



Units 3&4 Psychology Practice Exam 2023 (Trial 1) – Assessment Guide

Section A

VCAA Key Knowledge

Question

Answer Guide

*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 1

Daniel studied Indonesian when he was in high school. He used to practice his speaking skills and became quite fluent; however, Daniel is now in his mid-30s and struggles to remember words and cannot construct any sentences. What process has most likely occurred?

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

C *Through a lack of use, the neural connections for speaking Indonesian have been pruned.*

Use the following information to answer Questions 2 and 3.

Abby was holding a hot cup of coffee and, after taking a sip, decided it was too hot and put the cup back on the table.

*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 2

The sensory information from Abby's lips is travelling to her brain via

- A. efferent pathways.
- B. afferent pathways.
- C. GABA pathways.
- D. the spinal cord.

B *Sensory information travels to the brain via afferent pathways.*

*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 3

The sensory function of Abby's lips is governed by which division of the peripheral nervous system?

- A. spinal cord
- B. brain
- C. somatic nervous system
- D. autonomic nervous system

C *The sensory function of the somatic nervous system was responsible for recognising that the coffee was hot.*

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 4

An example of an internal stressor would be

- A. the pain in your arm after an injection.
- B. a person shouting at you from across the street.
- C. the extreme dry heat in a sauna.
- D. a bushfire threatening your home.

A Pain is an internal stressor while all other options are external stressors.

Use the following information to answer Questions 5 – 7.

Michelle has a fear of public speaking. She has just been informed that she will need to complete a 10-minute oral presentation during the last week of her university course.

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 5

Michelle is stunned when she first hears this news and feels unable to cope. Which stage of Selye's General Adaptation Syndrome (GAS) is Michelle in?

- A. exhaustion
- B. alarm
- C. primary appraisal
- D. secondary appraisal

B Michelle initially enters the alarm sub-stage of shock, resulting in her initial inability to cope.

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 6

After a moment, Michelle's sympathetic nervous system activates and stress hormones are released so that Michelle can begin combating the stressor. Michelle is now in what stage of the GAS model?

- A. exhaustion
- B. alarm
- C. primary appraisal
- D. secondary appraisal

B After a moment, Michelle will enter the second sub-stage of alarm – countershock. This allows her to begin resisting the stressor.

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 7

Michelle has been able to cope with the stress of public speaking because she has been preparing all term for the oral presentation. She has spoken with previous students who had completed this task the year before, set a timeline for creating her presentation, and practised her presentation multiple times, which has made her feel at ease. According to Lazarus and Folkman's Transactional Model of Stress and Coping, which of the following statements relates to Michelle's ability to cope?

- A. Michelle has appraised the stressor as irrelevant
- B. Michelle has appraised the stressor as a threat
- C. Michelle has appraised the stressor as a harm/loss to her
- D. Michelle has appraised that she has the resources and ability to cope

D Michelle has likely appraised that she can cope because she has the resources and ability to do so.

Use the following information to answer Questions 8 – 10.

Henry is attempting to train his pet rat to perform tricks using food pellets as a reward. After many trials of trying to reinforce the correct behaviour with food pellets, the rat was unable to perform any tricks.

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 8

What could be a problem with Henry's method of reinforcement?

- A. Henry is presenting the consequence immediately after the desired behaviour was performed
- B. Henry is only reinforcing the correct behaviour and no other behaviours
- C. the rat does not like the taste of the food pellets and does not see them as a reward
- D. the rat is making a connection between the food pellet and the trick

C *The consequence needs to be appropriate for learning to occur. If the rat does not like the reward, then it will not choose to continue the behaviour.*

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 9

Henry decided to try a different strategy to get his rat to perform the tricks. Every time the rat did not perform the trick correctly, Henry would remove an item from the rat's cage (e.g. its food bowl, water supply etc.). This is a form of

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

D *This is an example of negative punishment. Henry is removing items to weaken the behaviour of not performing the tricks correctly.*

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 10

After a few weeks, Henry's rat was performing the tricks effortlessly without the need for a consequence. This form of learning for the rat was

- A. passive.
- B. involuntary.
- C. active.
- D. reflexive.

C *Operant conditioning involves active participation from the learner.*

Use the following information to answer Questions 11 and 12.

Kiera, a young Indigenous Australian girl, is watching her father perform a smoking ceremony. She watches intently and would like to perform the ceremony herself one day.

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

Question 11

Kiera's learning process involves

- A. innate skills.
- B. classical conditioning.
- C. observational learning.
- D. operant conditioning.

C Kiera is learning by actively watching her father; this is observational learning.

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 12

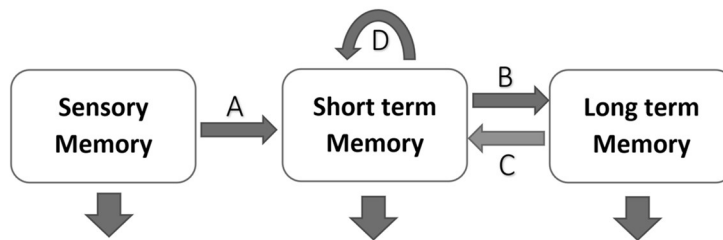
Traditionally, most of the knowledge Kiera has about Country and her culture would come from

- A. story books.
- B. websites.
- C. story sharing.
- D. textbooks.

C Aboriginal and Torres Strait Islander peoples commonly pass on their knowledge of Country and culture through story sharing.

