

PSYCHOLOGY

UNITS 3 & 4

Student name Student ID Letter

Structure of the trial examination

Section	Number of questions	Number of marks
A	40	40
B	7	80
	Total	120

- Students are permitted to bring into the trial examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring mobile phones and/or any other unauthorized electronic devices into the trial examination room.
- No calculators are allowed in this trial examination.

Materials supplied

- Questions of 29 pages
- Separate multiple-choice answer sheet.

Instructions

- Write your name and student number in the space provided on this page and on the multiple-choice answer sheet.
- Unless otherwise indicated, the diagrams in this trial examination are **not** drawn to scale.
- All written responses must be in English.

At the end of the trial examination

- Hand in your trial examination answers and your multiple-choice answer sheet.



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SECTION A: Multiple-choice questions

Instructions for Section A

Answer **all** questions in pencil on the answer sheet provided for Multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1; an incorrect answer scores 0.

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

No marks will be given if more than one answer is completed for any question.

Section A is worth 40 marks.

Question 1

The Somatic nervous system

- A. enables voluntary motor responses to occur.
- B. is involved in regulating visceral muscle responses that are vital for survival.
- C. activates internal muscles, organs, and glands to prepare the body for activity.
- D. regulates automatic functions such as heart rate and digestion.

Question 2

Which of the following paired options correctly outlines the differences between conscious and unconscious responses?

	Conscious response	Unconscious response
A.	Involves awareness and is generally more complex, involving a series of responses.	Does not involve awareness and is generally simpler, involving a single response to a stimulus.
B.	Does not involve awareness and is generally more complex, involving a series of responses.	Involves awareness and is generally simpler, involving a single response to a stimulus.
C.	Involves awareness and is generally simpler, involving a single response to a stimulus.	Does not involve awareness and is generally more complex, involving a series of responses.
D.	Can include involuntary functions, such as those regulated by the autonomic nervous system.	Does not involve decision or choice, however, can involve learning and complex responses.

Use the following information to answer Questions 3–6.

Erin is preparing for her final school exams. She finds herself increasingly stressed as the exam dates approach and she doubts her ability to demonstrate her knowledge. Erin has created detailed notes for each of her subjects, followed a study schedule and is a diligent and high-achieving student.

Question 3

Erin's primary appraisal of the upcoming exams is best described as

- A. a challenge that she feels she is prepared to overcome as she has detailed notes and has followed a study schedule.
- B. an irrelevant event that does not affect her as she has adequately prepared.
- C. a threat to her academic success due to self-doubt about her ability to demonstrate her knowledge.
- D. a loss as she has already suffered extreme stress in the build up to the examinations.

Question 4

Which of the following paired options describes the role of the parasympathetic and sympathetic nervous system during Erin's exams.

	Parasympathetic nervous system	Sympathetic nervous system
A.	Increases Erin's heart and breathing rate enabling her body to respond to the exam.	Helps Erin to relax as the exam progresses.
B.	Decreases Erin's heart rate and calms her nerves.	Triggers the release of adrenaline and increases Erin's alertness.
C.	Stimulates Erin's digestion during the exam to provide her energy to concentrate.	Lowers Erin's blood pressure during the exam so that she can concentrate.
D.	Promotes relaxation to reduce Erin's anxiety as she needs to concentrate.	Elevates Erin's blood pressure to prepare for the stressful situation.

Question 5

Erin's use of a study schedule is best described as

- A. an approach strategy with low context specific effectiveness because despite following a structured plan, Erin still feels stressed.
- B. an avoidance strategy with high context specific effectiveness as the study schedule helps her avoid last-minute cramming.
- C. demonstrating coping flexibility as she had adapted her study habits to create detailed notes and a study schedule thus adjusted her strategies as needed.
- D. an approach coping strategy with high context specific effectiveness as it provided structure to directly deal with the exams and manages her stress.

Question 6

In the build up to her final exams, it is likely that

- A. cortisol decreases in Erin's bloodstream, as her body adjusts to the stress and functions at a higher level.
- B. adrenaline increases and stays at a high level, keeping her constantly alert and ready to handle each of her exams.
- C. cortisol gradually increases over time, leading to prolonged stress responses that can impact her physical and mental health if not properly managed.
- D. all of Erin's bodily functions increase including improved metabolism and immune system function, as her body adapts positively to the stress.

