

Units 3&4 Psychology Practice Exam 2023 (Trial 2) – Assessment Guide

Section A

VCAA Key
Knowledge

Question

Answer Guide

Use the following information to answer Questions 1 and 2.
Jacinta wanted to train her fox terrier, Ian, to stop barking at passers-by. She tried to discourage the barking by spraying Ian with a water bottle every time he barked. When that was not effective, she closed the blinds in the front room whenever he barked to take away Ian's view of the outside world.

operant conditioning as a three-phase process (antecedent, behaviour and consequence) involving reinforcement (positive and negative) and punishment (positive and negative)

Question 1

Using the table below, identify which strategies Jacinta chose to use in the scenario to deter Ian's barking at passers-by.

	Being sprayed with water	Taking away the view of the outside world
A.	positive punishment	positive reinforcement
B.	negative punishment	negative reinforcement
C.	positive punishment	negative punishment
D.	positive reinforcement	negative reinforcement

C As Jacinta has 'added' the undesirable consequence of being sprayed with water when Ian barked, this is a form of positive punishment; this was followed by the removal of Ian's access to the outside world (a desired stimulus), which is an example of negative punishment.

operant conditioning as a three-phase process (antecedent, behaviour and consequence) involving reinforcement (positive and negative) and punishment (positive and negative)

Question 2

Ian stops barking each time Jacinta closes the blinds, leading Jacinta to continue using this strategy. What consequence is Jacinta experiencing when she closes the blinds?

- A. negative punishment
- B. negative reinforcement
- C. positive punishment
- D. positive reinforcement

B As Jacinta acted to remove the undesired stimulus of Ian's barking by closing the blinds, Ian negatively reinforced Jacinta's behaviour by providing a pleasing outcome for her in discontinuing the barking behaviour in response to closing the blinds.

the explanatory power of Hans Selye's General Adaptation Syndrome as a biological model of stress, including alarm reaction (shock/counter shock), resistance and exhaustion

Question 3

Despite developing a cold following an intense couple of months, Sally has been managing a business takeover for her boss, working many hours overtime and getting very little sleep in the process. She presents the final takeover pitch to the board which went very well. Which stage of Selye's General Adaptation Syndrome would Sally most likely have been in when presenting her final pitch to the board?

- A. alarm-reaction
- B. shock
- C. resistance
- D. exhaustion

C *As Sally was still able to function effectively, despite her cold, she would have most likely been in the resistance stage. Exhaustion would likely have rendered Sally unable to present, with her physiological resources too depleted to resist the stressor of work at an above-normal level.*

Use the following information to answer Questions 4 – 6.

Jill has a new teacher, Mr Spurling, who is very assertive with his instructions and expectations. One day, Jill notices her best friend, Jack, streaming something on his phone under his desk when Mr Spurling suddenly catches him, confiscates Jack's phone, assigns him an essay on following class rules as homework and shouted at the class, 'You all know what will happen to you should you make a poor choice!'

social-cognitive approaches to learning, as illustrated by observational learning as a process involving attention, retention, reproduction, motivation and reinforcement

Question 4

Following this incident, Jill has decided not to ever take out her phone in class. Which of the following best accounts for the influence that this event has had on Jill's behaviour?

- A. classical approaches to learning
- B. behaviourist approaches to learning
- C. social-cognitive approaches to learning
- D. biological approaches to learning

C *In this scenario, Jack has been the model and Jill has observed his actions and the associated consequences for those actions; this is a form of observational learning that is considered a social-cognitive approach to learning.*

social-cognitive approaches to learning, as illustrated by observational learning as a process involving attention, retention, reproduction, motivation and reinforcement

Question 5

Although Jill was not directly punished, she was able to form a mental representation of the behaviour that got Jack into trouble, and remember not to reproduce that behaviour for fear of Mr Spurling's reaction. This stage is known as

- A. reinforcement.
- B. acquisition.
- C. negative punishment.
- D. retention.

D *As Jill formed a mental representation of Jack using his phone that was stored in memory, this process is known as retention.*

social-cognitive approaches to learning, as illustrated by observational learning as a process involving attention, retention, reproduction, motivation and reinforcement

Question 6

After a semester with Mr Spurling, Jill is tempted to stand up to Mr Spurling and defy his expectations by using her phone. She feels that the class has been bullied after Jack’s significant consequence for using his phone earlier in the semester. Which of the following stages would best describe Jill’s desire to defy Mr Spurling by using her phone?

- A. retention
- B. negative punishment
- C. motivation
- D. attention

C As Jill’s desire to reproduce the same behaviour that Jack displayed appears to be due to her motivation to defy Mr Spurling, C is the best response.

the explanatory power of the Atkinson-Shiffrin multi-store model of memory in the encoding, storage and retrieval of stored information in sensory, short-term and long-term memory stores

Question 7

Kellie is finding it difficult to remember all nineteen items on her mother’s shopping list because as soon as she finished looking at the list, her phone battery died. Which of the following best explains why Kellie is unable to remember all the items on her mother’s shopping list according to the Atkinson-Shiffrin multi-store model of memory?

	Duration	Capacity
A.	the duration of short-term memory was exceeded	the capacity of short-term memory was exceeded
B.	the duration of long-term memory was exceeded	the capacity of short-term memory was exceeded
C.	the duration of short-term memory was exceeded	the capacity of long-term memory was exceeded
D.	the duration of long-term memory was exceeded	the capacity of long-term memory was exceeded

A As it had been five minutes or more since the phone went flat, this exceeds the 18 – 30 seconds duration of short-term memory. Also, as there are 19 items, this exceeds the 7+2 items that short-term memory is capable of holding due to its limited capacity.

changes to a person’s sleep-wake cycle that cause circadian rhythm sleep disorders (Delayed Sleep Phase Syndrome [DSPS], Advanced Sleep Phase Disorder [ASPD] and shift work) and the treatments of circadian rhythm sleep disorders through bright light therapy

Question 8

Laitham has found it difficult since starting Year 12 to fall asleep and has found it even more difficult to wake up in time for school in the morning. Out of the following, what would be the most appropriate intervention to assist Laitham in his challenges regarding his sleep?

- A. bright light therapy
- B. sleeping tablets
- C. cognitive behavioural therapy
- D. drinking three strong coffees as soon as he wakes up

A Laitham may be experiencing delayed sleep phase syndrome (DSPS) and, as a result, the most appropriate treatment would be bright light therapy (BLT).

Use the following information to answer Questions 9 and 10.

Jennifer feels anxious anytime she is alone for long periods; she avoids travelling by herself wherever she can, but she is quite comfortable commuting and walking around in her local area on her own.

the application of a biopsychosocial approach to maintaining mental wellbeing, with reference to protective factors including adequate nutritional intake and hydration and sleep (biological), cognitive behavioural strategies and mindfulness meditation (psychological) and support from family, friends and community that is authentic and energising (social)

Question 9

Identify a possible psychological protective factor that could help Jennifer maintain her mental wellbeing.

- A. adequate nutrition and hydration
- B. mindfulness meditation
- C. social support
- D. adequate sleep

B *B is the only appropriate solution as all other options are either biological or social protective factors.*

the application of a biopsychosocial approach to maintaining mental wellbeing, with reference to protective factors including adequate nutritional intake and hydration and sleep (biological), cognitive behavioural strategies and mindfulness meditation (psychological) and support from family, friends and community that is authentic and energising (social)

Question 10

Which of the following is not a typical source of social support that Jennifer might access to help maintain her mental wellbeing?

- A. family
- B. friends
- C. pets
- D. community

C *Whilst pets may provide some emotional benefit, the other three options are all typical examples of sources of social support.*

Use the following information to answer Questions 11 – 13.