Use the following information to answer Questions 13 and 14.

Below is a representation of the Atkinson-Shiffrin multi-store model of memory.



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 13

Information from sensory memory enters short-term memory through the process of

- A. attention.
- B. rehearsal.
- C. decay.
- D. retrieval.

A If we pay attention to the sensory information, it will pass into short-term memory.

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 14

Which arrow is most likely representing the process of retrieval?

- A. A
- B. B
- C. C
- D. D

C Information being sent from long-term memory to short-term memory where the information can be consciously manipulated is a process of retrieval.

Use the following information to answer Questions 15 and 16.

Marcus is a retired car mechanic. He is reminiscing with his friends about the time he pulled apart an old Mercedes and restored it. Marcus has vivid memories of this event and can recall all the steps that he took to restore the old car.

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

Question 15

Marcus' memory of his experience of restoring the old Mercedes car is an example of a/an _____ memory.

- A. procedural
- B. semantic
- C. implicit
- D. autobiographical

D *These are personal experiences that are autobiographical memories for Marcus.*

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

Question 16

Marcus' memory of how to restore the old Mercedes car would likely be stored in his

- A. hippocampus.
- B. amygdala.
- C. neocortex.
- D. suprachiasmatic nucleus.

C *The neocortex plays a role in the long-term storage of procedural memories.*

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 17

To remember the order of the planets in our solar system, Ariel came up with the following saying: 'My Very Educated Mother Just Served Us Nine Pizzas'. This is an example of

- A. an acronym.
- B. an acrostic.
- C. the method of loci.
- D. the use of Songlines.

B *This is an example of an acrostic as it creates a sentence to help with recalling the planets; conversely, an acronym creates a pronounceable word.*

Use the following information to answer Questions 18 – 21.

A group of doctors are researching the effects of stress on the gut microbiota of 40 volunteer interns at their hospital. The researchers tested the microbiomes in their guts before they commenced their internships and then retested them six months later after they had endured the highly stressful internship program.

After the six-month program, the researchers found that there were disturbances to the microbiome in 80% of the participants with an indication of more harmful bacteria and a depletion of good bacteria in the gut. The participants were also tested for their levels of depression and anxiety before and after the program. Participants with the highest microbiome disturbances also scored higher on the depression and anxiety tests.

identify independent, dependent and controlled variables in controlled experiments

Question 18

What is the dependent variable for this study?

- A. the stressful internship program
- B. the change in the microbiome
- C. the diet of participants and whether they take probiotics
- D. whether the participants are experiencing acute or chronic stress

B *The doctors are trying to measure the change in the microbiome of the participants.*

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 19

What experimental design has been used in this study?

- A. between-subjects design
- B. within-subjects design
- C. mixed design
- D. observational design

B *The participants are being tested before and after the internship program, which is an example of a within-subjects experimental design.*

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 20

After the stressful internship program, the participants were more likely to have a weakened immune system and were more prone to catching a cold or flu. This is likely due to the sustained release of

- A. adrenaline.
- B. dopamine.
- C. serotonin.
- D. cortisol.

D *Stress produces the sustained release of cortisol, which can weaken the immune system.*

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 21

Which of the following is not a physiological management strategy for the increased depressive symptoms in participants?

- A. taking a mindfulness course before commencing the next six-month training program
- B. a faecal transplant from a healthy donor
- C. an improved diet with probiotics
- D. anti-depressant medication

A *A mindfulness course is a psychological strategy; all other responses are biological/physiological treatment options.*

Use the following information to answer Questions 22 – 24.

Jack, a 20-year-old man, has just entered REM sleep.

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 22

Which of the following monitors would show the least amount of activity whilst Jack is in REM sleep?

- A. electroencephalography
- B. electro-oculography
- C. electromyography
- D. a heart rate monitor

C An EEG is active during REM sleep, showing beta-like waves; the EOG would be active as REM sleep involves rapid eye movement; and one's heart rate increases during REM sleep. REM sleep involves muscle atonia, resulting in very minimal muscle movements – hence, an EMG would show the least amount of activity.

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 23

Which of the following correctly describes the appearance of Jack's brain waves during electroencephalography while he is in REM sleep?

	Frequency	Amplitude
A.	high	low
B.	low	high
C.	high	high
D.	low	low

A During REM sleep, Jack will have beta-like waves, which are indicated by high-frequency and low-amplitude waves.

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 24

During which sleep cycle would we expect Jack to experience a longer period of REM sleep?

- A. cycle 1
- B. cycle 2
- C. cycle 3
- D. all cycles would have equally brief periods of REM sleep as it only makes up 20% of sleep

C The amount of time spent in REM sleep increases with each sleep cycle.

Use the following information to answer Questions 25 – 28.

Cassandra has been working nightshifts and has not been sleeping when she gets home. Cassandra has gone three days with very minimal sleep.

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 25

A behavioural symptom for Cassandra following this sleep deprivation would be

- A. difficulty with remembering how to use the new coffee machine.
- B. clumsily spilling her coffee.
- C. being shocked when coffee spills on the table.
- D. difficulty maintaining attention to what she is watching on YouTube.

B *Behavioural effects of sleep deprivation include clumsiness, slower performance, and other issues with normal actions. Options A and D are cognitive effects, and option C is an affective effect of sleep deprivation.*

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 26

Cassandra's husband has offered to drive her to work and pick her up because he believes that her sleep deprivation would affect her driving. Cassandra has gone 24 hours without sleep. Research has found that 24 hours without sleep has comparable effects to someone with a BAC level of

- A. 0.10%.
- B. 0.5%.
- C. 0.01%.
- D. 0.05%.