Question 7

Which of the following statements best describes the impact of the gut microbiota on psychological processes and behaviour?

- A. The gut-brain connection is unidirectional, meaning that only the brain can send messages to the gut, affecting psychological processes and behaviour.
- B. A diverse gut microbiota is associated with greater levels of overall health, positively influencing psychological processes and behaviour, while dysbiosis can negatively impact these processes.
- C. The gut microbiota has no impact on psychological processes and behaviour, as these are solely controlled by the brain.
- D. An imbalance in gut bacteria is beneficial for psychological processes and behaviour because it increases the diversity of gut microbiota.

Use the following information to answer Questions 8 & 9.

Connor, a 16-year-old high school student, has decided to learn new tricks on his skateboard. He spends hours at the skate park each day practicing and notices gradual improvements in his skills.

Question 8

As Connor learns new skateboard tricks, which of the following best describes the role of neurotransmitters in his brain during this learning process?

- A. Excitatory neurotransmitters that are produced in the dendrites of the postsynaptic neurons are released enabling Connor to perform the new tricks.
- B. Excitatory neurotransmitters such as GABA increase the likelihood of the postsynaptic neurons firing so that Connor can perform the new tricks.
- C. Excitatory neurotransmitters are released from vesicles enabling Connor to strengthen his synaptic connections and improve his skateboarding skills.
- D. An increase of inhibitory neurotransmitters enhances the likelihood of the postsynaptic neurons firing an action potential, helping Connor learn the new tricks.

Question 9

Which of the following best describes a neural process taking place in Connor's brain as he continues to practise the new skateboarding tricks?

- A. Sprouting involves the elimination of unused synaptic connections to improve neural efficiency, allowing Connor to get better at performing the new tricks.
- B. Due to repeated activation rerouting occurs and synaptic connections associated with skateboarding are connected so that Connor can complete the new tricks.
- C. There is a reduction of neurotransmitters released in synapses, helping Connor to reduce neural activity and focus on the precise movements required for skateboarding.
- D. New dendritic spines and axon terminals develop increasing the strength of neural connections to enhance Connor's learning and memory of skateboarding tricks.

Question 10

Acute stress can be distinguished from chronic stress as

- A. acute stress involves only minor stresses and daily hassles while chronic stress involves major events that require significant change.
- B. acute stress activates the flight-fight-freeze response and chronic stress does not involve this immediate physiological reaction.
- C. acute stress does not significantly alter physiological function due to its immediate nature while chronic stress leads to long-term change in physiological function.
- D. acute stress typically triggers a temporary increase in stress hormones whereas chronic stress leads to prolonged elevation of these hormones.

Question 11

Which of the following correctly describes the three approaches to learning listed below?

	Behaviourist	Social-cognitive	Learning which situates the learning in a system
A.	Learning occurs by interacting with the external environment.	Learning takes place in social settings.	Knowledge and skills are based on interconnected social, physical and spiritual understandings.
B.	Learning involves observing others and modelling behaviours in social settings.	Learning occurs through reinforcement and punishment in a social context.	Learning is influenced by interconnected systems and informs identity.
C.	Learning is based on interconnected social, physical, and spiritual understandings.	Learning occurs by interacting with the external environment.	Learning involves cognitive processes in social settings.
D.	Learning is primarily about individual cognitive processes.	Learning occurs through classical conditioning.	Learning takes place through reinforcement and punishment in social systems.

Use the following information to answer Questions 12 & 13.

During her anthropological fieldwork in Australia, Lisa learns from an Indigenous elder named Yirra about the cultural importance of ‘songlines’. Yirra explains that these pathways are not only navigational but also convey the community’s stories through songs.

Question 12

Which of the following outlines the role of a brain structure involved in learning songlines?

	Structure	Role
A.	cerebellum	Consolidates long-term explicit memories including navigational routes and stories.
B.	amygdala	Integrates new information and known locations.
C.	neocortex	Stores the implicit information including dance moves associated with specific locations.
D.	hippocampus	Involved in spatial memory to allow navigation from place to place.

Question 13

Sung narratives such as songlines are used by oral cultures. Which of the following **incorrectly** describes a difference between written and oral cultures?

- A. Written cultures rely on visual symbols, while oral cultures emphasise auditory stories and written language.
- B. Written cultures prioritise individual authorship, while oral cultures emphasise communal storytelling.
- C. Oral language may be learnt with little explicit instruction whilst written language is generally learnt explicitly.
- D. Written cultures incorporate mnemonic devices based on written symbols and textual cues, while oral cultures rely on mnemonics such as songlines for communal and spoken storytelling.

