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THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PSYCHOLOGY & COUNSELLING
2024/2025 – SEMESTER I —FINAL EXAMINATION



BSC (HONS) IN PSYCHOLOGY
PLU 4304 – BRAIN AND BEHAVIOUR - LEVEL 4
FINAL EXAMINATION PAPER
DURATION: 03 HOURS

DATE: 02nd May 2025

TIME: 9.30 a.m. – 12.30 p.m.

SECTION 2: STRUCTURED ESSAY QUESTIONS (60 MARKS)

Choose 04 out of the 06 questions given below and answer using the provided answer sheets

- 2.1 Stress is the body's natural response to challenges or threats, activating physiological and psychological mechanisms to help cope with demanding situations. Also the body's reaction to stress involves complex biological processes.
- a) Describe the physiological processes involved in the stress response. (5 marks)
 - b) How does Selye's General Adaptation Syndrome (GAS) model explain the biological response to stress? Explain (5 marks)
 - c) Discuss the long-term negative effects of stress on health and behaviour. (5 marks)
- 2.2 Researching the genetic basis of behavior raises both scientific and ethical concerns.
- a) What is behavioural genetics, and how does it integrate genetic and environmental factors in shaping human behaviour? Explain (7 marks)
 - b) Discuss the potential risks and benefits of studying the genetic basis of behaviour. (8 marks)
- 2.3 The human brain undergoes continuous development and adaptation throughout life, with neurons playing a crucial role in this process.
- a) Explain the stages involved in the development of neurons. (5 marks)
 - b) Discuss the role of neuroplasticity in the brain's recovery following a stroke. (5 marks)
 - c) Discuss the challenges of neuroplasticity in adulthood. (5 marks)
- 2.4 Amali, a 28-year-old woman, reports feeling a deep emotional connection with her newborn daughter. She describes intense feelings of love, bonding, and a strong desire to care for her.
- a) Discuss the role of hormones in maternal bonding in the context of maternal attachment. (7 marks)
 - b) Discuss how environmental and social factors influence early motherhood bonding. (8 marks)

- 2.5 Emotions are complex psychological and physiological responses influenced by various brain structures. Despite emotions being linked to common biological processes in humans, defining them remains challenging.
- a) **Discuss the contributions of the amygdala, hippocampus, and hypothalamus in the experience of emotions.** (7 marks)
 - b) **Explain the challenges in defining emotions, even though they share the same biological processes in humans.** (8 marks)
- 2.6 **Amal, a 45-year-old man, has struggled with alcohol addiction for years. Despite losing his job and facing various health issues, he refuses to seek help, often hiding his drinking and feeling ashamed of his addiction. Assess Amal's alcohol addiction by examining the neurobiological antecedents and the role of dopamine in reinforcing addictive behaviour. Discuss how Amal's brain's reward system contributes to his ongoing alcohol use.** (15 marks)

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