A *24 hours of sleep deprivation has been shown to lead to equivalent cognitive deficits of a BAC of 0.10%.*

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 27

After a week of working night shifts, Cassandra has been assigned to the morning shifts for the following week. Cassandra was excited about this as she was looking forward to getting some quality sleep; however, when Cassandra went to bed that night, she had difficulty falling asleep and staying asleep. It appears that Cassandra is suffering from

- A. total sleep deprivation.
- B. a circadian rhythm sleep disorder.
- C. delayed sleep-phase syndrome.
- D. advanced sleep-phase disorder.

B *Cassandra is experiencing a change to her sleep-wake cycle due to shift work, which is an example of a circadian rhythm sleep disorder. Because she does not appear to have a consistent delay or advance in her circadian rhythm, options C and D are not the best answer.*

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 28

Which of the following activities would not improve Cassandra's sleep hygiene?

- A. avoiding the use of screens and technology in the bedroom
- B. going for a 2km run just before going to sleep
- C. getting out of bed if she is struggling to fall asleep
- D. ensuring that the room is dark

B *Doing exercise is beneficial for sleep, but it is not recommended to do so just before going to sleep. All other options are recommended to improve sleep hygiene.*

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 29

A person who has high social and emotional wellbeing is most directly shown by

- A. being able to cope with the daily hassles of work.
- B. having irrationally high confidence in completing impossible tasks.
- C. feeling connected to a community.
- D. being organised and achieving goals.

C *Feeling connected to a community is an indication of high social wellbeing.*

mental wellbeing as a continuum, with an individual's mental wellbeing influenced by the interaction of internal and external factors and fluctuating over time, as illustrated by variations for individuals experiencing stress, anxiety and phobia

Question 30

Which of the following correctly identifies a similarity and a difference between anxiety and specific phobias?

	Similarity	Difference
A.	they are both considered 'normal'	anxiety can be adaptive whereas specific phobias are not
B.	they are both considered a mental disorder	specific phobias can be treated whereas anxiety cannot
C.	they are both considered 'helpful' in mild amounts	only specific phobias activate the fight-flight-freeze response
D.	often leads to an activation of the sympathetic nervous system	the trigger for anxiety may not be known, whereas the trigger of a phobic response is usually known

D *Both anxiety and specific phobias are likely to activate the sympathetic nervous system; specific phobias arise from a particular phobic stimulus which is usually known, whereas anxiety can occur under many circumstances and its source may not be known.*

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 31

Benzodiazepines assist with GABA dysfunction by

- A. making the receptor sites on the post-synaptic neuron become more responsive to GABA.
- B. blocking the glutamate receptor sites on the post-synaptic neuron.
- C. increasing the amount of GABA that is released into the synapse by the pre-synaptic neuron.
- D. blocking the glutamate receptor sites on the pre-synaptic neuron.

A *Benzodiazepines assist with GABA dysfunction by making the receptor sites that are on post-synaptic neurons more responsive to GABA.*

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

Question 32

Protecting Aboriginal and Torres Strait Islander peoples' culture over time, including their sense of history, identity and belonging, is known as

- A. self-determination.
- B. connection to Country.
- C. cultural and community wellbeing.
- D. cultural continuity.

D Protecting the culture over time is known as cultural continuity.

Use the following information to answer Questions 33 and 34.

A group of nutritionists wanted to explore the effects of a healthy diet and hydration on the mental wellbeing of a group of volunteers.

The participants completed a pre-test to determine their overall mental wellbeing. Participants were then provided with a strict diet that they needed to maintain (where they were only allowed to eat the pre-prepared meals provided by the experimenters), including the consumption of two litres of water each day for four weeks (which was monitored by the nutritionists).

At the end of the experiment, participants completed the post-test to determine their overall mental wellbeing.

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 33

This experiment would be influenced by a range of potential extraneous variables. Which of the following would not be one of the extraneous variables for this experiment?

- A. the participants' diet and hydration before coming into the experiment
- B. other risk and protective factors that could be influencing the mental wellbeing of participants
- C. the resilience of participants
- D. the differing diet and hydration consumed by each participant during the experiment

D The participants' diet and hydration were standardised by the nutritionists during the experiment, so this can be considered a controlled variable, rather than an extraneous variable.

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

Question 34

The nutritionists were too busy to inform participants about their results and did not give them the opportunity to discuss the impact of diet and hydration on their mental wellbeing.

This has breached the ethical guideline of

- A. informed consent.
- B. voluntary participation.
- C. confidentiality.
- D. debriefing.

D Debriefing ensures that, at the end of the experiment, the participant leaves understanding the experimental aim, results and conclusions.

Use the following information to answer Questions 35 and 36.

Fatima has just been awarded a scholarship to complete her university degree in the United States. Fatima is excited about the opportunity but is also nervous about leaving her family and moving to another country.

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 35

Receiving this news would have activated which division and sub-division of her nervous system?

	Division	Sub-division
A.	autonomic	sympathetic
B.	somatic	parasympathetic
C.	autonomic	parasympathetic
D.	somatic	sympathetic

A *Fatima has activated her sympathetic nervous system, which is a sub-division of the autonomic nervous system.*

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 36

After receiving this news, one of Fatima's reactions could include her

- A. pupils contracting.
- B. saliva production increasing.
- C. stomach contractions decreasing.
- D. sweat production decreasing.