Stephen has been finding life difficult lately and has sought the help of a counselling psychologist to better understand his current levels of mental wellbeing.

He describes a lack of connection within his friendship group and wider work colleagues as well as feeling less successful in comparison to people at his stage of life. He says he often feels emotionally 'numb' and has been cautioned regarding his outbursts, during which he becomes volatile and aggressive towards others whenever he perceives that an insulting or derogatory judgement is made towards him, his friends or his family.

ways of considering mental wellbeing, including levels of functioning; resilience, as the ability to cope with and manage change and uncertainty; and social and emotional wellbeing (SEWB), as a multidimensional and holistic framework for wellbeing that encapsulates all elements of being (body, mind and emotions, family and kinship, community, culture, country, spirituality and ancestors) for Aboriginal and Torres Strait Islander people

Question 11

Using the table below, identify which set of statements would best represent Stephen's current state regarding his social and emotional wellbeing.

	Social wellbeing	Emotional wellbeing
A.	low levels of social wellbeing as Stephen appears disconnected from his support network	low levels of emotional wellbeing as Stephen finds it difficult to express his emotions appropriately
B.	low levels of social wellbeing as Stephen feels less successful in comparison to people at his stage of life	high levels of emotional wellbeing as Stephen finds himself able to experience a wide range of emotions
C.	high levels of social wellbeing as Stephen appears able to communicate his aggression towards others	high levels of emotional wellbeing as Stephen finds himself able to express emotions at appropriate times
D.	high levels of social wellbeing as Stephen appears able to effectively counter any insults made towards him, his friends or his family	low levels of emotional wellbeing as Stephen feels emotionally 'numb'

A *Stephen is best described as experiencing low levels of both social and emotional wellbeing.*

ways of considering mental wellbeing, including levels of functioning; resilience, as the ability to cope with and manage change and uncertainty; and social and emotional wellbeing (SEWB), as a multidimensional and holistic framework for wellbeing that encapsulates all elements of being (body, mind and emotions, family and kinship, community, culture, country, spirituality and ancestors) for Aboriginal and Torres Strait Islander people

Question 12

If Stephen were to speak with a psychologist, which of the following would be least likely to be considered in evaluating his overall state of mental wellbeing?

- A. resilience
- B. GABA dysfunction
- C. social and emotional wellbeing
- D. levels of psychological, social, and occupational functioning

B *Biological contributors such as GABA dysfunction are least likely to influence an evaluation of overall mental wellbeing, but may be considered in assessing someone with a specific phobia.*

ways of considering mental wellbeing, including levels of functioning; resilience, as the ability to cope with and manage change and uncertainty; and social and emotional wellbeing (SEWB), as a multidimensional and holistic framework for wellbeing that encapsulates all elements of being (body, mind and emotions, family and kinship, community, culture, country, spirituality and ancestors) for Aboriginal and Torres Strait Islander people

Question 13

Which of the following would the psychologist be most likely to consider an appropriate strategy for Stephen to improve his levels of functioning?

- A. complete a literature review on self-help academic articles to be more informed about mental wellbeing
- B. set achievable goals relating to the completion of daily tasks and take steps towards achieving them progressively
- C. maintain a pessimistic mindset when encountering challenges or difficulties
- D. engage in authentic conversations with friends and family to assist in recognising any of Stephen's flaws

B *Levels of functioning can be improved by setting clear and achievable goals and taking steps towards achieving them.*

the role of neurotransmitters in the transmission of neural information across a neural synapse to produce excitatory effects (as with glutamate) or inhibitory effects (as with gamma-aminobutyric acid [GABA]) as compared to neuromodulators (such as dopamine and serotonin) that have a range of effects on brain activity

Question 14

Which of the following could be described as “protein molecules on the dendrites of neurons that receive and process neurochemicals”?

- A. receptor sites
- B. axon terminals
- C. action potentials
- D. neurotransmitters

A *Receptor sites receive and process neurochemicals known as neurotransmitters.*

evidence-based interventions and their use for specific phobia, with reference to the use of short-acting anti-anxiety benzodiazepine agents (GABA agonists) in the management of phobic anxiety and breathing retraining (biological); the use of cognitive behavioural therapy (CBT) and systematic desensitisation as psychotherapeutic treatments of phobia (psychological); and psychoeducation for families/supporters with reference to challenging unrealistic or anxious thoughts and not encouraging avoidance behaviours (social)

Question 15

Which of the following statements best describes psychotherapeutic treatments?

- A. a biological intervention that addresses dysfunctional emotions, thoughts and behaviours through therapeutic communication
- B. a type of medication that depresses central nervous system activity and is considered a short-acting anti-anxiety medication.
- C. a psychological intervention that addresses dysfunctional emotions, thoughts and behaviours through therapeutic communication
- D. a breathing control technique that can be used to reduce overall physiological arousal

C *The only appropriate response here is C as all other descriptions relate to biological interventions.*

Use the following information to answer Questions 16 – 18.

Jonathan and Jenna lead busy lives raising their three young boys – Leo (14), Archie (4) and Marshall (18 months). They often find it difficult to manage the sleeping patterns and daytime naps of the children as each age poses different challenges for the overall amount of sleep that each child requires as well as considering the proportion of REM sleep compared to NREM sleep that each child needs.

differences in, and explanations for, the demands for sleep across the life span, with reference to total amount of sleep and changes in a typical pattern of sleep (proportion of REM and NREM)

Question 16

Which proportion of REM sleep compared to NREM sleep would Marshall (18 months) typically experience in a 24-hour period?

	REM sleep	NREM sleep
A.	15%	85%
B.	35%	65%
C.	55%	45%
D.	75%	25%

B *Between the ages of 3-24 months, Marshall will likely experience approximately 35% REM sleep and 65% NREM sleep in a typical 24-hour period.*

differences in, and explanations for, the demands for sleep across the life span, with reference to total amount of sleep and changes in a typical pattern of sleep (proportion of REM and NREM)

Question 17

What amount of time spent asleep would be considered typical for Archie (4 years old) to sleep in a 24-hour period?

- A. 11 hours
- B. 9 hours
- C. 7 hours
- D. 5 hours

A As Archie is four years old, a typical 24-hour period requires approximately 10-13 hours.

differences in, and explanations for, the demands for sleep across the life span, with reference to total amount of sleep and changes in a typical pattern of sleep (proportion of REM and NREM)

Question 18

Which of the following factors is not something that typically would negatively impact Leo's sleep pattern as an adolescent?

- A. a delay in the release of melatonin
- B. social commitments
- C. early wake times for school
- D. shift work

D Adolescents are likely to encounter all options listed except shift work. That being said, shift work can negatively impact an individual's sleep pattern.

the effects of partial sleep deprivation (inadequate sleep either in quantity or quality) on a person's affective, behavioural and cognitive functioning, and the affective and cognitive effects of one night of full sleep deprivation as a comparison to blood alcohol concentration readings of 0.05 and 0.10

Question 19

When comparing blood alcohol concentration (BAC) to sleep deprivation, which of the following is the most accurate?

	17 hours of wakefulness being equivalent to the cognitive deficits of a BAC of:	24 hours of wakefulness being equivalent to the cognitive deficits of a BAC of:
A.	0.05%	0.10%
B.	0.5%	0.010%
C.	0.10%	0.15%
D.	0.05%	0.010%

A Option A is correct as 17 hours awake has been shown to elicit the cognitive deficits found with a BAC of 0.05% and 24 hours awake has been shown to elicit the cognitive deficits found with a BAC of 0.10%.

