

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PSYCHOLOGY & COUNSELLING
ACADEMIC YEAR 2020/2021- SEMSETER II



BACHELOR OF SCIENCE HONOURS IN PSYCHOLOGY
PLU3310 – BIOLOGICAL PSYCHOLOGY – LEVEL3
CONTINUOUS ASSESSMENT TEST II - NBT 1
DURATION: ONE HOUR

DATE: 04th JUNE 2022

TIME: 09.00AM –10.00AM

REGISTRATION NO:

IMPORTANT INSTRUCTIONS/ INFORMATION TO CANDIDATES

- This question paper consists of **06** pages with **20 Multiple Choice Questions (Section 1)** and **12 Short Answer Questions (Section 2)**.
- Write your Registration Number in the space provided.
- Answer **ALL** questions.
- **Multiple Choice Questions (Section 1):** Indicate answers in the answer sheet provided by placing a cross (X) in **INK** in the relevant cage (answers in pencil will **NOT** be marked)
- **Short Answer Questions (Section 2):** Write answers within the space provided.
- Do **NOT** remove any page/part of this question paper from the examination hall.
- Do **NOT** keep unauthorized material, including mobile phones and other electronic equipment, with you during the examination.

SECTION 1: MULTIPLE CHOICE QUESTIONS (20 QUESTIONS – 40 MARKS)

- 1 Which one of these techniques can be used to investigate both the functional and structural aspects of nervous system?
 - a. CAT scan
 - b. PET scan
 - c. MRI scan
 - d. EEG scan

- 2 Which scientist demonstrated that electrical impulses can be conducted through muscle tissue and that muscle will twitch when this is done?
 - a. Rene Descartes
 - b. Camillo Golgi
 - c. Aristotle
 - d. Luigi Galvani

- 3 Which one of these carbohydrates are significantly larger than the others?
 - a. Fructose
 - b. Glucose
 - c. Maltose
 - d. Ribose

- 4 Which part of the neuron carries out an afferent function?
 - a. Axon
 - b. Soma
 - c. Axon Hillock
 - d. Dendrite

- 5 Which one of these statements are false regarding the myelin sheath?
 - a. Myelin sheath acts as an insulator for electrical signals.
 - b. Many, but not all axons are covered by myelin.
 - c. Axon Hillock is completely covered by myelin.
 - d. Myelin sheath is made up of protein and fatty materials

- 6 Which of these is the most abundant type of neurons found in the nervous system?
 - a. Bipolar neuron
 - b. Multipolar neuron
 - c. Pseudounipolar neuron
 - d. Sensory neuron

- 7 In what location of a neuron is the action potential generated?
 - a. Nucleus
 - b. Axon
 - c. Nodes of Ranvier
 - d. Axon Hillock

8. Which one of these is not a part of the three layers that are involved in the chemical signal transmission?
 - a. Terminal bulb
 - b. Presynaptic Terminal
 - c. Synaptic Cleft
 - d. Post Synaptic Terminal

9. Which of these glial cells are only found in the peripheral nervous system?
 - a. Microglia
 - b. Astrocytes
 - c. Oligodendrites
 - d. Schwann cells

10. Which of these statements is correct?
 - a. Most neurotransmitters are deactivated by reuptake
 - b. Most of a neuron's DNA is contained within its axon
 - c. Neurotransmitter release occur due to synthesis process
 - d. Neurotransmitters are often stored in synaptic buttons

11. Which one of these neurotransmitters act as both an excitatory and inhibitory messenger?
 - a. Acetylcholine
 - b. GABA
 - c. Glycine
 - d. Glutamate

12. Which one of these is a part of the peripheral nervous system?
 - a. Hypothalamus
 - b. Spinal Cord
 - c. Reticular Activating System
 - d. Somatic nervous system

13. Which one of these structures belong to the Telencephalon?
 - a. Basal Ganglia
 - b. Pons
 - c. Superior Colliculus
 - d. Tectum

14. Which one of these structures is a part of the diencephalon?
 - a. Inferior colliculus
 - b. Hypothalamus
 - c. Red nucleus
 - d. Medulla oblongata

