



## BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – B.Sc.(PA)-2023

Course Name – Human Physiology- Part I

Course Code - BPAC102

( Semester I )

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) Identify the process by which the body maintains its core internal temperature
  - a) Osmoregulation
  - b) Photoregulation
  - c) Thermoregulation
  - d) Electroregulation
- (ii) Name the hormone that enhances uterine contractions during childbirth
  - a) Estrogen
  - b) Progesterone
  - c) Oxytocin
  - d) Prolactin
- (iii) Choose the thickest layer in the arteries?
  - a) Tunica intima
  - b) Tunica media
  - c) Tunica adventitia
  - d) All layers of equal thickness
- (iv) Indicate the correct number of spinal nerves emerging from the spinal cord.
  - a) 21
  - b) 31
  - c) 41
  - d) 51
- (v) Identify function of Botulinum toxin
  - a) enhance neurotransmitter release
  - b) inhibit neurotransmitter release
  - c) inhibit muscle relaxation
  - d) inhibit splasticity
- (vi) Write down the instrument used for measuring blood pressure is known as
  - a) ECG
  - b) EEG
  - c) Sphygmomanometer
  - d) Stethoscope
- (vii) Choose the layer of meninges located in the middle
  - a) Dura Mater
  - b) Arachnoid Mater
  - c) Pia Mater
  - d) Lateral Mater
- (viii) Identify the function of cerebellum
  - a) Touch sensation
  - b) coordination of eye movements
  - c) Language processing
  - d) Processing sensory information
- (ix) Indicate Circle of Willis is constructed in
  - a) Coronary Circulation
  - b) Systemic Circulation

- c) Cerebral Circulation  
d) Hepatic Circulation
- (x) Select the name of the ion which is essential for muscle contraction.
- a)  $\text{Na}^+$   
b)  $\text{Ca}^{2+}$   
c)  $\text{Cl}^-$   
d)  $\text{K}^+$
- (xi) Compare which motor neuron correlate extrafusal fibers of skeletal muscle?
- a) Alpha moto neuron  
b) Gamma motor neuron  
c) Delta motor neuron  
d) Alpha and Delta motor neurons
- (xii) Indicate Lateral spinothalamic tract is connected for
- a) carry sensation of pain  
b) carries impulses of crude touch (protopathic) sensation.  
c) carry cold temperature sensations  
d) pathway for subconscious kinesthetic sensation
- (xiii) TRACT OF GOLL is interpreted for
- a) Pain  
b) Temperature  
c) Balance  
d) Tactile sensation
- (xiv) Select which of the following chemical at a neuromuscular junction synaptic vesicles discharge
- a) Epinephrine  
b) Acetylcholine  
c) Adrenaline  
d) Dopamine
- (xv) Identify the ion that is in higher concentration in ECF as compared to intracellular fluid
- a) Potassium ( $\text{K}^+$ )  
b) Magnesium ( $\text{Mg}^{2+}$ )  
c) Sodium ( $\text{Na}^+$ )  
d) Calcium ( $\text{Ca}^{2+}$ )

### Group-B

(Short Answer Type Questions)

$$3 \times 5 = 15$$

2. Write a short note on heart sounds. (3)
3. Distinguish between Endocytosis and Exocytosis. (3)
4. Illustrate the ABO blood grouping system (3)
5. Differentiate Between Monosynaptic and Polysynaptic Reflexes (3)
6. Correlate the functions of Basal nuclei with Parkinson's disorder. (3)

**OR**

Explain the reflex arc with examples. (3)

### Group-C

(Long Answer Type Questions)

$$5 \times 6 = 30$$

7. Write the factors affecting blood pressure. (5)
8. Explain the mechanism of blood clotting (5)
9. Classify leukocytes into their major categories and functions (5)
10. Explain the functions of the Cerebellum. (5)
11. Describe the process of Action potential mentioning different phases. (5)
12. Write the cardiac cycle with different phases. (5)

**OR**

Create a flowchart detailing the process of erythropoiesis (5)

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