Use the following information to answer Questions 14 & 15.

Lucy frequently misbehaves by throwing tantrums and refusing to follow instructions at home. Her parents decide to implement a time-out strategy. Each time Lucy misbehaves, she is placed in a designated time-out area for a few minutes. Over time, Lucy starts to misbehave less.

Question 14

Which of the following options correctly describes the phase process through which Lucy learns to behave?

- A. The neutral stimulus, time-out, is repeatedly paired with good behaviour, the unconditioned stimulus.
- B. The antecedent, being at home and asked to do something occurs prior to the behaviour of misbehaving resulting in the consequence of time-out.
- C. The consequence of not receiving free time increases over time because Lucy associates the antecedent of misbehaving with the removal of a pleasant activity.
- D. The behaviour of misbehaving decreases because Lucy is rewarded with extra playtime when she follows instructions.

Question 15

Which principle is being demonstrated?

- A. Positive reinforcement because Lucy is given a reward when she behaves well by not experiencing time-out.
- B. Negative reinforcement because Lucy's misbehaviour is being reduced by reducing an unpleasant stimulus.
- C. Positive punishment because an unpleasant stimulus, time-out is added to decrease Lucy's misbehaviour.
- D. Negative punishment because a pleasant stimulus, free time is taken away to decrease Lucy's misbehaviour.

Question 16

Which of the following statements accurately distinguishes between classical conditioning and operant conditioning?

- A. Both are behaviorist approaches and involve learning involuntary behaviours through the association of stimuli.
- B. Learners are passive during operant conditioning, whereas learners are active during classical conditioning.
- C. Both types of conditioning require multiple trials for learning to occur, but only classical conditioning involves consequences to reinforce behaviour.
- D. Operant conditioning involves learning a voluntary behaviour through consequences, whereas classical conditioning involves learning an involuntary behaviour through the association of stimuli.

Question 17

Which of the following best describes the two primary lesions associated with Alzheimer's disease and their impact on the brain?

- A. Amyloid plaques form within neurons and cause cell death, while neurofibrillary tangles form among axon terminals, inhibiting neural transmission.
- B. Amyloid plaques form among axon terminals, inhibiting neural transmission at the synapse, while neurofibrillary tangles are an abnormal build-up of protein within neurons that causes cell death.
- C. Amyloid plaques are a normal part of aging and have no impact on neural transmission, while neurofibrillary tangles inhibit synaptic transmission by blocking neurotransmitter release.
- D. Amyloid plaques and neurofibrillary tangles both form within the myelin sheath, causing demyelination and subsequent neuron death.

Question 18

Aphantasia impacts the recall of autobiographical memories and imagined futures by

- A. making it difficult to integrate episodic and semantic memories due to lack of visual imagery.
- B. allowing individuals to visualise episodic memories but making it difficult to recall semantic details.
- C. enabling individuals to construct detailed imagined futures but preventing the recall of past events.
- D. enhancing the recall of non-visual components of autobiographical memories while hindering the recall of sensory details.

Use the following information to answer Questions 19–23.

Thirty participants were recruited to participate in an experiment and presented with a list of 10 random words. After presenting the list, participants were asked to recall the words either immediately, after a 20-second delay during which they completed a distraction task, or after a 30-second delay with the same distraction task. The number of words each group accurately recalled was recorded.

Question 19

Based on the Atkinson-Shiffrin multi-store model of memory, which of the follow best explains the expected results of the experiment?

- A. Participants will recall the same number of words regardless of the delay as short-term memory is unaffected by distraction tasks.
- B. Participants will recall fewer words in the delay conditions as words are likely to be displaced when completing the distraction tasks.
- C. Participants will recall more words after the 30-second delay because the distraction tasks help to consolidate the words into long-term memory.
- D. Participants will recall fewer words immediately compared to the delayed recall because short-term memory improves with time and practise.

Question 20

Which of the following accurately identifies the independent variable, dependent variable and a potential confounding variable for the experiment?

	Independent variable	Dependent variable	Potential confounding variable
A.	The number of words recalled.	The type of distraction task.	The difficulty of the distraction task.
B.	The time delay before recall.	The number of words recalled.	The participants' prior memory ability.
C.	The number of words recalled.	The time delay before recall.	The participants' level of fatigue.
D.	Recalling immediately or following a delay.	The number of words recalled.	The number of words on the word list.