Use the following information to answer Questions 20 – 22.
Roberta is finding it interesting to learn about memory in VCE Psychology, particularly how many memories from when she was very little have faded over time.

synaptic plasticity – resulting from long-term potentiation and long-term depression, which together act to modify connections between neurons (sprouting, rerouting and pruning) – as the fundamental mechanism of memory formation that leads to learning

Question 20

One explanation for Roberta's inability to retrieve memories that she had stored previously is due to

- A. long-term potentiation.
- B. rerouting.
- C. sprouting.
- D. pruning.

D Roberta's inability to retrieve previously stored memories could be due to the pruning of synaptic connections that are not regularly coactivated.

synaptic plasticity – resulting from long-term potentiation and long-term depression, which together act to modify connections between neurons (sprouting, rerouting and pruning) – as the fundamental mechanism of memory formation that leads to learning

Question 21

Which of the following is not considered a structural change of the neural synapse when Roberta learns a new concept during a lesson?

- A. increased number of receptor sites on the post-synaptic neuron
- B. decreased speed of neural transmission between the pre-synaptic and post-synaptic neuron
- C. bushier dendrites on the post-synaptic neuron
- D. increased number of synaptic connections between neurons

B *The structural changes described in options A, C and D will likely lead to an increased speed of neural transmission.*

synaptic plasticity – resulting from long-term potentiation and long-term depression, which together act to modify connections between neurons (sprouting, rerouting and pruning) – as the fundamental mechanism of memory formation that leads to learning

Question 22

Roberta has now identified that certain types of neurotransmitters can have an excitatory effect on post-synaptic neurons and play an important role in learning. The main excitatory neurotransmitter in the human nervous system is

- A. GABA.
- B. glutamate.
- C. dopamine.
- D. serotonin.

B *Glutamate is the main excitatory neurotransmitter in the human nervous system and can contribute to the excitation of post-synaptic neurons firing an action potential, as well as long-term potentiation.*

approaches to learning that situate the learner within a system, as illustrated by Aboriginal and Torres Strait Islander ways of knowing where learning is viewed as being embedded in relationships where the learner is part of a multimodal system of knowledge patterned on Country

Question 23

In understanding Aboriginal and Torres Strait Islander knowledge systems, it is important to remember that

- A. Songlines are the only means of knowledge transmission.
- B. knowledge is often separate from Country.
- C. ways of knowing are diverse across language and cultural groups.
- D. the individual is a learner in isolation.

C *Aboriginal and Torres Strait Islander peoples' ways of knowing are diverse across language and cultural groups.*

approaches to learning that situate the learner within a system, as illustrated by Aboriginal and Torres Strait Islander ways of knowing where learning is viewed as being embedded in relationships where the learner is part of a multimodal system of knowledge patterned on Country

Question 24

Aboriginal and Torres Strait Islander knowledge systems cannot be considered

- A. the oldest and longest continuing form of learning in Australia.
- B. complex and sophisticated.
- C. multimodal.
- D. the same as Western concepts of learning.

D *Aboriginal and Torres Strait Islander knowledge systems represent the oldest and longest continuing forms of learning in Australia which are unique, complex and sophisticated systems that are different to Western concepts of learning.*

the roles of different subdivisions of the central and peripheral nervous systems in responding to, and processing and coordinating with, sensory stimuli received by the body to enable conscious and unconscious responses, including spinal reflexes

Question 25

Frida has just finished work for the day and has settled in for an afternoon of binge-watching her favourite streaming service. When considering the physiological responses of the autonomic nervous system, which division would dominate during Frida's period of rest?

- A. the sympathetic nervous system
- B. the somatic nervous system
- C. the parasympathetic nervous system
- D. the fight-flight-freeze response

C *The parasympathetic nervous system is dominant during periods of rest and inactivity.*

the gut-brain axis (GBA) as an area of emerging research, with reference to the interaction of gut microbiota with stress and the nervous system in the control of psychological processes and behaviour

Question 26

The vagus nerve connects the

- A. sympathetic nervous system and parasympathetic nervous system.
- B. somatic nervous system and spinal cord.
- C. somatic nervous system and enteric nervous system.
- D. enteric nervous system and central nervous system.

D *Communication between the enteric nervous system and the central nervous system occurs specifically via the vagus nerve.*

the gut-brain axis (GBA) as an area of emerging research, with reference to the interaction of gut microbiota with stress and the nervous system in the control of psychological processes and behaviour

Question 27

Identify the approximate percentage of signals sent from the gut to the brain and vice-versa.

	Gut to brain	Brain to gut
A.	50%	50%
B.	10-20%	80-90%
C.	80-90%	10-20%
D.	60-70%	30-40%

C *Breit et al. (2018) suggest that 80 – 90% of nerve fibres are responsible for communicating from the gut to the brain.*

Use the following information to answer Questions 28 – 30.

Angie has four university assignments due over the next 72 hours for subjects that she has never studied before and she is feeling stressed. Each assignment requires a significant amount of planning and is going to require Angie to work very hard over the next few days.

use of strategies (approach and avoidance) for coping with stress and improving mental wellbeing, including context-specific effectiveness and coping flexibility

Question 28

How will using strategies that have high levels of context-specific effectiveness likely affect Angie's mental wellbeing?

- A. they are not likely to affect Angie's mental wellbeing
- B. they are likely to positively affect Angie's mental wellbeing
- C. they are likely to negatively affect Angie's mental wellbeing
- D. they will determine Angie's mental wellbeing

B *Utilising strategies that have high levels of context-specific effectiveness is most likely to improve Angie's mental wellbeing, as these strategies are most likely to reduce the severity of the stressor.*

use of strategies (approach and avoidance) for coping with stress and improving mental wellbeing, including context-specific effectiveness and coping flexibility

Question 29

Angie works hard on her assignments by drafting her responses and completing extra research on the assignment topics. She also reaches out to her tutors and lecturers for help. This is best described by which of the following coping strategies?

- A. avoidance
- B. approach
- C. evaluation
- D. denial

B As Angie is adopting a strategy that directly addresses and diminishes the significance of the stressor, this is an example of an approach strategy.

use of strategies (approach and avoidance) for coping with stress and improving mental wellbeing, including context-specific effectiveness and coping flexibility

Question 30

After two days of studying hard and continuously reaching out to her tutors and lecturers without any response, Angie recognises that the strategies she has used for the past 48 hours are not working. She then chooses to text her friend, who comes around straight away, and they work on their assignments together. This shift in strategy to address the stressor of the assessment deadlines demonstrates Angie's

- A. coping flexibility.
- B. context-specific ineffectiveness.
- C. avoidance.
- D. tolerance.

A Angie has identified that initial strategies to overcome the stressor of her assessment deadlines were ineffective and has adjusted her strategies.

the role of episodic and semantic memory in retrieving autobiographical events and in constructing possible imagined futures, including evidence from brain imaging and post-mortem studies of brain lesions in people with Alzheimer's disease and aphantasia as an example of individual differences in the experience of mental imagery

Question 31

Which type of memory would a person with aphantasia most struggle to vividly recall?

- A. classically conditioned memories
- B. procedural memories
- C. semantic memories
- D. episodic memories

D As much of the detail of episodic memories rely on the visual imagery of autobiographical events (which cannot be easily generated by aphantasics), the most appropriate option is D.

Use the following information to answer Questions 32 – 34.