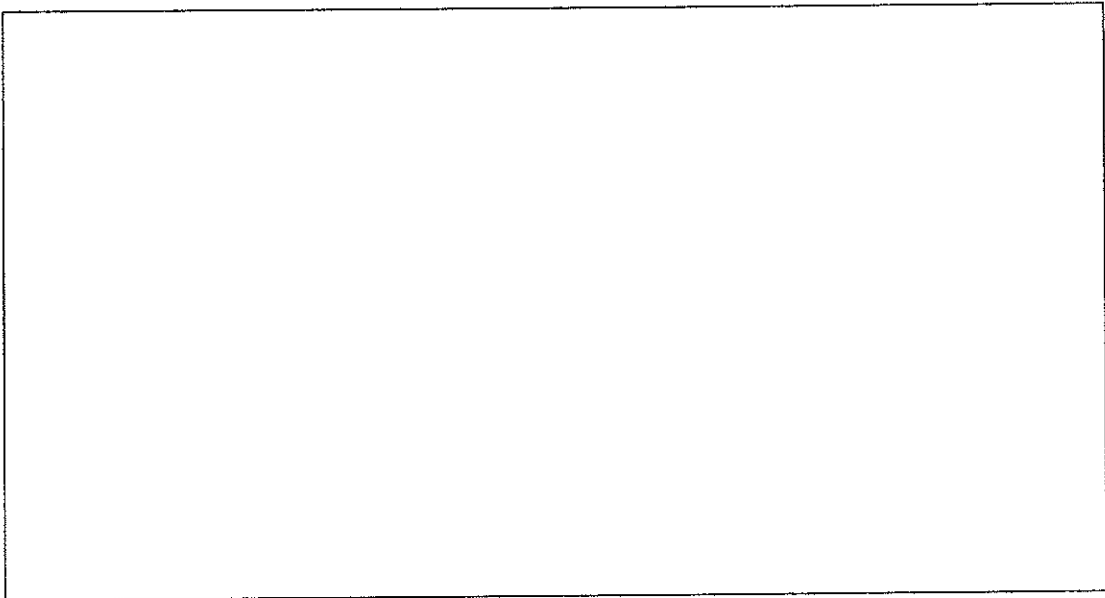
15. What is the 'all or none law'?
- The velocity of saltatory conduction of an action potential are dependent of the intensity of the stimulus that generates the action potential.
 - The velocity of saltatory conduction of an action potential are independent of the intensity of the stimulus that generates the action potential.
 - The amplitude and velocity of an action potential are dependent of the intensity of the stimulus that generates the action potential.
 - The amplitude and velocity of an action potential are independent of the intensity of the stimulus that generates the action potential.
16. Which of these is the main function of the temporal lobe?
- Speech production
 - Initiation of voluntary movements
 - Language Comprehension
 - Processing sensory information
17. Which one of these is part of the forebrain?
- Mesencephalon
 - Metencephalon
 - Diencephalon
 - Myelencephalon
18. The Parasympathetic nervous system action is known as,
- Fight or flight response
 - Stimulus and response
 - Rest and digest response
 - Voluntary and reflex response
19. Which type of ion influx causes neurotransmitter filled vesicles to fuse with the Presynaptic terminal?
- Na⁺
 - Ca²⁺
 - K⁺
 - Cl⁻
20. If a child is capable of understanding instructions given but have issues talking back to a person, might be a result of damage to what region of the brain?
- Precentral gyrus
 - Occipital cortex
 - Broca's area
 - Wernicke's area

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SECTION 2: SHORT ANSWER QUESTIONS (60 MARKS)

WRITE ANSWERS WITHIN THE SPACE PROVIDED.

1. Draw the action potential graph and label each segment (5 marks)



2. List the five types of spinal nerves (5 marks)

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3. Name one function for each of these lobes in the brain? (5 marks)

Parietal lobe

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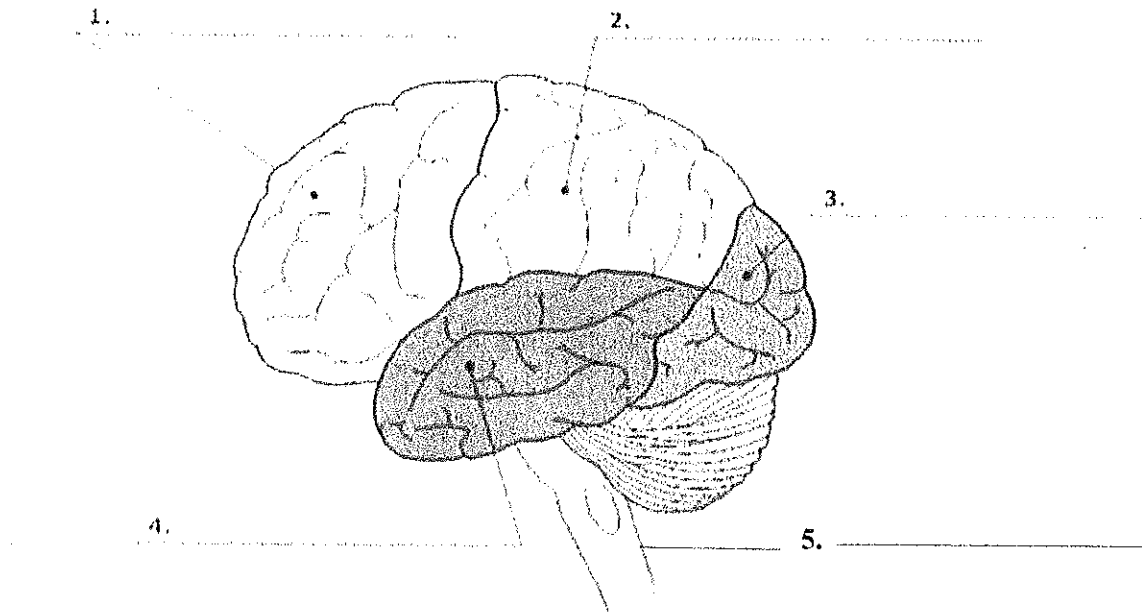
Occipital lobe.....

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4. Label the following parts of the brain



5. Name one excitatory neurotransmitter and one inhibitory neurotransmitter

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6. Name FIVE physiological changes that take place during the sympathetic nervous system activation.

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7. Briefly explain 'salutatory conduction' ?

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8. Complete the table below with the name of the most suitable structures (5 marks).

Division of the layers of the neural tube at three weeks	One structure formed by each layer
Forebrain

Midbrain
Hindbrain

9. What is the main function of corpus callosum? (5 marks).

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10. Name the two divisions of the peripheral nervous system (5 marks)

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11. Name two of the structural variations of neurons (5 marks)

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12. Write two functions of glial cells in human nervous system.

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REGISTRATION NO:

ANSWER SHEET FOR SECTION 1

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