Question 21

Which type of memory are participants primarily using while recalling the words in this experiment?

- A.** Semantic memory because participants are recalling general knowledge or facts about the words.
- B.** Episodic memory because participants likely use personal experiences or events related to the words when encoding them.
- C.** Explicit memory because participants are consciously retrieving the list of words they were presented with.
- D.** Procedural memory because participants are recalling the words consciously when asked.

Question 22

Which of the following statements best explains the use of either the mean, median, or mode in analysing the data, and when the measure should be used?

- A.** The mean should be used when the data set has no outliers because it provides the average number of words recalled, giving a central tendency based on all data points.
- B.** Median should be used when the data set has extreme outliers or is skewed because it provides the middle value of the number of words recalled, offering a better central tendency that is not affected by outliers.
- C.** Mode should be used when researchers are interested in identifying the most frequently recalled number of words across participants, highlighting the most common performance level.
- D.** All of the above are correct, their use depends on the specific needs of the experiment.

Question 23

An error that could occur in this experiment is

- A. a personal error, if the experimenter counts the number of words recalled incorrectly or labels the recall times wrong.
- B. a measurement error resulting from the difference between the number of words recalled by participants and the true number of words on the list.
- C. a random error, if the experimenter consistently uses a faulty timer, causing all delay periods to be longer or shorter than intended.
- D. a systematic error due to variations in participant concentration levels, leading to unpredictable differences in the number of words recalled.

Use the following information to answer Questions 24 & 25.

Jamie, a 17-year-old Year 12 student, has been struggling with maintaining a consistent sleep schedule. Jamie often stays up late scrolling through social media, consumes caffeinated beverages in the evening and frequently takes long naps during the day.

Question 24

Which of the following best explains how Jamie's behaviours are likely affecting the function of the suprachiasmatic nucleus (SCN) and their sleep-wake cycle?

- A. Consuming caffeine in the evening probably directly increases melatonin levels, making Jamie feel more awake.
- B. Long daytime naps enhance the function of the SCN, helping regulate Jamie's sleep-wake cycle more effectively.
- C. Engaging in social activities late at night has no effect on the SCN's regulation of melatonin production.
- D. Exposure to light from social media screens at night likely stimulates the SCN, leading to reduced secretion of sleep-promoting hormones and difficulties in falling asleep.

Question 25

Jamie's behaviours are likely affecting their circadian and ultradian rhythms by

- A. stabilising the circadian rhythm through additional wakefulness and extending ultradian rhythms by lengthening NREM sleep stages with long daytime naps.
- B. disrupting the circadian rhythm by delaying melatonin production due to exposure to light and affecting ultradian rhythms by reducing the frequency of REM sleep cycles.
- C. strengthening the circadian rhythm by increasing wakefulness with caffeine and disrupting ultradian rhythms by decreasing the occurrence of NREM sleep.
- D. confusing the circadian rhythm through an irregular sleep schedule and maintaining ultradian rhythms.

Question 26

A psychological construct is

- A. a directly observable trait that can be easily measured using physical instruments such as an EEG, EOG or EMG to measure sleep.
- B. something that is known to exist but is difficult to measure due to its objective nature, for example mental wellbeing.
- C. a characteristic that is difficult to directly observe but can be inferred for example an individual's experience of a sleep episode.
- D. a trait that people either experience or do not experience such as Advanced Sleep Phase Disorder.

Use the following information to answer Questions 27–29.

Alex and Jordan are both final year university students facing the pressures of exams and job applications. Alex maintains a consistent study schedule, takes breaks to exercise and spends time with her friends and family. On the other hand, Jordan often feels overwhelmed by his workload and tends to isolate himself from social activities. He struggles to find motivation and frequently skips class due to extreme anxiety.

Question 27

Which of the following accurately describes Alex's and Jordan's experiences?

- A. Alex's consistent study schedule and exercise routine indicate high social wellbeing, while Jordan's frequent class skipping and isolation suggest low emotional wellbeing.
- B. Alex's high level of functioning is evident through her study habits, while Jordan's extreme anxiety and isolation indicate high mental wellbeing.
- C. Alex's balanced approach to her workload and social life indicates high emotional wellbeing, while Jordan's lack of motivation and class attendance suggest low social wellbeing.
- D. Alex's high level of functioning is evident through her study habits, while Jordan's extreme anxiety and isolation indicate low functioning and emotional wellbeing.