Professor Smyth has developed a medical treatment for individuals with low levels of gamma-amino butyric acid (GABA). This treatment could potentially help to support optimal nervous system functioning. In developing this treatment, she conducted hundreds of trials on men who had recently become fathers and had a large volume of survey responses to evaluate and consider along with the biological markers delivered during the clinical trials.

the role of neurotransmitters in the transmission of neural information across a neural synapse to produce excitatory effects (as with glutamate) or inhibitory effects (as with gamma-aminobutyric acid [GABA]) as compared to neuromodulators (such as dopamine and serotonin) that have a range of effects on brain activity

Question 32

Which of the following best describes the function of GABA in the human nervous system?

- A. excitatory
- B. inhibitory
- C. inflammatory
- D. neuromodulatory

B *GABA is an inhibitory neurotransmitter that 'fine-tunes' neural functioning to an optimal level by inhibiting and reducing the likelihood of post-synaptic neurons from firing.*

systematically generate and record primary data, and collate secondary data, appropriate to the investigation

Question 33

Professor Smyth's survey contains a series of questions where respondents rank their nervous system functioning on a Likert scale from 1 to 5 (with '1' representing a low level of arousal and '5' indicating a heightened level of arousal). Which of the following statements would best describe these scores?

- A. primary data, as this was collected by Professor Smyth from participants
- B. primary data, as the scores were quantitative
- C. secondary data, as this was collected by Professor Smyth from participants
- D. secondary data, as the scores were qualitative

A *The scores are considered primary data, as this involves the first-hand collection of data, rather than taken from an earlier study or source.*

evaluate investigation methods and possible sources of error or uncertainty and suggest improvements to increase validity and to reduce uncertainty

Question 34

Professor Smyth realised that her sample included 'new' fathers who had children previously, despite her best efforts to sample only men who were recent fathers for the first time. Which procedure could Professor Smyth employ to enhance the accuracy of her sampling technique?

- A. providing an informed consent statement before the commencement of the study with the use of suitability criteria for potential participants
- B. withdrawal rights which exclude participants who do not meet the suitability criteria
- C. debriefing procedures before the commencement of the study with the use of suitability criteria for potential participants
- D. voluntary participation which is explained at the conclusion of the study with the use of suitability criteria for potential participants

A *An informed consent statement may help to preclude candidates who are not considered to be reflective of the target population before the study commenced.*

determine appropriate investigation methodology; case study; classification and identification; controlled experiment (within subjects, between subjects, mixed design); correlational study; fieldwork; literature review; modelling; product, process or system development; simulation

Question 35

Which of the following would be considered an advantage of a case study?

- A. findings from case studies tend to have high levels of external validity
- B. case studies may provide insight into associated psychological phenomena being investigated
- C. case studies can allow researchers to draw cause-and-effect conclusions
- D. case studies may be influenced by the preconceptions of researchers

B Case studies can provide insight and new knowledge about associated fields of research, which is an advantage of this investigation methodology.

Use the following information to answer Questions 36 – 38.
Professor Allen, a Psychology lecturer at Yeoville University, wants to investigate the effect of weather patterns on the academic performance of students between the ages of 13 and 17, over a series of decades in different states and territories of Australia.

design and conduct investigations; select and use methods appropriate to the investigation, including consideration of sampling technique (random and stratified) and size to achieve representativeness, and consideration of equipment and procedures, taking into account potential sources of error and uncertainty; determine the type and amount of qualitative and/or quantitative data to be generated or collated

Question 36

If Professor Allen wanted to ensure that all year levels from Years 7 to 12 were included in her sample in the same ratios as found in the population, which sampling technique would she use?

- A. biased sampling
- B. random sampling
- C. stratified sampling
- D. population sampling

C Year levels would indicate groups or 'strata' of the target population of research interest (teenage students); as such, stratified sampling is the only correct option.

identify independent, dependent and controlled variables in controlled experiments

Question 37

Which of the following could be a controlled variable for Professor Allen's investigation?

- A. weather patterns
- B. academic success
- C. age of participants
- D. academic testing procedures

D Testing procedures would need to be the same for all participants to provide a relatively stable representation of 'academic success' across the different regions and weather patterns across Australia.

demonstrate ethical conduct and apply ethical guidelines when undertaking and reporting investigations

Question 38

In what way could Professor Allen uphold the ethical concept of non-maleficence?

- A. ensuring that no harm comes to the participants as a result of the investigation
- B. ensuring that no harm comes to the participants after the investigation
- C. ensuring that any harm is disproportionate to the benefits of the investigation
- D. ensuring that there is a fair consideration of competing claims

A *Non-maleficence involves avoiding the causations of harm as far as possible.*

the explanatory power of Richard Lazarus and Susan Folkman's Transactional Model of Stress and Coping to explain stress as a psychological process (primary and secondary appraisal only)

Question 39

After being involved unexpectedly in a serious car accident, in the first minutes following the crash, Peter is trying to establish if anyone is injured and make sense of what has just occurred.

His mind then transitions to thinking about how much it will cost to repair his car and, if it were to be written off (i.e. too costly to be worthwhile repairing), how he would get to work if he was not able to afford to replace it. He knows that he does not have much money saved and this could result in him losing his job in the future.

Which of the following sequences would most likely apply to Peter's appraisal of the car accident using Lazarus and Folkman's Transactional Model of Stress and Coping?

	Primary appraisal		Secondary appraisal	
A.	benign	challenge	adequate resources	stress
B.	stressful	harm/loss	adequate resources	little/no stress
C.	stressful	threat	inadequate resources	stress
D.	benign	harm/loss	inadequate resources	little/no stress

C *As Peter is identifying the situation as a threat or harm/loss, the scenario specifically identifies that the secondary appraisal of his resources (savings) and not having enough money to replace the car will negatively affect his ability to cope and lead to the experience of stress.*

the explanatory power of Richard Lazarus and Susan Folkman's Transactional Model of Stress and Coping to explain stress as a psychological process (primary and secondary appraisal only)

Question 40

The explanatory power of Lazarus and Folkman's Transactional Model of Stress and Coping

- A. is limited to biological processes only.
- B. is limited to psychological processes only.
- C. is limited to social processes only.
- D. combines biological, psychological and social processes.

B *The Transactional Model of Stress and Coping only explains stress as a psychological process.*

Section B

VCAA Key Knowledge

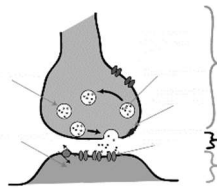
Question

Answer Guide

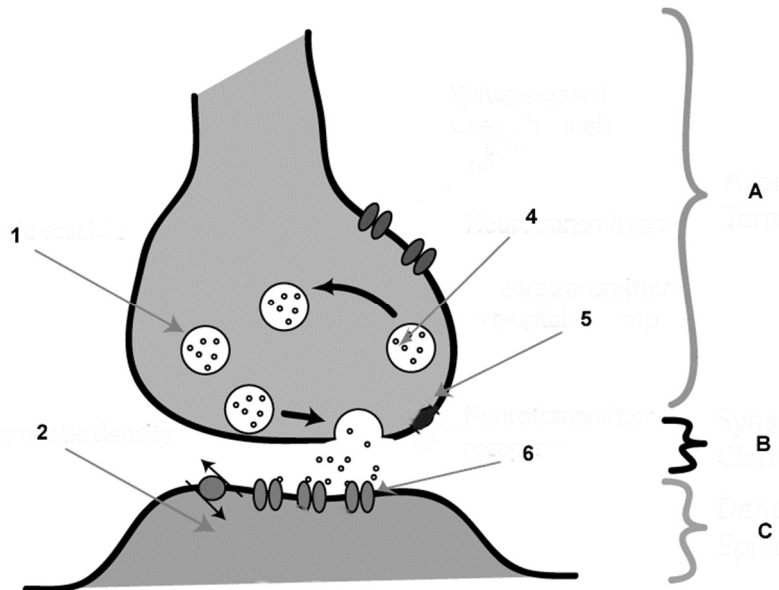
the role of neurotransmitters in the transmission of neural information across a neural synapse to produce excitatory effects (as with glutamate) or inhibitory effects (as with gamma-amino butyric acid [GABA]) as compared to neuromodulators (such as dopamine and serotonin) that have a range of effects on brain activity

Question 1a (7 marks)
Using additional arrows where necessary, label the following components of the neural synapse on the diagram:

- pre-synaptic neuron
- post-synaptic neuron
- synaptic vesicle;
- dendrite
- axon terminal;
- receptor sites
- neurotransmitters.



