

UNIVERSITY OF BOLTON

SCHOOL OF PSYCHOLOGY

PSYCHOLOGY PATHWAYS

SEMESTER 2 EXAMINATIONS 2023/2024

**COGNITIVE AND BIOPSYCHOLOGICAL
PERSPECTIVES**

MODULE NO: PSC4003

Date: Monday, 13th May 2024

Time: 10:00am – 12:00pm

INSTRUCTIONS TO CANDIDATES:

Candidates are advised that the examiners attach importance to legibility of writing and clarity of expression. **YOU ARE STRONGLY ADVISED TO PLAN YOUR ANSWERS.**

There are **60** questions on this paper. Answer **ALL** the questions.

All questions carry equal marks.

Write your answers in the answer booklet provided. Any answers not written in the answer book will not be marked.

Both question paper and answer book must be handed in at the end of the examination.

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1. Which of the following best describes Cognitive Psychology?
 - a. The scientific study of Mental Structure
 - b. The scientific study of Mental Health
 - c. The scientific study of Mental Processes
 - d. The scientific study of Mental Arithmetic
2. What strategy is used by Cognitive Psychology to study mental processes?
 - a. Measuring performance during cognitive tasks
 - b. Measuring neural processes during cognitive tasks
 - c. Measuring emotions during cognitive tasks
 - d. Measuring somatic data during cognitive tasks
3. Which of the following is the theoretical framework for the scientific study of cognition?
 - a. Information Technology
 - b. Information Processing
 - c. Information Theory
 - d. Information Management
4. How does Cognitive Neuroscience contribute to the understanding of cognition?
 - a. By studying cognition in computational models
 - b. By studying cognition in semantic networks
 - c. By studying cognition in non-human animals
 - d. By studying cognition in brain damaged individuals
5. The notion that perception involves actively creating internal representations of the world implies that these representations are:
 - a. Subjective models of the physical world
 - b. Exact illustrations of the physical world
 - c. Mirror images of the physical world
 - d. Passive reflections of the physical world
6. Which of the following statements describes bottom-up processing?
 - a. Associated with a combination of sensory data and stored information
 - b. Associated with making inferences from sensory data
 - c. Associated exclusively on sensory data
 - d. Associated exclusively on stored information

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7. Which type of processing do Visual Illusions illustrate?
- Passive
 - Bottom-up
 - Top-down
 - Graphemic
8. According to Gibson's (1966) theory of direct perception, Texture Gradient is an example of:
- A theory-driven notion of distance
 - A data-driven notion of distance
 - A socially-constructed notion of distance
 - A concept-based notion of distance
9. According to Gregory's theory, perception is best understood as:
- Direct and passive
 - Indirect and passive
 - Direct and active
 - Indirect and active
10. Which of the following models of object recognition cannot adequately account for non-canonical representations of prototypical objects?
- Template Matching
 - Feature Analysis
 - Recognition by Components
 - None
11. Why are attentional bottlenecks necessary?
- Because processing resources are unlimited
 - Because processing resources are limited
 - Because behavioural responses are unlimited
 - Because behavioural responses are limited
12. Which type of attention illustrates top-down processing?
- Endogenous Attention
 - Exogenous Attention
 - Limited Attention
 - Unsustained Attention

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13. Which of the following describes the type of processing that takes place after an Attentional Bottleneck?
- Bottom-up
 - Top-down
 - Parallel
 - Serial
14. According to Broadbent's Filter Theory, at which stage is information selected for further processing?
- At the sensory level
 - At the perceptual level
 - At the semantic level
 - At the response level
15. According to Treisman's (1964) theory of selective attention, what happens to unattended messages?
- Are filtered out before sensory processing
 - Are filtered out after sensory processing
 - Are processed in an attenuated state
 - Are processed in full
16. Which of the following accounts for the possibility of information not processed at a conscious level having an effect on behaviour?
- Broadbent's Filter Model
 - Treisman's Attention Model
 - Deutsch & Deutsch's Late Selection Model
 - Neisser's Synthesis Model
17. In what memory store is the information preferentially kept in a semantic code?
- Sensory Memory
 - Short-Term Memory
 - Working Memory
 - Long-Term Memory

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18. In memory, the process of translating a read letter into a sound is an example of:
- Encoding
 - Consolidation
 - Storage
 - Retrieval
19. Recall characterized by a pattern of errors that is based on the stimuli's sounds suggests that information was coded:
- Visually
 - Phonologically
 - Semantically
 - Abstractly
20. According to the Working Memory model, what component is responsible for maintaining attention on the task's goals?
- The Central Executive
 - The Visuo-spatial Sketchpad
 - The Phonological Loop
 - The Episodic Buffer
21. How can the Recency Effect be explained?
- Information that is still present on the STM store
 - Information that has been processed and transferred to the LTM store
 - Information that is available at an unconscious level
 - Information that is being actively encoded into semantic networks
22. Which of the following illustrates Procedural Memory?
- Knowing how to ride a bicycle
 - Knowing what you had for breakfast yesterday
 - Knowing that Paris is the capital of France
 - Knowing the answer to this question
23. From the following, which one is an example of a type of non-declarative long-term memory?
- Non-associative Learning
 - Episodic Memory
 - Semantic Memory
 - Autobiographic Memory