Question 28

Alex's level of resilience is best described as

- A. low, as she feels overwhelmed by exams and job applications but maintains a consistent study schedule to try and restore positive functioning.
- B. moderate, as she exercises and spends time with friends but still struggles to restore positive functioning under the pressure of exams and job applications.
- C. high, as she effectively manages a consistent study schedule, incorporates exercise breaks and maintains social connections, demonstrating her ability to cope with and manage change.
- D. fluctuating, as she balances some healthy habits with feelings of being overwhelmed by her workload, making it difficult to consistently overcome adversity.

Question 29

With reference to Jordan's situation, why is it important to consider mental wellbeing on a continuum?

- A. It assumes Jordan's mental wellbeing is fixed and unaffected by changes in his environment or internal state, disregarding factors like social isolation and anxiety.
- B. It allows external factors like social interactions and the pressures of exams to be considered alongside internal factors like stress and anxiety, acknowledging the complexity of his mental wellbeing.
- C. It assumes that Jordan's mental wellbeing fluctuates due to both internal factors like anxiety and stress response and external factors such as workload and social support, providing a comprehensive understanding of his mental state.
- D. It allows Jordan's mental wellbeing to be plotted and compared to others.

Question 30

How does the Social and Emotional Wellbeing (SEWB) framework for Aboriginal and Torres Strait Islander communities approach the concept of wellbeing?

- A. By focusing primarily on the physical and mental health of individuals, ensuring these areas are addressed separately.
- B. By adopting a holistic and multidimensional approach, integrating mental, physical, spiritual, and social aspects of wellbeing, considering their interconnectedness.
- C. By emphasizing the importance of social and spiritual wellbeing while minimizing the roles of physical and mental health.
- D. By using a linear model that sequentially addresses various aspects of wellbeing in isolation from each other.

Question 31

Which of the following is a characteristic shared by both stress and anxiety?

- A. Both are responses to known stimuli and involves both psychological and physiological changes.
- B. Both can be associated with positive emotions and thus classified as eustress.
- C. Both can be experienced in low and high levels of mental wellbeing, depending on the severity and length of time.
- D. Neither can be adaptive in the short term; they are therefore always maladaptive.

Use the following information to answer Questions 32 & 33.

Sophia suffers from a severe fear of butterflies, known as lepidopterophobia. This fear developed after a childhood incident where she was surrounded by a swarm of butterflies at a botanical garden. Sophia's parents have different approaches to her fear: her father tends to ignore her phobic reactions, believing that she will outgrow them, while her mother offers comfort and reassurance every time Sophia encounters a butterfly or even sees a picture of one. Sophia feels embarrassed about her fear and is reluctant to tell others.

Question 32

According to the biopsychosocial approach, which of the following factors accurately explains Sophia's phobia?

	Biological	Psychological	Social
A.	Enhanced emotional memory due to increased amygdala activity.	Perpetuation of phobia through classical conditioning.	Balanced parental reaction.
B.	Increased GABA is secreted.	Operant conditioning precipitates her butterfly fear.	The environmental trigger of butterflies.
C.	Enhanced synaptic transmission between the neural pathways of butterflies and fear.	Cognitive bias leads her to make inaccurate conclusions.	The stigma of seeking treatment.
D.	Inhibitory GABA is released.	Catastrophic thoughts that all gardens will have swarms of butterflies.	Supportive parental reactions.

Question 33

Which of the following accurately describes the roles of Sophia's parents in the maintenance of her phobia?

- A. Her mother's comfort acts as positive reinforcement, increasing Sophia's avoidance of butterflies, while her father's behaviour likely has no effect on the phobia.
- B. Both her mother's and father's reactions serve as negative reinforcement as Sophia does not experience the phobic reaction however her phobia is maintained.
- C. Her mother's comfort acts as positive punishment, increasing Sophia's fear of butterflies, while her father's behaviour serves as negative punishment.
- D. Her mother's comfort acts as positive reinforcement, increasing Sophia's avoidance of butterflies, while her father's behaviour serves as negative reinforcement.