Answer:



Source: https://upload.wikimedia.org/wikipedia/commons/a/ae/Nervous_system_-_Synapse_2_-_Smart-Servier.png

- Pre-synaptic neuron = A
- Post-synaptic neuron = C
- Synaptic vesicle = 1 or 4
- Dendrite = 2
- Axon terminal = 5
- Receptor sites = 6
- Neurotransmitters = 4 or an arrow pointing to the small circles

Marking Protocol:

One mark for each of the above points.

the role of neurotransmitters in the transmission of neural information across a neural synapse to produce excitatory effects (as with glutamate) or inhibitory effects (as with gamma-amino butyric acid [GABA]) as compared to neuromodulators (such as dopamine and serotonin) that have a range of effects on brain activity

Question 1b (1 mark)
Which neuromodulator is highly prevalent in the gut?

Answer:

- Serotonin (with around 90% of serotonin found in the gut).

Marking Protocol:

One mark for the above point.

As a child, Dianne had a large group of moths swarm all over her near her front door, flying into her ears, hair and mouth, making her extremely distressed. She developed a specific phobia of moths as a result of this experience. Dianne’s psychiatrist is trying to assist her in managing the symptoms of her specific phobia with a range of strategies.

evidence-based interventions and their use for specific phobia, with reference to the use of short-acting anti-anxiety benzodiazepine agents (GABA agonists) in the management of phobic anxiety and breathing retraining (biological)

Question 2a (6 marks)

Name and explain two evidence-based biological interventions that the psychiatrist could use to assist Dianne with her phobia of moths.

Name of intervention:

Explanation:

Name of intervention:

Explanation:

Answer:

- *Short-acting anti-anxiety benzodiazepine agents (GABA agonists).*
- *These are medications that work by enhancing the inhibitory effect of GABA (which occurs by binding to GABA receptors on post-synaptic neurons).*
- *As a result, benzodiazepines can reduce physiological arousal, which may help Dianne to feel less anxious when in situations where she may encounter moths.*
- *Breathing retraining.*
- *Breathing retraining involves techniques that may involve correcting ‘abnormal’ breathing patterns / establishing slow and deep inhalations followed by slow and controlled exhalations.*
- *This could assist Dianne by helping to minimise the sympathetic nervous system/fight-flight-freeze response that is associated with Dianne’s fear response of the phobic stimulus of moths; this is because slow and controlled breathing is incompatible with the activation of the sympathetic nervous system/fight-flight-freeze response.*

Marking Protocol:

One mark for each of the above points.

analyse and evaluate psychological issues using relevant ethical concepts and guidelines, including the influence of social, economic, legal and political factors relevant to the selected issue

Question 2b (2 marks)

The psychiatrist also encourages Dianne to take part in a study investigating the effect of a new drug on her phobic symptoms. Describe how the researcher could uphold the ethical concepts of beneficence and justice.

Answer:

- *Beneficence - the researcher should carefully weigh up the risks and benefits of Dianne’s (and other participants’) involvement, to ensure that any risks are minimised (e.g. negative side effects from the new drug) and any benefits are maximised (e.g. scientific progress in developing new drug treatments for phobia).*
- *Justice – the researcher must ensure that there is fair consideration of competing claims, that there is no unfair burden on a particular group from an action (e.g. if Dianne were to take a placebo/sugar pill as part of the control group), and that there is fair distribution and access to the benefits of an action (e.g. that Dianne would receive access to the effective treatment if she were to be part of a control group).*

Marking Protocol:

One mark for each of the above points.

Olaf has held a management position with a multi-national financial organisation for the past two years and is constantly under pressure to reach monthly targets for investors and the board of management. His boss is very demanding and does little to praise or acknowledge Olaf's best efforts despite the consistently long hours that he spends in the office each week.

In his personal life, Olaf is finding himself struggling to feel generally positive. He constantly worries that his efforts to spend time with his large family are not enough to keep everyone happy; he repeatedly replays recent negative conversations that he has had with his mother about prioritising his family above his work; he also is aware of his heart rate increasing significantly whenever he thinks about the end of month targets that he has not already met.

internal and external stressors causing psychological and physiological stress responses, including the flight-or-fight-or-freeze response in acute stress and the role of cortisol in chronic stress

Question 3a (4 marks)

Distinguish stress from stressors, and identify one internal stressor and one external stressor that Olaf is experiencing.

Answer:

- *Stress refers to a physiological and psychological response to circumstances/events/stimuli that are perceived to challenge or be beyond a person's ability to cope, whereas...*
- *...stressors are circumstances/events/stimuli that cause stress.*
- *An internal stressor could include Olaf struggling to feel positive about his life / Olaf feeling worried that his efforts are not enough for his loved ones / Olaf's heart rate increasing more than normal.*
- *An external stressor could include Olaf's high-pressure work environment / Olaf's demanding boss / his long hours in the office / negative conversations with his family / end of month targets.*

Marking Protocol:

One mark for each of the above points.

internal and external stressors causing psychological and physiological stress responses, including the flight-or-fight-or-freeze response in acute stress and the role of cortisol in chronic stress

Question 3b (4 marks)

Compare chronic stress with acute stress and provide one example from Olaf's case that represent each.

Answer:

- *Chronic stress is identified as a form of stress that is prolonged, whereas...*
- *...acute stress is a form of stress with intense physiological and psychological symptoms that are briefly experienced.*
- *As Olaf was "constantly under pressure" for over two years, it is likely that he is experiencing chronic stress. / The negative interactions that Olaf has with his boss/family appear to be ongoing and could be considered a chronic stressor.*
- *Also, Olaf is experiencing intense physiological stress with his heart rate increasing when he thinks about the monthly targets that he is yet to meet, which could be considered an acute stress response.*

Marking Protocol:

One mark for each of the above points.

internal and external stressors causing psychological and physiological stress responses, including the flight-or-fight-or-freeze response in acute stress and the role of cortisol in chronic stress

Question 3c (3 marks)

Name a key hormone involved in chronic stress, and explain its role in assisting Olaf to adapt to the stressors that he is facing, as well as one disadvantage associated with heightened levels of this hormone over a prolonged period.

Answer:

- *Cortisol.*
- *Cortisol supports the body in initiating and maintaining increased arousal and energises Olaf to deal with the multitude of stressors that he is facing over a longer period.*
- *The most significant disadvantage of high levels of cortisol in the bloodstream is immune suppression, which makes Olaf less capable of fighting bacteria or diseases.*

Marking Protocol:

One mark for each of the above points.

Rebecca has recently started a university degree. During orientation week, she met new friends Hannah and Karthika while queuing up at a campus café. Rebecca loves the freedom of her timetable and enjoys riding her bike to uni. A few weeks into her first semester, she gets an automatic feeling of excitement when she passes by the lecture hall for her favourite subject.

the roles of the hippocampus, amygdala, neocortex, basal ganglia and cerebellum in long-term implicit and explicit memories

Question 4 (6 marks)

Provide an example of three different memories from the scenario that were encoded by Rebecca's hippocampus, basal ganglia and cerebellum, and name the type of long-term memory that was formed.

