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Write your **student number** in the boxes above.

**Letter**

# Psychology

## Question and Answer Book

VCE Examination – Friday 31 October 2025

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- Reading time is **15 minutes**: 9.00 am to 9.15 am
- Writing time is **2 hours 30 minutes**: 9.15 am to 11.45 am

### Materials supplied

- Question and Answer Book of 36 pages
- Multiple-Choice Answer Sheet

### Instructions

- Follow the instructions on your Multiple-Choice Answer Sheet.
- At the end of the examination, place your Multiple-Choice Answer Sheet inside the front cover of this book.

Students are **not** permitted to bring mobile phones and/or any unauthorised electronic devices into the examination room.

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Contents	pages
<b>Section A</b> (40 questions, 40 marks) _____	2–17
<b>Section B</b> (9 questions, 80 marks) _____	18–33
<b>Assessment criteria for Section B</b> _____	35

## Section A – Multiple-choice questions

### Instructions

- Answer **all** questions in pencil on your Multiple-Choice Answer Sheet.
  - 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.
  - Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.
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### Use the following information to answer Questions 1–5.

A study explored which paper-folding techniques are more easily learnt by four-year-old children. Researchers observed 30 children in their kindergarten classrooms while the children folded paper. During the study, a piece of paper cuts a child's finger and the child quickly withdraws their hand.

#### Question 1

When the children are folding paper, their brains release a neurochemical that is involved in learning. This neurochemical is most likely

- A. GABA, as it causes feelings of wakefulness.
- B. glutamate, as it prepares the body for action.
- C. GABA, as it is the main excitatory neurotransmitter.
- D. glutamate, as it helps strengthen synaptic connections.

#### Question 2

The memory of the fine motor skills required for paper-folding is stored in the

- A. neocortex, because this is a semantic memory.
- B. cerebellum, because this is an implicit memory.
- C. basal ganglia, because this is an explicit memory.
- D. hippocampus, because this is a procedural memory.

#### Question 3

Which one of the following best describes the role of interneurons when the child withdrew their hand?

- A. detecting harmful stimuli in the environment
- B. transmitting motor messages by travelling to the cut site
- C. sending information to the brain after the hand is withdrawn
- D. relaying information between sensory neurons and motor neurons

**Question 4**

Which one of the following explains how quickly the child withdraws their hand from the paper?

- A. It is a survival response that does not involve the brain.
- B. It is an automatic response that does not involve sensory neurons.
- C. It is a voluntary response carried out independently by the spinal cord.
- D. It is an involuntary response that involves the neuron travelling a short distance.

**Question 5**

Which one of the following most accurately identifies the investigation methodology used in this study and one of its possible limitations?

	<b>Investigation methodology</b>	<b>Limitation</b>
<b>A.</b>	simulation	time required to observe the children
<b>B.</b>	system development	the short attention span of four-year-olds
<b>C.</b>	fieldwork	controlling the presence of extraneous variables in the classroom
<b>D.</b>	classification	inaccuracy when grouping the paper-folding techniques

**Use the following information to answer Questions 6–9.**

A recent study investigated the effects of dark chocolate consumption on mood and gut microbiota diversity over a three-week period. Participants were allocated to one of three groups.

Group 1 – Participants consumed no dark chocolate.