Question 34

Protective factors in relation to mental wellbeing are best described as

- A. factors which guarantee that an individual will always maintain high levels of mental wellbeing, regardless of other influences.
- B. experiences that reduce the risk of low levels of mental wellbeing or developing a mental health disorder, thereby increasing the likelihood of high levels of mental wellbeing.
- C. factors that ensure that an individual will never experience any mental health challenges or disorders if they have many of these factors present.
- D. the only influences that determine an individual's level of mental wellbeing.

Question 35

Which of the following protective factors are correctly categorized as biological, psychological, and social?

	Biological	Psychological	Social
A.	adequate sleep and hydration	support from family, friends, and community	cognitive behavioural strategies to recognise and change dysfunctional thought and behaviour
B.	consuming a balanced diet	participating in meditation to promote relaxation and reduce stress	authentic support offered by family and friends
C.	low levels of GABA	knowledge of cognitive behavioural strategies	belonging to a social group such as a sports team or band
D.	regular exercise	encouragement from peers to engage in social and recreational activities	positive self-talk and maintaining a gratitude journal

Use the following information to answer Questions 36–40.

A study was conducted on 24 families who participated in a psychoeducation program designed to support a family member with a phobia. Half of the families received psychoeducation whilst the other half did not receive any psychoeducation. After eight weeks, the families' ability to support their family member was assessed using a standardized support effectiveness scale.

The results are shown below.

	Mean Support Effectiveness Score (out of 10)
Psychoeducation group	8.6
No Psychoeducation group	6.3

Question 36

Which of the following statements best describes the purpose and components of psychoeducation for families and supporters in the context of supporting a family member with a phobia?

- A. Psychoeducation aims to reduce phobic anxiety by providing information about mental disorders, by mainly focusing on medication management rather than cognitive and behavioural strategies.
- B. The main goal of psychoeducation is to offer immediate relief from phobic anxiety by encouraging avoidance behaviours, which are understood to minimize short-term stress for the individual with the phobia.
- C. Psychoeducation involves educating families and supporters about mental disorders to increase their understanding, with a focus on challenging unrealistic or anxious thoughts and discouraging avoidance behaviours that perpetuate the phobia.
- D. Psychoeducation provides families with relaxation techniques to use during phobic episodes and suggests avoiding discussion of the phobia to prevent triggering anxiety in the affected family member.

Question 37

Which of the following statements best describes the sample and population for this experiment?

- A. The sample consists of the 24 families who participated in the study, while the population includes all families supporting a member with a phobia.
- B. The sample includes families who received psychoeducation, while the population encompasses only those who did not receive psychoeducation.
- C. The sample is representative of families with a history of participating in psychoeducation programs, and the population includes all families in the study.
- D. The sample is composed of families who did not receive any psychoeducation, whereas the population consists of all families dealing with phobias, regardless of psychoeducation participation.

Question 38

Which of the following best describes the impact of psychoeducation on families supporting a family member with a phobia as seen by the results?

- A. The higher mean support effectiveness score in the psychoeducation group suggests that psychoeducation only benefits families with prior knowledge about phobias.
- B. The results indicate that psychoeducation had a marginal impact on support effectiveness, with only a slight increase in the mean support effectiveness score compared to the no psychoeducation group.
- C. Psychoeducation improved the support effectiveness of families, as indicated by the higher mean support effectiveness score in the psychoeducation group compared to the no psychoeducation group.
- D. Psychoeducation did not have a lasting impact on support effectiveness, as the mean support effectiveness score in the psychoeducation group is only slightly higher than that of the no psychoeducation group.

Question 39

Why would providing a prior measurement before the intervention and then using a measure of percentage change improve the experiment?

- A. This would allow the experimenter to consider variation within each group, as support scores might be very different between families.
- B. Percentage change allows the degree of change in a value, in this case support effectiveness to be considered whilst accounting for initial differences between groups.
- C. This would allow standardised scores to be calculated so that comparisons can easily be made.
- D. This would reduce the influence of participant related extraneous variables as it eliminates all individual differences.

Question 40

To consider the internal and external validity respectively the experimenters must

- A. ensure that the study controls for possible confounding variables; determine how well the results can be generalised to all families supporting a member with a phobia.
- B. verify that the standardised support effectiveness scale accurately measures what it is intended to within the sample; compare the results with those from other similar studies to check for consistency.
- C. Assess the generalisability of the study's results to the broader population; ensure that the study was conducted and controlled well within the sample of 24 families.
- D. Evaluate the representativeness of the sample to the general population; eliminate bias and confounding variables within the psychoeducation group.