An example of a memory encoded by the hippocampus:
The type of long-term memory encoded:

An example of a memory encoded by the basal ganglia:
The type of long-term memory encoded:

An example of a memory encoded by the cerebellum:
The type of long-term memory encoded:

Answer:

An example of a memory encoded by the hippocampus:

- *The memory of meeting Hannah and Karthika at a campus café.*

The type of long-term memory encoded:

- *Explicit / episodic / autobiographical memory.*

An example of a memory encoded by the basal ganglia:

- *Knowing how to ride a bike.*

The type of long-term memory encoded:

- *Implicit / procedural memory.*

An example of a memory encoded by the cerebellum:

- *Feeling excited when she passes by the lecture hall for her favourite subject.*

The type of long-term memory encoded:

- *Implicit / classically conditioned memory.*

Marking Protocol:

One mark for each of the above points. Note: any reasonable explicit memory identified for the hippocampus, any reasonable procedural/habit/reward-motivated behaviour memory for the basal ganglia, and any reasonable procedural or classically conditioned memory for the cerebellum should be awarded marks.

Paola is a 52-year-old woman who has had some issues lately surrounding her sleep. She finds that, no matter how much she tries, it takes her a long time to feel sleepy and, even when she does fall asleep, she still wakes up feeling tired and unsatisfied.

In speaking with her sleep psychologist, she has been encouraged to consider her routine and habits throughout the day and her behaviours before going to bed. She has identified some changes that she could make to her lifestyle and accepted the suggestions of her psychologist for interventions that could support her to improve her sleep experience more consistently.

differences in, and explanations for, the demands for sleep across the life span, with reference to total amount of sleep and changes in a typical pattern of sleep (proportion of REM and NREM)

Question 5a (2 marks)

Identify the expected duration of sleep each night for someone of Paola's age and the approximate proportion of REM and NREM sleep that she should be expected to have.

Answer:

- Paola should be having seven to eight hours of sleep per night for someone her age.
- Paola's sleep is likely to be made up of approximately 20% REM and 80% NREM sleep.

Marking Protocol:

One mark for each of the above points.

regulation of sleep-wake patterns by internal biological mechanisms, with reference to circadian rhythm, ultradian rhythms of REM and NREM Stages 1–3, the suprachiasmatic nucleus and melatonin

Question 5b (4 marks)

Differentiate circadian rhythms from ultradian rhythms, and provide one example of each that Paola's sleep psychologist may use.

Answer:

- A circadian rhythm is a cycle of physiological/behavioural activity that repeats approximately every 24 hours.
- An example is Paola's sleep-wake cycle.
- On the other hand, an ultradian rhythm involves physiological and behavioural changes that take place within cycles lasting less than 24 hours.
- An example could include the cycles of sleep (NREM stages 1 – 3 and REM sleep) which are repeated several times throughout each 24-hour period.

Marking Protocol:

One mark for each of the above points. Note: any other valid example of an ultradian rhythm (e.g. breathing, blinking, heartbeat) should be awarded a mark.

sleep as a psychological construct that is broadly categorised as a naturally occurring altered state of consciousness and is further categorised into REM and NREM sleep, and the measurement of physiological responses associated with sleep, through electroencephalography (EEG), electromyography (EMG), electro-oculography (EOG), sleep diaries and video monitoring

Question 5c (6 marks)

Paola's psychologist suggests that she undertakes monitoring in a laboratory. Using the table provided, outline the function of each device, and explain how it could indicate that Paola is in an altered state of consciousness.

Answer:

Device	Function of the device	How it may indicate that Paola is in an altered state of consciousness
EEG	<ul style="list-style-type: none"> • Detects, amplifies and records the electrical activity of the brain in the form of brainwaves. 	<ul style="list-style-type: none"> • If the EEG shows lower frequency and higher amplitude brainwaves than normal, this may be an indicator that Paola is asleep, which is an altered state of consciousness.
EOG	<ul style="list-style-type: none"> • Detects, amplifies and records electrical activity of the muscles that move the eyes. 	<ul style="list-style-type: none"> • If the EOG shows higher-than-normal levels of activity of the muscles that move the eyes, this may be an indicator that Paola is experiencing REM sleep, which is an altered state of consciousness.
EMG	<ul style="list-style-type: none"> • Detects, amplifies and records the electrical activity of the body's muscles. 	<ul style="list-style-type: none"> • If the EMG shows lower-than-normal levels of activity of the body's muscles, this may be an indicator that Paola is asleep, which is an altered state of consciousness.

Marking Protocol:

One mark for each of the above points within the table.

improving sleep hygiene and adaptation to zeitgebers to improve sleep-wake patterns and mental wellbeing, with reference to daylight and blue light, temperature, and eating and drinking patterns

Question 5d (4 marks)

Explain how a zeitgeber can increase and decrease Paola's drowsiness, with reference to key brain areas and a sleep hormone.

Answer:

- Zeitgebers are an environmental/external cue that signals time, such as light/dark signals.
- When light is detected (by the retina), the suprachiasmatic nucleus (SCN) sends inhibitory messages to the pineal gland, whereas when no light is detected, the SCN sends excitatory neural messages to the pineal gland.
- When the pineal gland receives excitatory neural messages from the SCN, it produces and releases melatonin which induces/increases drowsiness.
- Conversely, when the pineal gland receives inhibitory neural messages from the SCN, it reduces the production and release of melatonin which reduces drowsiness (and increases alertness).

Marking Protocol:

One mark for each of the above points.

regulation of sleep-wake patterns by internal biological mechanisms, with reference to circadian rhythm, ultradian rhythms of REM and NREM Stages 1–3, the suprachiasmatic nucleus and melatonin

the use of mnemonics (acronyms, acrostics and the method of loci) by written cultures to increase the encoding, storage and retrieval of information as compared with the use of mnemonics such as sung narrative used by oral cultures, including Aboriginal peoples' use of Songlines

Question 6 (3 marks)

Describe three characteristics of Songlines that distinguish them from acrostics.

Answer:

- *Songlines are integral to the culture of Aboriginal peoples, whereas acrostics are not.*
- *Songlines have a narrative structure linked to Country, whereas acrostics may involve a random selection of information or unlinked information.*
- *Songlines may be sung, whereas acrostics are typically not.*
- *Songlines are deeply tied to the land/embedded in Country, whereas acrostics are not.*
- *Songlines use a greater layering of knowledge, whereas acrostics have less depth.*
- *Songlines are created by and shared with communities, whereas acrostics are generally created by individuals.*
- *Songlines cover vast amounts of complex information and, therefore, tend to cover more breadth than acrostics.*
- *Songlines are used to transmit knowledge over generations and time, whereas acrostics are used to remember information for a specific use or occasion.*
- *Songlines have been used for thousands of years by Aboriginal peoples, whereas acrostics are a relatively recent practice.*
- *Songlines can help to provide a sense of identity and belonging to Aboriginal peoples, whereas acrostics do not.*
- *Songlines may consist of navigational routes holding information about significant landscape features and other cultural information, whereas acrostics typically do not.*
- *Songlines may incorporate stories, songs, dances or ceremonies associated with each location, whereas acrostics do not.*
- *The version of knowledge transmitted through songlines may differ depending on the audience, whereas this is not the case with acrostics.*
- *Songlines may be a demonstration of the learner being part of a multimodal system of knowledge patterned on Country, whereas acrostics do not represent this same complexity.*

Marking Protocol:

One mark for each of the above points, to a maximum of three. Note: any other culturally appropriate response should be awarded marks.

cultural determinants, including cultural continuity and self-determination, as integral for the maintenance of wellbeing in Aboriginal and Torres Strait Islander peoples

Question 7 (6 marks)

Since the First Fleet in 1788, there has been widespread disruption and destruction of cultural practices for Aboriginal and Torres Strait Islander peoples.

