PRIFYSGOL ABERYSTWYTH UNIVERSITY

SEMESTER ONE 2025

PSYCHOLOGY DEPARTMENT

PS32120: BEHAVIOURAL NEUROSCIENCE

Time allowed: **2 HOURS**

Instructions to students:

- This is a seen exam. Questions will be available two weeks before the exam.
- No additional materials allowed to be brought into the exam i.e. no notes, books, devices, or any other items

Part A (20%):

Answer ALL TEN (10) short answer questions

- Each question carries equal marks [2 potential marks for each question].
- It is suggested that you write approximately two (2) to three (3) sentences to answer each question.

Part B (80%):

Answer One (1) Question from choice of Three (3)

- It is recommended that you provide relevant citations/references in your answers (a references section is not required)
- It is suggested that you write approximately 4-6 sides of text in the exam booklet to fully address your question.

STUDENTS MAY SUBMIT ANSWERS TO THIS PAPER IN EITHER WELSH OR ENGLISH

Once seated, students may complete the front cover of the answer book(s) and the attendance slip ONLY.

DO NOT TURN THE EXAMINATION QUESTION PAPER OVER UNTIL INSTRUCTED TO DO SO.

Part A: Short answer questions. Answer All Questions [20%]

1. Explain how the presence of myelin on an axon speeds up conduction velocity.

2. Explain the concept of long-term potentiation (LTP)

3. List three most commonly affected brain regions in the BEHAVIOURAL variant of frontotemporal dementia and outline at least one clinical feature associated with the damage of these regions.

4. Explain how the amygdala is implicated in depression.

5. Briefly explain the concept of biological ageing and things that may influence the process.

6. Briefly explain what nociceptive pain is.

7. Give an example of the different types of behaviour produced by the somatic and autonomic nervous systems.

8. List two subtypes of schizophrenia and outline some of their main characteristics.

9. What do functional imaging methods measure compared to structural methods? Explain and provide two examples of functional imaging methods

10. What are two main connections and functions of the hypothalamus?

Part B: Essay style question - Only answer One (1) Question [80%]

1. John, a 58-year-old male, has been admitted to the hospital with an inability to move his right arm and leg, accompanied by difficulties speaking. Using this scenario as a foundation, explain the three most significant neurocognitive deficits—motor, language, and socio-affective—that can occur following a stroke. In your answer, review the clinical features of these deficits, discuss the neural correlates responsible for each and explain how these deficits manifest in a patient's daily life.

2. A patient is suffering from generalised anxiety disorder (GAD). Describe the neural and hormonal basis of stress and anxiety that explain the behavioural and psychological characteristics of GAD

3. What happens when we eat? Describe the physiological processes and main nervous system structures involved in the process, explaining the phases of our food metabolism.

END OF PAPER