C *The decrease in stomach contractions is the only reaction that would occur with sympathetic nervous system activation; the other options describe physiological changes associated with the parasympathetic nervous system.*

Use the following information to answer Questions 37 and 38.

Melatonin is an important sleep hormone.

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 37

Melatonin is released from the

- A. suprachiasmatic nucleus.
- B. hypothalamus.
- C. optic chiasm.
- D. pineal gland.

D *Melatonin is released from the pineal gland.*

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 38

When will melatonin levels be at their highest for a normal adult?

- A. 4pm
- B. 8pm
- C. 2am
- D. 8am

C *Melatonin levels are at their highest in the middle of the night.*

Use the following information to answer Questions 39 and 40.

Tilly is five years old. She is lying in bed and trying to fall asleep. Several minutes later, Tilly's legs jolt and she feels like she is about to fall.

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 39

It appears that Tilly has entered

- A. stage 1 of NREM sleep.
- B. stage 2 of NREM sleep.
- C. stage 3 of NREM sleep.
- D. REM sleep.

A *Tilly has experienced a hypnic jerk, which occurs during stage 1 of NREM sleep.*

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 40

Tilly has a newborn sister. The newborn and Tilly will have differing patterns of sleep. Which of the following is incorrect?

- A. the newborn will sleep for longer overall compared to Tilly
- B. the newborn will spend more time in REM sleep compared to Tilly
- C. Tilly will wake more throughout the night compared to the newborn
- D. the newborn will likely require several periods of sleep during the day whereas Tilly will not

C *The newborn will wake more throughout the night as she will require feeding. Tilly is more likely to sleep through the night.*

Section B

VCAA Key Knowledge

Question

Answer guide

Michael is training for an upcoming triathlon. Michael was running on his treadmill when he noticed his left leg beginning to cramp. He stopped the treadmill so that he could get off.

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 1a (2 marks)

Explain whether Michael stopping the treadmill was a conscious or unconscious response.

Answer:

- *Stopping the treadmill is a conscious response.*
- *Michael would have been aware of the action to stop the treadmill, which makes this a conscious response.*
- *The decision to stop the treadmill would have been initiated by Michael's brain, which initiates conscious responses.*
- *Michael's action to stop the treadmill is a voluntary response, which is characteristic of a conscious response.*

Marking protocol:

One mark for the first point, and one mark for any of the following points.

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 1b (6 marks)

Explain how the nervous system is involved in getting Michael to stop the treadmill due to the cramp in his leg, identifying a key division and subdivision of the nervous system responsible.

Answer:

- *Michael's somatic nervous system is primarily responsible for stopping the treadmill.*
- *The somatic nervous system is a subdivision of the peripheral nervous system.*
- *The cramp is initially registered by sensory receptors in Michael's leg.*
- *This sensory information is then transmitted via sensory/afferent neurons/pathways to the brain.*
- *The brain processes this sensory information and makes a decision to initiate the movement of stopping the treadmill.*
- *Motor information is sent via motor/efferent neurons/pathways to skeletal muscles (in his hand/arm) which activates the movement of stopping the treadmill.*

OR

- *Michael's brain is responsible for deciding to stop the treadmill.*
- *The brain is a subdivision of the central nervous system.*
- *Sensory information about the leg cramp is received by the brain.*
- *The brain processes this sensory information and makes a decision about stopping the treadmill.*
- *The brain then initiates/activates the motor response to stop the treadmill.*
- *Motor information is sent via motor/efferent neurons/pathways to skeletal muscles (in his hand/arm) to stop the treadmill.*

Marking protocol:

One mark for each of the above points.

Neurotransmitters are chemical substances that are produced by a neuron that carries a message to other neurons.

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

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 2a (3 marks)

Glutamate is the main excitatory neurotransmitter.

Explain what this means in relation to memory and learning.

Answer:

- *Excitatory neurotransmitters such as glutamate increase the likelihood that the post-synaptic neuron will fire/generate an action potential.*
- *The repeated activation of post-synaptic neurons resulting from glutamate's excitatory effects plays a key role in long-term potentiation (the long-term strengthening of synaptic connections).*
- *Long-term potentiation is thought to be the fundamental (biological) mechanism of memory formation that leads to learning.*

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 2b (2 marks)

Serotonin and dopamine are considered neuromodulators.

Outline two differences between neurotransmitters and neuromodulators.

Answer:

- *Neurotransmitters tend to affect a single neuron/synapse (locally), whereas neuromodulators can affect multiple neurons/synapses at one time (systemically; through diffuse transmission).*
- *Neurotransmitters tend to result in either excitation or inhibition, whereas neuromodulators may have a range of effects that may be excitatory and/or inhibitory.*
- *Neurotransmitters tend to affect post-synaptic neurons more quickly, compared to neuromodulators which can have an effect for a longer period.*

Marking protocol:

One mark for any of the above points, to a maximum of two.

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 2c (4 marks)

List two functions of serotonin and two functions of dopamine.

Answer:

Serotonin plays a role in:

- *regulating mood/emotions.*
- *the perception of pain.*
- *appetite.*
- *sexual desire and performance.*
- *sleep.*
- *hallucinations.*
- *a range of psychological conditions, including depressive disorders, anxiety disorders, sleep disorders, aggression, and psychosis.*

Dopamine plays a role in:

- *regulating voluntary movements.*
- *reward-motivated/reinforcement learning.*
- *feelings of pleasure.*
- *a range of psychological conditions including Parkinson's disease.*

Marking protocol:

One mark for any valid function of serotonin to a maximum of two, and one mark for any valid function of dopamine to a maximum of two.