END OF SECTION A

SECTION B

Instructions for Section B

Answer **all** questions in the spaces provided.
Use the command / task words, other instructional information within questions and corresponding mark allocations to guide the content and length of your responses.
Section B is worth 80 marks.

Question 1 (9 marks)

After watching her beloved grandmother make her famous spaghetti bolognese many times and imagining herself successfully making it, Jessica decides to try making it herself. Her grandmother had recently passed away and Jessica has many fond memories of spending time in the kitchen with her. While preparing the dish for the first time, Jessica accidentally burnt her hand on the hot pan and dropped it.

- a.** Identify which subdivision of the peripheral nervous system is responsible for Jessica dropping the pan and explain the sequence of biological processes that occur.

(5 marks)

- b.** Outline the involvement of **two** types of memory Jessica uses to imagine herself successfully making the spaghetti bolognaise.

(2 marks)

- c. Identify and explain **two** different processes involved in observational learning that demonstrate the advantage of Jessica's grandmother being the model.

(2 marks)

Question 2 (15 marks)

Francesca has recently moved away from her hometown to start university in Melbourne. She is excited about her new independence and the opportunity to pursue her passion in Environmental Science. However, the transition has been more challenging than she anticipated. Francesca feels stressed by the heavy course load, the need to make new friends and adjusting to life in a shared apartment. To manage her stress Francesca has joined a study group, where she has learnt many new study techniques and made friends. She has also signed up for weekly yoga classes.

- a. With reference to Lazarus and Folkman’s Transactional Model of Stress and Coping, identify the most likely secondary appraisal made by Francesca and justify your response.

(2 marks)

- b. Explain which stage of Selye’s General Adaptation Syndrome Francesca was in when she joined the study group and signed up for weekly yoga classes and outline the role of one relevant hormone.

(3 marks)

- c. Using Francesca’s situation, distinguish between internal and external stressors.

(2 marks)

- d.** As part of her yoga class, Francesca engaged in mindfulness meditation. Outline what is involved in this practise and suggest **two** benefits.

(3 marks)

- e.** Outline how long-term depression was involved in Francesca’s ability to use the new study techniques and adapt to her challenging academic environment.

(3 marks)

- f.** With reference to Francesca’s learning of the new study techniques, explain the role of **two** brain areas involved in memory.

(2 marks)

Question 3 (16 marks)

Dopamine Neuron Transplantation and its Effects on Parkinson’s Disease Symptoms: A Controlled Study

In 2001, Freed and colleagues conducted a study to investigate the effects of dopamine on the behavioural symptoms of Parkinson’s disease. The study involved 40 patients with severe Parkinson’s disease, with a mean disease duration of 14 years, aged between 34 to 75 years. Using a between subjects’ design, the experimental group received transplants of dopamine-producing neurons from aborted embryos into their brain, while the control group underwent sham surgery. Patients were monitored for one year using PET scans, clinical observations, and interviews. Results showed a 28% reduction in Parkinson’s symptoms observed in patients younger than 60 years in the transplant group.

Source: Freed CR, Greene PE, Breeze RE, Tsai WY, DuMouchel W, Kao R, Dillon S, Winfield H, Culver S, Trojanowski JQ, Eidelberg D, Fahn S. Transplantation of embryonic dopamine neurons for severe Parkinson’s disease. *N Engl J Med.* 2001 Mar 8;344(10):710-9. doi: 10.1056/NEJM200103083441002. PMID: 11236774.

a. Identify the independent and dependent variables in the study outlined above.

Independent variable	
Dependent variable	

(2 marks)

b. Identify the research methodology used in this investigation and justify your response.

(2 marks)

c. Outline how the ethical concepts of beneficence and non-maleficence may have been considered in the context of the sham surgeries performed on the control group in this study.

(4 marks)

- d.** PET scans, clinical observations and interviews were used to collect data. Suggest how these methods contribute to the internal validity of the study.

(3 marks)

- e.** List **two** roles of the neurochemical dopamine.

(2 marks)

- f.** Dopamine is a neuromodulator. Outline **two** similarities and **one** difference between neurotransmitters and neuromodulators.

(3 marks)

Question 4 (5 marks)

Every evening, before bedtime, Sarah’s mother reads her a story while playing a gentle lullaby in the background. Over time, Sarah begins to associate the soothing lullaby with the comforting bedtime routine. Now, even hearing the lullaby during the day induces a sense of relaxation in Sarah.

