Choose the correct statement of Cardiac output
- a) the volume of blood pumped by each ventricle per minute  
c) the product of the ejection fraction and heart rate
- b) the proportion of blood pumped out of each ventricle during systole  
d) the electrical output of the cardiac conduction system during a single cardiac cycle
- (xv) Collect the proper statement of Blood pressure
- a) Heart sound  
c) Heart valve
- b) Peripheral resistance  
d) Arch of aorta

#### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain about the proprioceptors. (3)
3. Describe about the extrapyramidal tracts. (3)
4. Discuss about the morphology of Rod & Cone cells. (3)
5. Explain the effect of exercises on blood pressure. (3)
6. Explain about referred pain. (3)

OR

Illustrate the type of receptors involved in sensory signals. (3)

#### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Enumerate the contractile properties of skeletal muscles. (5)
8. Describe the neuromuscular junction with a suitable diagram. (5)
9. List the various changes taking place during muscular contraction. (5)

- OR**

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