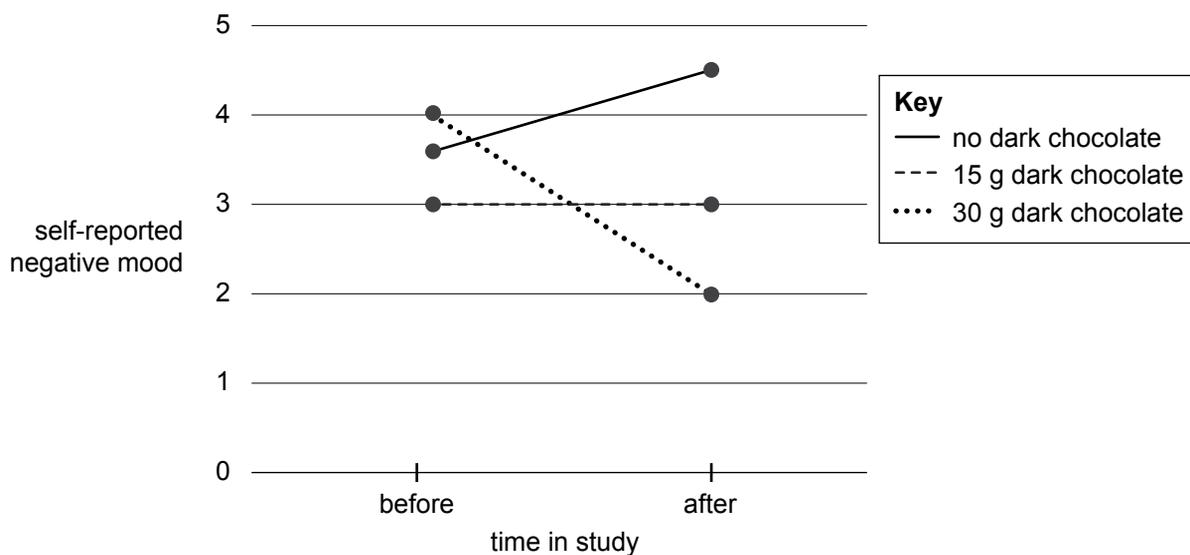
Group 2 – Participants consumed 15 g of dark chocolate per day.

Group 3 – Participants consumed 30 g of dark chocolate per day.

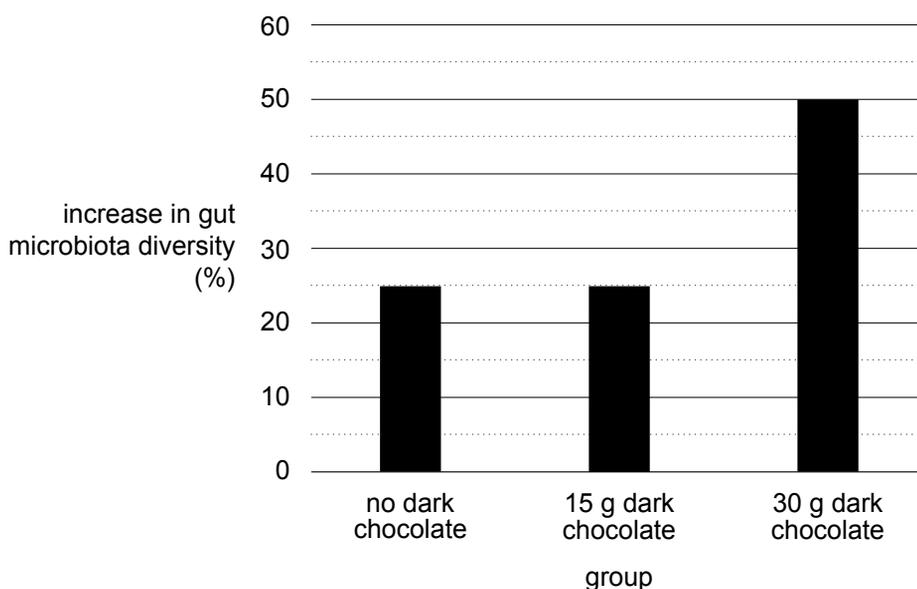
Analysis of gut microbiota and a self-reported negative mood scale (where a score of 5 indicates a more negative mood) were completed before and after the three-week study.

The results of this study are summarised in the graphs below.

**Graph 1**



**Graph 2**



Source: Adapted from JH Shin, CS Kim, J Cha, S Kim, S Lee, S Chae, WY Chun and DM Shin, *The Journal of Nutritional Biochemistry*, 99, 108854, 2022, <<https://doi.org/10.1016/j.jnutbio.2021.108854>>

**Question 6**

The experimental design used in this study is a

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

**Question 7**

Why did the researchers analyse participants' gut microbiota before the study began?