Name the behaviourist approach to learning that is discussed in this scenario and outline the three-phase process through which Sarah learnt to relax.

(5 marks)

Question 5 (19 marks)

A sleep study was conducted using twenty participants, ten aged 37 years old and ten aged 17 years old. The researchers noted several measurements for each participant over a week including their mean sleep time in 24 hours and the mean and standard deviation for each age group. The participants also completed a sleep diary.

The findings are displayed below.

Participants aged 37 years		Participants aged 17 years	
Participant	Mean sleep time in 24 hrs	Participant	Mean sleep time in 24 hrs
1	9.6	11	7.2
2	7.6	12	8.3
3	8.5	13	2.1
4	10.4	14	13.4
5	9.8	15	3.1
6	5.5	16	6.0
7	8.4	17	10.0
8	6.8	18	4.8
9	6.8	19	5.3
10	7.6	20	5.8
Standard deviation	1.5	Standard deviation	3.3
Mean	8.1	Mean	6.6

- a. Compare the mean sleep times of the 37-year-old and 17-year-old participants. Does this align with research on sleep requirements across different life stages?

(3 marks)

- b. Identify the experimental design used and justify your response.

(2 marks)

c. Explain what the standard deviation of each age group suggests about the sleep patterns of the participants.

(2 marks)

d. Participants 13 and 15 are obtaining less sleep than the other participants in their age group. Suggest one behavioural and one cognitive outcome they may experience as a result.

(2 marks)

e. Compare the affective effects on functioning that result from sleep deprivation with those of having an increased blood alcohol concentration (BAC).

(3 marks)

f. Describe what an EEG reading might look like during a typical night's sleep for a 17-year-old participant.

(4 marks)

- g.** After analysing the sleep diary of Participant 6, researchers suspect Delayed Sleep Phase Syndrome.

Outline what this involves and how Bright Light Therapy could be used as a treatment.

(3 marks)

Question 6 (6 marks)

Aiden, a 16-year-old indigenous student from a remote community in the Northern Territory, has been offered a scholarship to attend a prestigious boarding school. In his home community, Aiden has strong connections with his elders who teach him traditional knowledge, language and cultural practices including songlines. These connections are a vital part of his identity and although he is excited about the opportunity to pursue his education, he is worried about leaving these behind for a period.

- a.** Explain the importance of cultural continuity for the maintenance of wellbeing in Aboriginal and Torres Strait Islander peoples. How might Aiden’s attendance at boarding school impact his cultural continuity?

(3 marks)

- b.** Aiden learns songlines from the elders in his community. Explain how these function as a mnemonic device to enhance encoding and retrieval.

(3 marks)

STAV 2024

PSYCHOLOGY Units 3 & 4 Trial Examination MULTIPLE CHOICE ANSWER SHEET

STUDENT NAME:	
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INSTRUCTIONS:	USE PENCIL ONLY
<ul style="list-style-type: none">• Write your name in the space provided above. Use a PENCIL for ALL entries.• If you make a mistake, ERASE it – DO NOT cross it out.• Marks will NOT be deducted for incorrect answers.• NO MARK will be given if more than ONE answer is completed for any question.• Mark your answer by SHADING the letter of your choice.	

ONE ANSWER PER LINE					ONE ANSWER PER LINE					ONE ANSWER PER LINE				
1	A	B	C	D	15	A	B	C	D	29	A	B	C	D
2	A	B	C	D	16	A	B	C	D	30	A	B	C	D
3	A	B	C	D	17	A	B	C	D	31	A	B	C	D
4	A	B	C	D	18	A	B	C	D	32	A	B	C	D
5	A	B	C	D	19	A	B	C	D	33	A	B	C	D
6	A	B	C	D	20	A	B	C	D	34	A	B	C	D
7	A	B	C	D	21	A	B	C	D	35	A	B	C	D
8	A	B	C	D	22	A	B	C	D	36	A	B	C	D
9	A	B	C	D	23	A	B	C	D	37	A	B	C	D
10	A	B	C	D	24	A	B	C	D	38	A	B	C	D
11	A	B	C	D	25	A	B	C	D	39	A	B	C	D
12	A	B	C	D	26	A	B	C	D	40	A	B	C	D
13	A	B	C	D	27	A	B	C	D					
14	A	B	C	D	28	A	B	C	D					