Van was at the playground with his older sister and was watching her play on the swing. Van wanted to be able to swing independently as well.

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

Question 3a (5 marks)

With reference to each stage of observational learning, outline how Van can learn how to swing independently like his sister.

Answer:

- *Attention: Van must actively watch his sister's actions in swinging independently.*
- *Retention: Van must create a mental representation of his sister's swinging action and store this in his long-term memory.*
- *Reproduction: Van needs to be mentally and physically capable of swinging independently.*
- *Motivation: Van has the desire to swing independently as indicated by him wanting to do so.*
- *Reinforcement: Van may receive praise from his family when he can swing independently or may feel self-satisfied; this will encourage him to continue to swing independently in future.*

Marking protocol:

One mark for each of the above points.

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 3b (3 marks)

Van learns that he must not drag his feet while near the ground for him to swing independently. With reference to long-term depression, explain what is happening to allow Van to swing independently.

Answer:

- *Long-term depression involves the weakening of neural pathways due to repeated/long-lasting low-level/sub-threshold stimulation.*
- *As Van learns to not drag his feet, long-term depression causes the neural pathways involved with dragging his feet to become weakened/pruned.*
- *This allows for the new skill of swinging independently (without dragging his feet) to be strengthened / this leads to the decreased tendency to drag his feet (which prevents him from swinging independently) as these neural pathways are activated less.*

Marking protocol:

One mark for each of the above points.

When Kessia was 14, she decided to go for a swim in the local river with her friends. While standing in the water, she was pinched by a yabby (a small freshwater crayfish). Kessia screamed in pain and ran out of the water, and was pinched by another yabby on her way out. Kessia now avoids going anywhere near rivers and her heart rate soars whenever she crosses a bridge over a river.

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

Question 4a (2 marks)

Explain whether Kessia's conditioned fear is implicit or explicit.

Answer:

- *Kessia's conditioned fear is implicit.*
- *This is because Kessia's fear does not require conscious retrieval / her fear of rivers is reflexive/automatic/involuntary/formed through classical conditioning.*

Marking protocol:

One mark for each of the above points.

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

Question 4b (1 mark)

Identify the brain area primarily involved in encoding this conditioned fear.

Answer:

- *The amygdala (which is involved with encoding classically conditioned fear/emotional memories).*

Marking protocol:

One mark for the above point.

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 4c (3 marks)

Kessia uses an app on her phone for mindfulness meditation whenever she begins to feel anxious about rivers. Identify what type of strategy this is in relation to the biopsychosocial approach to maintaining mental wellbeing, and list two benefits of mindfulness meditation for Kessia.

Answer:

- *Mindfulness meditation is a psychological strategy for maintaining her mental wellbeing.*
- *It could allow Kessia to focus on her current thoughts and feelings, and learn to accept them/be non-judgemental.*
- *It could bring Kessia back to the current moment rather than reminiscing about the incident with the yabbies.*
- *It could allow Kessia to notice the tension in her body so she knows to relax her muscles.*
- *It could slow down Kessia's breathing and racing mind to help induce a sense of calm.*
- *It could improve Kessia's mental health by providing relief from anxiety, stress and physical pain.*

Marking protocol:

One mark for the first point, and one mark for any benefit of mindfulness for Kessia, to a maximum of two.

Isabelle is a Year 12 student who often feels tired during the day because she stays up late texting her boyfriend while she does her homework on her laptop and watches her favourite Netflix series. She goes to sleep around 2am and must be up at 7am to get ready to catch the bus to school. Isabelle does not feel tired in the evenings; if she goes to bed before 2am, she finds it very difficult to fall asleep. On weekends when she can sleep whenever she wants, she sleeps soundly from 2am to 11am.

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 5a (1 mark)

What circadian rhythm sleep disorder is Isabelle likely experiencing?

Answer:

- *Delayed Sleep Phase Syndrome / DSPS.*

Marking protocol:

One mark for the above point.

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 5b (2 marks)

Explain two biological reasons for Isabelle's condition.

Answer:

- *Isabelle's sleep-wake cycle may have shifted (being much later than desired) due to the delayed release of melatonin by several hours (which is common in adolescence).*
- *Isabelle's exposure to (blue) light from texting her boyfriend, using her laptop and watching Netflix is likely to suppress the release of melatonin and cause her to feel more awake during the night.*

Marking protocol:

One mark for each of the above points.

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 5c (1 mark)
How much sleep is Isabelle supposed to be getting?

Answer:

- *Adolescents such as Isabelle should be getting approximately eight to ten hours of sleep per night.*

Marking protocol:

One mark for the above point.

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 (3 marks)
Explain how bright light therapy could be used to assist Isabelle in feeling tired at the desired time.

Answer:

- *Bright light therapy involves exposing Isabelle to brighter-than-normal light to entrain her sleep-wake cycle and help with the suppression and release of melatonin at the appropriate times.*
- *Bright light exposure should be done early in the morning (e.g. between 6am and 8am) to suppress melatonin and help Isabelle feel more awake/alert earlier.*
- *Conversely, her bedroom environment in the evening should be as dark as possible to encourage the release of melatonin, inducing sleepiness.*

Marking protocol:

One mark for each of the above points.