Name and define two cultural determinants that are integral for the maintenance of wellbeing for Aboriginal and Torres Strait Islander peoples, and describe how these are impacted by colonisation.

Answer:

- *Cultural continuity.*
- *Cultural continuity refers to the uninterrupted and ongoing transmission of traditional cultural practices, knowledge, beliefs, languages, and ways of life from one generation to the next.*
- *Cultural continuity is greatly disrupted by colonisation, as many traditions, rituals and ceremonies were unable to be maintained due to the Stolen Generation, punishments for engaging in cultural practices and languages, and ongoing attempts to 'assimilate' Aboriginal and Torres Strait Islander peoples into the cultural customs of the white settlers.*
- *Self-determination.*
- *Self-determination refers to the ability for Aboriginal and Torres Strait Islander peoples to freely decide and govern their own political, social, cultural and economic needs and rights.*
- *Colonisation has degraded the self-determination of Aboriginal and Torres Strait Islander peoples; for example, the disruption to cultural practices means that Aboriginal and Torres Strait Islander peoples were unable to freely maintain their social and cultural needs and rights.*

Marking Protocol:

One mark for each of the above points. Note: any other culturally appropriate response should be awarded marks.

One Saturday night when Xavier was working at his local supermarket, there was a very aggressive customer who was threatening and yelling at staff after not being able to find his preferred brand of toilet paper. Xavier immediately called security who successfully removed the man from the store.

A few weeks later, Xavier's manager decided to install a shoplifter alarm to improve security at the store. Unfortunately, each time more than a group of five customers entered or exited the store at the same time, a loud alarm went off, which would startle Xavier. After this happened across several shifts, Xavier noticed his heart rate increase each time he saw a large group of customers walk through the door, even if the alarm did not go off.

behaviourist approaches to learning, as illustrated by classical conditioning as a three-phase process (before conditioning, during conditioning and after conditioning) that results in the involuntary association between a neutral stimulus and unconditioned stimulus to produce a conditioned response, and operant conditioning as a three-phase process (antecedent, behaviour and consequence) involving reinforcement (positive and negative) and punishment (positive and negative)

Question 8a (6 marks)

Use a three-phase process of learning to explain why Xavier's heart rate increases each time he sees a large group of customers walk through the door.

Answer:

- *Before conditioning, large groups of customers walking through the door was a neutral stimulus (NS) that led to no predictable response from Xavier.*
- *During conditioning, repeated associations of the NS (large groups of customers walking through the door) and...*
- *...the loud alarm which was an unconditioned stimulus elicited...*
- *...an unconditioned response of an increased heart rate.*
- *After conditioning, large groups of customers walking through the door (without the alarm/UCS) became a conditioned stimulus...*
- *...that led to a conditioned response of an increased heart rate.*

Marking Protocol:

One mark for each of the above points.

behaviourist approaches to learning, as illustrated by classical conditioning as a three-phase process (before conditioning, during conditioning and after conditioning) that results in the involuntary association between a neutral stimulus and unconditioned stimulus to produce a conditioned response, and operant conditioning as a three-phase process (antecedent, behaviour and consequence) involving reinforcement (positive and negative) and punishment (positive and negative)

Question 8b (4 marks)

Use a three-phase process of learning to explain why Xavier is more likely to call security the next time there is an aggressive customer.

Answer:

- *Antecedent: An aggressive customer enters the supermarket.*
- *Behaviour: Xavier calls security to remove the aggressive customer.*
- *Consequence: Security removes the aggressive customer.*
- *Because Xavier is negatively reinforced for calling security (by having an unpleasant customer removed), this will increase the likelihood that he will act in the same way the next time there is an aggressive customer.*

Marking Protocol:

One mark for each of the above points.

behaviourist approaches to learning, as illustrated by classical conditioning as a three-phase process (before conditioning, during conditioning and after conditioning) that results in the involuntary association between a neutral stimulus and unconditioned stimulus to produce a conditioned response, and operant conditioning as a three-phase process (antecedent, behaviour and consequence) involving reinforcement (positive and negative) and punishment (positive and negative)

Question 8c (2 marks)

The aggressive customer who wanted to buy groceries was no longer able to after being removed from the store by security. Name and explain the type of consequence this is for the customer.

Answer:

- *Negative punishment.*
- *Being removed from the store is an example of a desired stimulus (supermarket access to buy groceries) being taken away, which will likely decrease the likelihood of the customer's aggressive behaviour in future.*

Marking Protocol:

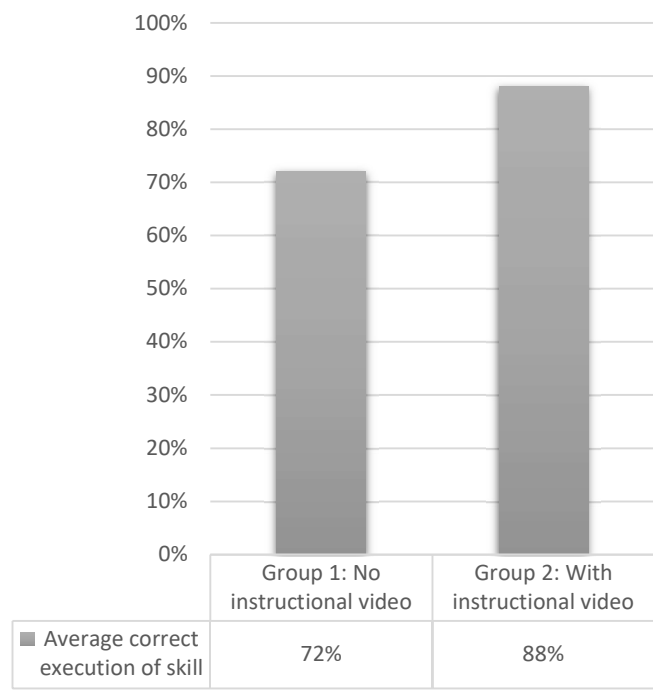
One mark for each of the above points.

Natalie Dracos, an emerging AFLW talent, was encouraged by her manager, Greg, to create a range of merchandise to benefit from her new-found fame as a sports celebrity. One product that Natalie is particularly excited about is the 'Dracos Ball' – a custom football with coloured locations for hand placement, and nominated angles for people to hold the ball to execute a variety of styles of kicking and handballing. Natalie has recorded an instructional video to accompany the 'Dracos Ball,' demonstrating how to use the ball to execute each of the techniques as marked on the ball. In particular, the instructional video shows Natalie kicking goals by using the markings on the ball. They hope to promote the ball for use by as many junior AFL and AFLW players as they can.

Before putting the ball on sale, Natalie and Greg decided to pilot test their product at the local football club that Natalie played for as a child. Sixty junior female football players aged from eight to fifteen were allocated by their player number (odd versus even player numbers) into two groups:

- Group 1 (with odd player numbers) was only provided with the Dracos Ball and trained with their regular coach without the assistance of the instructional video. This was designed to determine if the ball design was sufficiently self-explanatory to effectively execute the techniques.
- Group 2 (with even player numbers) was given the Dracos Ball but watched the video tutorial featuring Natalie before they took part in their training session with their regular coach.

After the training session, each group was tested on executing five different techniques that were featured on the ball, including various types of kicks and handballing. The correct execution of each skill by each player was determined by Natalie and Greg. The results are summarised below.



