BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – B.Physiotherapy-2022/B.Physiotherapy-2023/B.Physiotherapy-2024/B.Physiotherapy-2025
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) State the cause of repolarization:
a) Sodium b) Magnesium
c) Calcium d) Potassium

(ii) Predict the band that disappears on muscle contraction:
a) A b) H
c) I d) M

(iii) 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

(iv) Select when skeletal muscle contraction ends:
a) Ions move out of cytoplasm b) Closure & indrawing of receptors
c) Acetylcholine is absorbed from neuromuscular junction d) Decreased calcium outside sarcoplasmic reticulum

(v) State the feature of Type I muscle fiber:
a) Anerobic b) Glycolytic
c) Fast acting d) Red

(vi) State the action of calmodulin:
a) Activation of ryanodine receptors b) Activation of protein kinase
c) Release of acetylcholine d) None of the above

(vii) Select the cause increasing Stroke volume during exercise
a) the Frank-Starling mechanism b) increased ventricular contractility
c) decreased peripheral resistance d) all of the above

(viii) Choose the Partial pressure of oxygen in the inspired and expired air is respectively
a) 158 and 116 mm Hg b) 158 and 40 mm Hg

c) 100 and 95 mm Hg
d) 40 and 95 mm hg

(ix) Choose the correct statement of Cardiac output

a) the volume of blood pumped by each ventricle per minute
b) the proportion of blood pumped out of each ventricle during systole
c) the product of the ejection fraction and heart rate
d) the electrical output of the cardiac conduction system during a single cardiac cycle

(x) Collect the proper statement of Blood pressure

a) Heart sound
b) Peripheral resistance
c) Heart valve
d) Arch of aorta

(xi) Identify the cells arising from Fibers of pyramidal tracts

a) medial longitudinal fascicular cells
b) Betz cells
c) anterior white column of spinal cord
d) thoracic segments of spinal cord

(xii) Select the sensory nerves helpful in maintenance of balance and posture

a) Cutaneous
b) Olfactory
c) Optic
d) Proprioceptor

(xiii) Choose the right answer in intramascular vasodilatation increases approx

a) 0.2
b) 0.25
c) 0.3
d) 0.5

(xiv) Select the right answer at where blood flow increases in organ during exercises

a) Kidney
b) Spleen
c) Cerebrum
d) Skeletal muscles

(xv) Differentiate the correct statements for excitation-contraction coupling

a) The muscle action potential propagates along the sarcolemma and down the transverse tubules
b) Ca2+ released from the sarcoplasmic reticulum binds to tropomyosin
c) Troponin blocks binding of myosin heads to actin filaments.
d) Relaxation occurs when Ca2+ is excreted from the muscle fibre.

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Explain about the proprioceptors. (3)
3. State about the clonus. (3)
4. Classify various types of neurotransmitters according to their chemical nature. (3)
5. Explain the effect of exercises on blood pressure. (3)
6. Summarize about the referred pain. (3)

OR

Compare between cutaneous pain and deep pain. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Describe in detail about the connections and functions of the pyramidal tracts. (5)
8. Discuss about the environmental factors in exercises. (5)
9. Explain the various methods to measure cardiac output. (5)
10. Explain 3 types of muscle fibres and their characteristic. (5)
11. Differentiate between skeletal muscle and cardiac muscle. (5)
12. Compare between the coronary circulation and cerebral circulation. (5)

OR

Illustrate the process of regulation of pulmonary ventilation. (5)