Dr Paine wanted to explore the effects of aphantasia on memory. He gathered a group of 100 volunteers for his study, 50 of whom were aphantasics while the remaining 50 were not.

Dr Paine presented the participants with 20 everyday objects under a cloth. The cloth was removed and participants were given 30 seconds to memorise the items before the cloth was replaced. Participants needed to recall as many items as possible within 60 seconds.

The results of this experiment are shown below:

	Participants with aphantasia	Participants without aphantasia
Mean recall of items (out of 20)	13.1	15.8

the role of episodic and semantic memory in retrieving autobiographical events and in constructing possible imagined futures, including evidence from brain imaging and postmortem 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 6a (1 mark)
Define aphantasia.

Answer:

- *People with aphantasia cannot voluntarily generate mental imagery (especially visual object imagery).*

Marking protocol:

One mark for the above point.

formulate hypotheses
to focus investigations

Question 6b (3 marks)

Write a hypothesis for Dr Paine's study.

Answer:

- *It was hypothesised that aphantasics will recall fewer items (out of 20) compared to those who do not have aphantasia.*

Marking protocol:

One mark for the independent variable (people with/without aphantasia), one mark for a prediction/direction, and one mark for the dependent variable.

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 6c (4 marks)

Explain what is involved in a between-subjects and a within-subjects experimental design, and outline why neither of these could have been used in Dr Paine's study.

Answer:

- *In a between-subjects experimental design, each participant is randomly allocated to either the experimental or control group.*
- *For Dr Paine's study, participants cannot be randomly allocated; instead, they were placed in either the 'aphantasia' group or the 'non-aphantasia' group depending on whether or not they had the condition (which is why a between-subjects design could not be used).*
- *In a within-subjects design, each participant takes part in both the experimental and control conditions.*
- *A within-subjects design could not have been used in this experiment as participants cannot move between having and not having aphantasia (which is entailed by this experimental design).*

Marking protocol:

One mark for each of the above points.

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 6d (4 marks)

What is the duration and capacity of short-term memory?

Describe how participants in this study could increase the functional duration and capacity of their short-term memories while undertaking the memory task.

Answer:

- *Short-term memory (STM) has a duration of approximately 18 – 30 seconds...*
- *...and a capacity of 7 ± 2 items.*
- *To increase the functional duration of STM, participants could use (maintenance) rehearsal by repeating the items to be remembered over and over in their STM.*
- *To increase the functional capacity of STM, participants could use chunking by grouping the items to be remembered into a smaller number of units/chunks.*

Marking protocol:

One mark for each of the above points.

use reasoning to construct scientific arguments, and to draw and justify conclusions consistent with evidence base and relevant to the question under investigation

Question 6e (3 marks)

Write a conclusion for Dr Paine's study.

Answer:

- *The results of Dr Paine's study suggest that aphantasics may have a lowered ability to recall information from memory as compared to non-aphantasics.*

Marking protocol:

One mark for the correct identification of the independent and dependent variables, one mark for a directional statement, and one mark for a conclusion that is congruent with Dr Paine's study.

identify outliers and contradictory or incomplete data

process quantitative data using appropriate mathematical relationships and units, including calculations of percentages, percentage change and measures of central tendencies (mean, median, mode), and demonstrate an understanding of standard deviation as a measure of variability

Question 6f (2 marks)

Dr Paine found that the standard deviation for the aphantasia group was significantly lower (SD = 0.1) than the standard deviation for the non-aphantasia group (SD = 7.4). Define the term 'outlier' and explain whether the aphantasia or non-aphantasia group is more likely to contain outliers.

Answer:

- *An outlier is any data point that lies a long way from other results.*
- *The non-aphantasia group is more likely to have outliers in the dataset because this contributes to a higher standard deviation.*

Marking protocol:

One mark for each of the above points.

Sarah and James were travelling to the airport for their first overseas holiday together. When they arrived at the airport, they were told that their flight had been delayed by three hours due to inclement weather. James was furious and became very stressed and upset. Although Sarah was also affected, she did not care as much as James; she was still excited about going on the holiday and decided to distract herself by buying some snacks and setting herself up in a comfortable spot to wait. She also saw the delay as an opportunity to catch up on a book she had been meaning to read for months. Meanwhile, James had an argument with the airport staff, sulked, and paced around the airport terminal trying to spot the issue with the weather.

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 7a (4 marks)

According to Lazarus and Folkman's Transactional Model of Stress and Coping, explain the difference in Sarah and James' primary and secondary appraisals regarding their flight delay.

Answer:

- *James' primary appraisal of the delay was that it was stressful and likely to be a threat.*
- *James' secondary appraisal was that he did not have any adequate coping strategies and, therefore, he experienced stress.*
- *On the other hand, although Sarah's primary appraisal of the delay was also that it was stressful, she was more likely to see it as a challenge (given the opportunity to catch up on her book).*
- *Also unlike James, Sarah appeared to have sufficient coping strategies to deal with the delay, leading to little/no stress.*

Marking protocol:

One mark for each of the above points.

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

Question 7b (3 marks)

What is the difference between approach and avoidance strategies? Which strategy would have been more effective for James in this scenario?

Answer:

- *Approach strategies involve efforts to confront a stressor and deal directly with it and its effects.*
- *On the other hand, avoidance strategies involve efforts that evade a stressor and deal indirectly with it and its effects.*
- *As the flight delay is out of James' control, it may have been more appropriate for James to employ an avoidance strategy (as Sarah did) and find a distraction from the stressor.*

Marking protocol:

One mark for each of the above points.

