



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – B.Sc.(OTT)-2022/B.Sc.(OTT)-2023/B.Sc.(CCT)-2023

Course Name – Human Physiology

Course Code - BOTTC102/BCCTC102

(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) Recognize the nerve fibre in which action potential move fast
 - a) unmyelinated nerve fibre
 - b) myelinated nerve fibre
 - c) demyelinated nerve fibre
 - d) None of these
- (ii) Choose the correct option: The volume of air that we normally breathe in and out in a quiet respiration is termed as:
 - a) Residual volume
 - b) Functional residual capacity
 - c) Tidal volume
 - d) Normal reserve volume
- (iii) Select the type of water transport process in nephron
 - a) passive diffusion
 - b) Aquaporin cahnnel
 - c) active transport
 - d) osmosis
- (iv) Explain why SA node is termed as the pacemaker of the heart.
 - a) SA node has a poor cholinergic innervation
 - b) SA node has a rich sympathetic innervation
 - c) SA node can generate impulses at the lowest rate
 - d) SA node can generate impulses at the highest rate
- (v) Identify function of Botulinum toxin
 - a) enhance neurotransmitter release
 - b) inhibit neurotransmitter release
 - c) inhibit muscle relaxation
 - d) inhibit splasticity
- (vi) Write the name of blood component that maintains blood pressure and fluid balance.
 - a) RBC
 - b) WBCs
 - c) Platelets
 - d) Plasma
- (vii) Identify the function of Cerebral cortex
 - a) Maintaining balance:
 - b) Coordination of the movement
 - c) Planning and organization
 - d) None of these
- (viii) Identify the phase of cardiac cycle in which ventricles are filled with blood.
 - a) Arterial Depolarization
 - b) Arterial Repolarization
 - c) Ventricular Systole
 - d) Ventricular Diastole

- (ix) Tell the relationship of heart rate (HR) and stroke volume (SV) with cardiac output (CO).
 a) Increased HR increases CO. b) Decreased SV decreases CO.
 c) $CO = HR \times SV$ d) All of these.
- (x) You are suddenly taken to the top of Everest. Name the condition you may experience.
 a) Hypoxia b) Mountain sickness
 c) Both options are correct d) None of these are correct
- (xi) Identify the correct option: Glucagon is secreted by _____ cells of pancreas.
 a) gamma b) delta
 c) beta d) alpha
- (xii) Select the time of the day when melatonin secretion is maximum:
 a) Early morning. b) Afternoon.
 c) Evening. d) Night.
- (xiii) Name the hormones involved in blood glucose regulation.
 a) Insulin. b) Glucagon.
 c) Both options are correct d) None of these
- (xiv) Select the primary function of prolactin.
 a) Regulation of blood sugar levels b) Stimulation of milk production in the mammary glands
 c) Control of the body's response to stress d) Regulation of the sleep-wake cycle
- (xv) Select the correct option: Blood clot is produced due to
 a) Activation of platelets b) Presence of heparin
 c) Blood flow inside the blood vessels d) Hyperactivity of heart

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Write a short note on repolarization during action potential. (3)
3. Explain how oxygen is transported in the blood, and which molecule is primarily responsible for this transport (3)
4. Write the functions of plasma proteins. (3)
5. Explain the function of the cytoskeleton (3)
6. Evaluate the functions of bile. (3)

OR

Focus on the functions of GI Hormones.

(3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Discuss the hormonal changes that occur during each phase of the menstrual cycle. (5)
8. Describe the structure of hemoglobin. (5)
9. Discuss about the origin and propagation of cardiac impulse. (5)
10. Distinguish between the types of hypoxia. (5)
11. Explain the different types of cellular transport mechanism (5)
12. Evaluate the factors that affects glomerular filtration rate. (5)

OR

Evaluate the functions of thyroid hormone in human body.

(5)
