

DATE: 04th November 2025

TIME: 01.30 P.M. – 04.30 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 The nervous system and its components play a key role in regulating cognition and behavior.**
- a) Compare and contrast the central nervous system (CNS) and peripheral nervous system (PNS) in terms of their structure and role in cognition. (5 marks)
 - b) Describe the functions of the cerebral cortex, and analyse how its four lobes contribute to different aspects of cognition. (5 marks)
 - c) Compare neurotransmitters and hormones in terms of function, and influence on cognition and behavior. (5 marks)
- 2.2 Understanding how we perceive the world involves studying the role of needs, perceptual organization, and cognitive frameworks.**
- a) Explain the role of motives and needs in shaping perceptual processes with relevant illustrations. (5 marks)
 - b) Explain the law of proximity and illustrate it with a practical example. (5 marks)
 - c) Explain template theory and how it supports bottom-up perception. (5 marks)
- 2.3 Ravi, a university student, studied Spanish last semester. This semester, he is learning French but often finds himself recalling Spanish words instead of French. He also notices that learning new French vocabulary sometimes interferes with recalling previously learned Spanish words.**
- a) Analyze Ravi's experience using relevant theory of forgetting and retrieval. (5 marks)
 - b) Suggest practical strategies Ravi could use to reduce interference and enhance his language learning. (10 marks)
- 2.4 Object recognition is a key cognitive process that allows humans to perceive and identify objects in their environment by interpreting visual information.**
- a) Explain Marr's computational approach to object recognition, describing the three representations involved, the primal sketch, the 2½-D sketch, and the 3-D model representation. (7 marks)
 - b) Explain Biederman's Recognition-by-Components (RBC) theory, with emphasis on the role of geons. (8 marks)

2.5 Attention is a fundamental cognitive process that helps humans survive and adapt to their environment.

- a) Define the term “attention” and, using the example of driving, explain why it is essential for safe and efficient human performance. (7 marks)
- b) Critically evaluate the strengths and limitations of Broadbent’s Filter Theory. (8 marks)

2.6 A young Sri Lankan university student was assaulted and later asked to identify the suspect in a police lineup. Under conditions of extreme stress, he confidently identified a man whom he believed was the perpetrator. This identification became a key piece of evidence in securing his conviction. However, years later, new forensic analysis revealed that the man she identified was innocent. Analyse how factors such as stress, weapon focus, and the confidence of the eyewitness may have influenced his decision during the identification process. (15 marks)

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