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

Question 7c (2 marks)

Identify one advantage of using approach strategies and one advantage of using avoidance strategies when coping with stress.

Answer:

- *Approach strategies are more likely to lead to effectively resolving/removing/combating/dealing with the stressor in the long term.*
- *Approach strategies may help the individual to vent/express emotions.*
- *Avoidance strategies may provide quick, short-term relief from stressors.*
- *Avoidance strategies may be better at reducing stress when a stressor is beyond the control of the individual.*
- *Avoidance strategies may be useful when exposed to multiple stressors, allowing an individual to 'switch off' from some of the stressors, and potentially deal better with them individually.*
- *Avoidance strategies may increase the hope/courage of an individual who may otherwise be too preoccupied with dealing with the stressor, particularly if the stressor is difficult to manage.*

Marking protocol:

One mark for any advantage of approach strategies, and one mark for any advantage of avoidance strategies.

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

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 7d (6 marks)

Describe three ways that Lazarus and Folkman's

Transactional Model of Stress and Coping may have greater explanatory power as compared to Selye's General Adaptation Syndrome when explaining human stress responses.

Answer:

- *Lazarus and Folkman's Transactional Model of Stress and Coping may have greater explanatory power for accounting for the variability in human responses to stress (and how we can appraise and experience stressors differently), whereas Selye's General Adaptation Syndrome (GAS) suggests that everyone follows the same general pattern of responses to stressors, which does not account for individual variability.*
- *The Transactional Model of Stress and Coping is a human model for stress which is likely to have a greater explanatory power for human stress when compared to Selye's GAS which was modelled off lab rat studies.*
- *The Transactional Model of Stress and Coping may have greater explanatory power for accounting for the changing/dynamic nature of stressors, environmental factors and coping resources, whereas Selye's GAS does not directly explain this variability.*
- *The Transactional Model of Stress and Coping may have greater explanatory power for considering stress as an interaction with the environment and the individual who may employ coping resources, whereas Selye's GAS suggests that responses to stress follow a predetermined pattern.*
- *The Transactional Model of Stress and Coping focuses on the psychological determinants of the stress response which may have greater explanatory power for the psychological experience of stress, whereas Selye's GAS only considers the involuntary physiological responses to stress.*

Marking protocol:

Two marks for any of the above points (or any other valid comparison), to a maximum of six.

Nicole has a specific phobia of cats. As a child, she was repeatedly chased and scratched by a neighbour's cat, causing bleeding from her arm. Since these incidents, Nicole has avoided any situation where she could be in contact with a cat. She avoids taking her pet dog to the vet and will not visit one of her close friends who owns a cat. Nicole's husband and daughter both want to have a pet cat and hope that Nicole seeks treatment from a psychologist to help her to overcome her specific phobia.

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)

the relative influences of factors that contribute to the development of specific phobia, with reference to gamma-aminobutyric acid (GABA) dysfunction and long-term potentiation (biological); behavioural models involving precipitation by classical conditioning and perpetuation by operant conditioning, and cognitive biases including memory bias and catastrophic thinking (psychological); and specific environmental triggers and stigma around seeking treatment (social)

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 8 (10 marks)

Describe the precipitation and perpetuation of Nicole's phobia through behaviourist approaches, and outline the psychotherapeutic treatments that a psychologist may use to help Nicole overcome her phobia as well as strategies that Nicole's husband and daughter could employ to assist with Nicole's treatment.

Sample Answer:

- From a behaviourist perspective, Nicole's specific phobia was likely precipitated through classical conditioning resulting from the repeated attacks by a cat when she was a child.
- Before conditioning, cats were a neutral stimulus (NS) that caused no particular response. The attacks were an unconditioned stimulus (UCS) that caused fear which is an unconditioned response (UCR).
- During conditioning, repeated associations of cats (the NS) were immediately followed by attacks (the UCS), eliciting a UCR of fear of the attacks.
- After conditioning, cats became a conditioned stimulus (CS) which elicits fear of the cats alone (a conditioned response; CR).
- In this way, classical conditioning can explain how Nicole's specific phobia has been triggered/precipitated.
- From a behaviourist perspective, operant conditioning has likely perpetuated Nicole's fear of cats.
- By avoiding any situation involving a cat, Nicole is negatively reinforced as Nicole is avoiding a fearful encounter, resulting in her continuing to avoid cats again in the future. This makes Nicole feel good and safe; however, it results in her fear of cats continuing (perpetuating) and prevents her from recovering from this fear, as she has no opportunity to be desensitised to cats.
- In terms of the three-phase model of operant conditioning, the antecedent could be any situation involving a cat, Nicole's behaviour is avoiding the situation/cat, and the consequence is avoiding fear which is negatively reinforcing.
- One psychological evidence-based intervention that a psychologist may use is cognitive behavioural therapy (CBT). CBT involves changing maladaptive thinking patterns so that there is a change in the problem behaviours, and vice versa. This could assist Nicole in shifting her biased thinking about cats so that she can be more open to tackling her avoidance behaviour. This shift could involve education about cats to understand that not all cats have aggressive/violent tendencies, as well as a possible therapy to counter any memory bias she may have about the incidents as a child.
- CBT may also involve systematic desensitisation, allowing Nicole to expose herself to cats gradually and to associate cats with a more pleasant or calming response.
- Firstly, this would involve Nicole learning to reliably replace her anxiety response with a relaxation response (e.g. through a relaxation

technique such as breathing retraining where she aims to control her breathing and induce a parasympathetic nervous system response).