Question 9 (10 marks)

Write a report discussing the following:

- The ethical guidelines that must be adhered to before Natalie and Greg carry out this investigation.
- Why Natalie may be the ideal model for the instructional video, and how it may engage the junior players in the process of observational learning.
- The internal and external validity of the findings by outlining the limitations of the investigation and potential improvements for a future investigation.

Sample Answer:

- *Before any testing procedures take place, Greg and Natalie should seek informed consent from the guardians of the players who were aged 8 – 15, and inform them about the true nature and purpose of the investigation, as well as any risks involved. The players should also be comfortable participating in the investigation, and their withdrawal rights should be explained to them as well as their guardians prior to their involvement. To adhere to the ethical guideline of voluntary participation, players and their guardians must understand that their participation in the study is not compulsory, and that they should not be coerced in any way to participate.*
- *Natalie is likely to be an ideal model for players to observe in the instructional video because she is likely to be perceived positively (as she is a talented player with high status as a sporting celebrity) and shares similarities with her fans (e.g. her sex, and that she comes from the same junior club). As a result, she is likely to be viewed as a valued model, which increases the likelihood of successful observational learning.*
- *By watching the video, players in Group 2 may engage in five stages of observational learning:*
 - *Attention: Players would need to actively watch Natalie’s technique shown in the video; for example, by paying particular attention to her hand placements and angles at which to hold the ball.*
 - *Retention: Players would need to form a mental representation of what had been observed, such as the handball technique, and store it in memory.*
 - *Reproduction: Players must have the physiological and psychological ability to be able to reproduce Natalie’s techniques. For example, they must have the required strength to be able to kick in the same way as Natalie; this may be an important aspect to note for the younger players, where modifications may need to be made.*
 - *Motivation: As the players may be fans of Natalie/AFLW, they may want to replicate the behaviours that they observed to improve their skills in playing the game.*
 - *Reinforcement: If the players see Natalie successfully score a goal while using the Dracos ball, they may be vicariously reinforced to use the ball in a similar way. In executing the techniques, the learners may also experience intrinsic reinforcement from a sense of accomplishment, or extrinsic reinforcement in the form of praise from their coaches, parents, peers or Natalie herself, increasing the likelihood of continuing the behaviour into the future.*
- *Although the results indicate that Group 2 (with the instructional video) performed better than Group 1, there are several limitations of the investigation that threaten the internal validity of the results. An investigation is said to be internally valid if it investigates what it sets out to investigate.*

- *Given that a between-subjects design was utilised, participant differences may have affected skill execution. For example, Group 2 may have had an older or more skillful team than Group 1, which may account for the results. This confounding variable threatens the internal validity of the results, as it is unclear if any changes in the dependent variable (the skill execution) are solely due to the independent variable (having or not having the instructional video).*
- *The accuracy of Natalie and Greg's appraisals of the players' skill execution may be uncertain, given their vested interest in the product they are selling. For example, they may be able to make more profit by selling the Dracos ball alongside the instructional video, rather than the ball alone, so may have been biased in their perceptions of the correct execution of each skill that was assessed. To maintain the ethical concept of integrity where there is the honest reporting of all results, whether favourable or unfavourable, it may be suggested that an unbiased research assistant be used to evaluate the skill execution of both groups (and ideally do not know which participants had seen the video beforehand). This would help to improve the internal validity of the results.*
- *Furthermore, as Natalie and Greg have gone to a familiar football club, any relationships they may have could have biased the results. For example, Natalie may perceive the skill execution more favourably for players that she knows, and players may be motivated to impress Natalie which influences their skill execution regardless of if they had seen the instructional video. These confounding variables could be controlled by utilising an unbiased research assistant and a variety of participants from multiple football clubs, which would help to improve the internal validity (and consequently, external validity) of the results.*
- *While the external validity of the results may be somewhat supported by the investigation taking place out on the football field and not in a lab environment, there are several threats to the external validity of the results. An investigation is said to be externally valid if the results of the research can be applied to similar individuals in a different setting.*
- *Firstly, the issues with the investigation's internal validity as outlined above mean that the results are also not externally valid.*
- *Furthermore, several sampling issues may further limit the external validity of the results. Random sampling was not used; not every member of the population of junior AFL/AFLW players had an equal chance of being selected for the sample in this investigation, so the sample may have been biased. Also, the small sample size of sixty participants is unlikely to be a representative sample of all junior AFL and AFLW players. This limits the external validity of the results, and Natalie and Greg should seek to test the ball/instructional video with a much broader sample across multiple football clubs.*

Marking Protocol:

This answer is globally marked (i.e. an overall mark is awarded for the entire answer). The following criteria could be used to assess a response:

9 – 10 Outstanding	<ul style="list-style-type: none">• All elements of the question are addressed to an outstanding standard.• An insightful, well-structured and comprehensive application of several ethical guidelines most relevant before the commencement of the investigation, and observational learning theory (including the suitability of Natalie Dracos as an appropriate model).• Well-justified discussions of the limitations of the investigation, carefully linked to the concepts of internal and external validity.• Precise and effective use of appropriate psychological terminology sustained throughout the response, which could include: informed consent, voluntary participation, withdrawal rights, attention, retention, reproduction, motivation, reinforcement, between-subjects design, and random sampling.
7 – 8 High	<ul style="list-style-type: none">• All elements of the question are addressed to a high standard.• A thoughtful, detailed and relevant application of at least one ethical guideline that is relevant before the commencement of the investigation, and observational learning theory (including the suitability of Natalie Dracos as an appropriate model).• A thoughtful and considered discussion of the limitations of the investigation, linked to the concepts of internal and external validity.• Formal and appropriate psychological terminology is used throughout the response.
5 – 6 Medium	<ul style="list-style-type: none">• All elements of the question are addressed to a satisfactory standard.• A relevant application of at least one ethical guideline relevant to the investigation, and observational learning theory (including the suitability of Natalie Dracos as an appropriate model).• An accurate discussion of the limitations of the investigation, alongside the concepts of internal and external validity.• Formal and appropriate psychological terminology is mostly used.
3 – 4 Low	<ul style="list-style-type: none">• Not all elements of the question are addressed or addressed correctly; for example, Natalie’s suitability as a model may not be referenced.• A limited application of ethical guidelines relevant to the investigation, and observational learning theory.• Some discussion of the limitations of the investigation, internal and external validity.• Limited formal and appropriate psychological terminology is used.
1 – 2 Very Low	<ul style="list-style-type: none">• A superficial attempt at the question.• An incomplete or inaccurate application of ethical guidelines and observational learning.• Minimal discussion of the limitations of the investigation, internal and external validity.• Minimal formal and appropriate psychological terminology is used.
0 marks	<ul style="list-style-type: none">• The question has not been meaningfully attempted.

**Student
name:**

Use a **PENCIL** for **ALL** entries. For each question, shade the box which indicates your answer.

Marks will **NOT** be deducted for incorrect answers.

NO MARK will be given if more than **ONE** answer is completed for any question.

If you make a mistake, **ERASE** the incorrect answer – **DO NOT** cross it out.

1	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
2	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
3	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
4	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
5	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
6	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
7	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
8	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
9	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
10	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
11	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
12	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
13	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
14	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D

15	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
16	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
17	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
18	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
19	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
20	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
21	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
22	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
23	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
24	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
25	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
26	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
27	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
28	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D

29	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
30	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
31	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
32	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
33	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
34	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
35	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
36	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
37	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input checked="" type="checkbox"/> D
38	<input checked="" type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D
39	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
40	<input type="checkbox"/> A	<input checked="" type="checkbox"/> B	<input type="checkbox"/> C	<input type="checkbox"/> D