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24. A deficit in retrieving previously acquired information is described as:
- Dissociative Amnesia
 - Childhood Amnesia
 - Anterograde Amnesia
 - Retrograde Amnesia
25. Executive Function is essential for:
- Automatic responses to environmental stimuli
 - Novel situations requiring behavioural flexibility
 - Well learned sequences of behaviour
 - Prepotent behaviours associated with previous situations
26. Which of the following are not associated with Executive Function?
- Automatic responses to environmental stimuli
 - Difficult problems requiring behavioural coordination
 - Novel situations requiring behavioural flexibility
 - Situations that require overriding habitual responses
27. According to the *Supervisory Attentional Model* Schema Control Units are:
- Internal Representations of Objects
 - Internal Representations of People
 - Internal Representations of Actions
 - Internal Representations of Places
28. According to Norman and Shallice's (1986) theory, the key role of the *Supervisory Attentional System* is to:
- Automatically activate Schema Control Units
 - Select the appropriate Schema Control Units
 - Inhibit the activation of Somatic Markers
 - Support automatic responses
29. What is the *Contention Scheduling* bias mechanism responsible for implementing?
- Familiar and simple actions
 - Novel and complex actions
 - Dangerous and hazardous actions
 - All types of actions

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30. The notion that previously experienced bodily responses influence behavioural decisions is the hallmark of:
- The Working Memory Model
 - The Supervisory Attentional Model
 - The Somatic Marker Hypothesis
 - The Cascade of Control Model
31. The division of the nervous system linked to peripheral sensory and motor activity is the:
- Sympathetic nervous system
 - Spinal nervous system
 - Somatic nervous system
 - Social nervous system
32. Which type of nerve originates from the brain stem:
- Optic nerve
 - Sciatic nerve
 - Cranial nerve
 - Dorsal nerve
33. Which of the following brain structure is linked to memory consolidation?
- Hippocampus
 - Pons
 - Cortex
 - Pineal gland
34. The amygdala is a part of the:
- Brain stem
 - Limbic system
 - Spinal column
 - Striatum
35. In what lobe is the 'where pathway' of the visual system generally located?
- Parietal
 - Occipital
 - Temporal
 - Limbic

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36. Action potentials pass down the:

- a. Spines
- b. Boutons
- c. Axon
- d. Vesicles

37. The threshold for an action potential to occur is:

- a. - 90 mV
- b. 0 mV
- c. 40 mV
- d. - 55mV

38. Hyperpolarisation is characterised by the charge inside the neuron becoming:

- a. More negative
- b. More positive
- c. Neutral
- d. Positive to neutral

39. The symbol for the Sodium ion is:

- a. K-
- b. GABA+
- c. Na+
- d. NO₂

40. Endorphins are a type of:

- a. Monoamine
- b. Neuropeptide
- c. Hormone
- d. Cell

41. The source of energy for the sodium-potassium pump is:

- a. Protein
- b. RNA
- c. Sugars
- d. ATP

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42. What is the most commonly occurring neurotransmitter in the mesolimbic pathway?

- a. Substance K
- b. Glutamate
- c. Dopamine
- d. Amino acid

43. Where are Schwann cells found?

- a. Spinal cord
- b. Peripheral nervous system
- c. Limbic system
- d. Central nervous system

44. Tryptophan is a precursor of:

- a. Neurotransmitters
- b. Astrocytes
- c. Action potentials
- d. Hormones

45. The fatty insulator around the axon is called :

- a. Boutons
- b. Spines
- c. Nodes of Ranvier
- d. Myelin

46. The interface between neurons and muscles is called the:

- a. Neuromuscular junction
- b. Dorsal horn
- c. Caudate
- d. Ventral horn

47. A major pathway in the spine is the _____ tract.

- a. Sacral minor
- b. Corticospinal
- c. Spinal major
- d. Cairo junction

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48. Balance and postural adjustment are associated with the:

- a. Occipital lobe
- b. Cerebellum
- c. Caudate
- d. Amygdala

49. Incoming sensory information followed by motor activity depends on:

- a. Sympathetic to parasympathetic pathways
- b. Efferent to afferent pathways
- c. Efferent to neuromuscular pathways
- d. Afferent to efferent pathways

50. The monoamine hypothesis is linked to behaviours in:

- a. Addiction
- b. Depression
- c. Schizophrenia
- d. Personality disorders

51. Which of the following has its action terminated by Monoamine Oxidase?

- a. Enzyme
- b. Movement
- c. Neuron
- d. Peptide

52. What do anti-depressants act as?

- a. GABA antagonist
- b. Serotonin agonist
- c. Glutamate agonist
- d. Hormone regulation

53. What are the active ingredients in medications?

- a. Charged particles
- b. Sodium
- c. Saline
- d. Molecules

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54. Sudden increases in dopamine in the nucleus accumbens are described as:

- a. Addiction
- b. Substance abuse
- c. The 'high'
- d. The 'crash'

55. A type of psychosis is related to excessive use of:

- a. Glutamate
- b. Amphetamines
- c. GABA
- d. Caffeine

56. Haloperidol is used in the treatment of:

- a. Psychosis
- b. Neurosis
- c. Over eating
- d. Amnesia

57. Activity in which of the following pathways is thought to be associated with movement issues in Parkinson's disease?

- a. Mesocortical
- b. Nigrostriatal
- c. Visual
- d. Auditory

58. One positive symptom of schizophrenia is:

- a. Feeling calm
- b. Anhedonia
- c. Delusions
- d. Headaches

59. Psychosis is commonly attributed to:

- a. Decrease in impulse control
- b. Raised hormone levels
- c. Raised heart rate
- d. Increase in dopamine levels

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60. Which of the following is a demyelinating disorder of the central nervous system?

- a. Guillain-Barre syndrome
- b. Multiple sclerosis
- c. Parkinson's
- d. Alzheimer's

END OF QUESTIONS

PAST EXAMINATION