- *Secondly, Nicole would develop a fear hierarchy for cats with her psychologist, with the most fear-provoking activity at the top and the least fear-provoking at the bottom. For example, looking at pictures of cats in a book might be the least fear-provoking activity, whereas holding a cat might be at the top of the hierarchy as it is the most fear-provoking.*
- *Next, Nicole will associate each step of the fear hierarchy with the relaxation response, starting from the least fear-inducing stimulus at the bottom of the hierarchy. Nicole will not progress to the next level of the hierarchy until she can reliably induce a calm/relaxed response to the feared stimulus. Gradually, she will work up the hierarchy over several sessions until she can complete the most fear-provoking task without producing a fear response.*
- *Throughout this process, Nicole would have repeatedly paired cats with the relaxation technique (UCS) to produce a calm response (UCR). After this counterconditioning process, cats will produce a new CR of a calm response.*
- *Nicole's husband and daughter could learn about the nature of her phobia and learn strategies that they could use to assist through psychoeducation, which is a key social evidence-based intervention for specific phobias. This may include discouraging Nicole's avoidance behaviour and challenging any unrealistic or anxious thoughts she may have. For example, Nicole may find it easier to stop avoiding situations with cats if she has supportive family members present who can look after Nicole and the cat if needed. This may help Nicole to become desensitised to cats. Furthermore, if her family can help to continually reassure Nicole that cats are friendly animals and the likelihood of an unprovoked attack is minimal (in challenging any catastrophic thoughts that Nicole may have), then Nicole may feel better supported to engage in psychotherapy and with cats to help her overcome her specific phobia.*

Marking Protocol:

This answer is globally marked (i.e. an overall mark is awarded for the entire answer).

9-10 Outstanding	• All elements of the question addressed to an outstanding standard. • An insightful, well-structured and comprehensive application of the three-phase process for classical and operant conditioning with a detailed description of psychotherapeutic treatments to help Nicole overcome her phobia. • Detailed recommendations to improve Nicole's phobia through psychoeducation. • Precise and effective use of appropriate psychological terminology is sustained throughout the response.
7-8 High	• All elements of the question addressed to a high standard. • A thoughtful, detailed and relevant application of the three-phase process for classical and operant conditioning with a detailed outline of psychotherapeutic treatments to help Nicole overcome her phobia. • Relevant recommendations to improve Nicole's phobia through psychoeducation. • Formal and appropriate psychological terminology is used throughout the response.
5-6 Medium	• All elements of the question addressed to a satisfactory standard. • A relevant application of classical and operant conditioning with an outline of at least one psychotherapeutic treatment to help Nicole overcome her phobia. • Some recommendations to improve Nicole's phobia through psychoeducation. • Formal and appropriate psychological terminology is mostly used.
3-4 Low	• Not all elements of the question are addressed or addressed correctly; for example, either classical conditioning or operant conditioning is omitted. • A superficial application of one psychotherapeutic treatment and/or psychoeducation to help Nicole overcome her phobia. • Limited formal and appropriate psychological terminology is used throughout the response. • Few links are made between psychological theory and the scenario.
1-2 Very low	• A superficial attempt at the question. • An incomplete or inaccurate application of theories to explain Nicole's phobia and of strategies to overcome the phobia. • Little formal and appropriate psychological terminology is used throughout the response.
0 marks	• 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	☐ A	☐ B	☒ C	☐ D
2	☐ A	☒ B	☐ C	☐ D
3	☐ A	☐ B	☒ C	☐ D
4	☒ A	☐ B	☐ C	☐ D
5	☐ A	☒ B	☐ C	☐ D
6	☐ A	☒ B	☐ C	☐ D
7	☐ A	☐ B	☐ C	☒ D
8	☐ A	☐ B	☒ C	☐ D
9	☐ A	☐ B	☐ C	☒ D
10	☐ A	☐ B	☒ C	☐ D
11	☐ A	☐ B	☒ C	☐ D
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13	☒ A	☐ B	☐ C	☐ D
14	☐ A	☐ B	☒ C	☐ D

15	☐ A	☐ B	☐ C	☒ D
16	☐ A	☐ B	☒ C	☐ D
17	☐ A	☒ B	☐ C	☐ D
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19	☐ A	☒ B	☐ C	☐ D
20	☐ A	☐ B	☐ C	☒ D
21	☒ A	☐ B	☐ C	☐ D
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23	☒ A	☐ B	☐ C	☐ D
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25	☐ A	☒ B	☐ C	☐ D
26	☒ A	☐ B	☐ C	☐ D
27	☐ A	☒ B	☐ C	☐ D
28	☐ A	☒ B	☐ C	☐ D

29	☐ A	☐ B	☒ C	☐ D
30	☐ A	☐ B	☐ C	☒ D
31	☒ A	☐ B	☐ C	☐ D
32	☐ A	☐ B	☐ C	☒ D
33	☐ A	☐ B	☐ C	☒ D
34	☐ A	☐ B	☐ C	☒ D
35	☒ A	☐ B	☐ C	☐ D
36	☐ A	☐ B	☒ C	☐ D
37	☐ A	☐ B	☐ C	☒ D
38	☐ A	☐ B	☒ C	☐ D
39	☒ A	☐ B	☐ C	☐ D
40	☐ A	☐ B	☒ C	☐ D