- A. to provide a control group
- B. to provide a controlled variable
- C. to provide a confounding variable
- D. to provide a baseline for comparison

**Question 8**

Consider the following conclusions.

Conclusion 1 – Consumption of 30 g of dark chocolate is associated with improved gut microbiota diversity.

Conclusion 2 – The gut–brain axis explains how the consumption of dark chocolate improves mood.

Conclusion 3 – Consumption of 15 g or 30 g of dark chocolate can increase negative mood over time.

The results of the study allow the researchers to draw which of the following?

- A. conclusion 1 only
- B. conclusion 3 only
- C. conclusions 1 and 2 only
- D. conclusions 1 and 3 only

**Question 9**

Which of the following best describes the data collected during this study?

- A. primary and qualitative
- B. primary and quantitative
- C. secondary and qualitative
- D. secondary and quantitative

**Question 10**

When rushing to class, a student falls over.

According to the General Adaptation Syndrome (GAS) model, which one of the following best identifies the stage and the resistance to stress when this student first loses balance?

	Stage	Resistance to stress
A.	alarm reaction (shock)	above normal
B.	alarm reaction (shock)	below normal
C.	alarm reaction (counter shock)	below normal
D.	alarm reaction (counter shock)	above normal

**Use the following information to answer Questions 11 and 12.**

Mindfulness meditation can help to manage stress resulting from chronic health challenges such as pain and fatigue. Researchers are attempting to link mindfulness meditation to the GAS model. They suggest that people practising mindfulness meditation can:

- acknowledge the physiological stress response as it happens, with awareness of the mind and body
- engage in acceptance, investigating their thoughts and the sensations of the stress response with curiosity.

Source: Adapted from JG Prather, B Baughman, AW Alexandrov and AG Stanfill, 'A conceptual model of the influence of mindfulness-based interventions on stress and quality of life in patients with chronic conditions', *Holistic Nursing Practice*, 36(2), pp. 67–75, 2022, <<https://doi.org/10.1097/HNP.0000000000000500>>

**Question 11**

Mindfulness meditation can help individuals cope with stress.

The researchers could link this to the GAS model because mindfulness meditation can

- A. accelerate the transition into the exhaustion stage.
- B. eliminate the physiological responses in the alarm reaction stage.
- C. cause cortisol levels to fall below normal during the resistance stage.
- D. draw attention to the physiological stress response during the alarm reaction stage.

**Question 12**

Linking mindfulness meditation to the GAS model may improve the explanatory power of the GAS model by

- A. recognising the relationship between chronic stress and illness.
- B. proposing that physiological stress responses vary between individuals.
- C. recognising the psychological processing involved in the stress response.
- D. focusing on cognitive processes rather than physiological variations in the stress response.

**Use the following information to answer Questions 13–16.**

An experiment tested whether playing calming music can reduce the stress experienced by cows when a human approaches them. After many trials, the presence of a human had a calming effect on the cows.

**Question 13**

According to behaviourist approaches, when should the calming music be played to improve the cows' chances of learning?

- A. It should be played at all times.
- B. It should start playing while a human approaches.
- C. It should be played directly after the cows see a human.
- D. It should start playing directly before the cows see a human.

**Question 14**

Which of the following correctly classifies the calming music and the presence of a human after conditioning?

	Calming music	Presence of a human
A.	positive reinforcement	antecedent
B.	conditioned stimulus	neutral stimulus
C.	unconditioned stimulus	conditioned stimulus
D.	neutral stimulus	unconditioned stimulus

**Question 15**

Using your knowledge of brain regions, which area is most likely involved with learning the decreased stress response?

- A. amygdala
- B. neocortex
- C. cerebellum
- D. basal ganglia

**Question 16**

As part of the study, the researchers measured the cows' pupil dilation when a human moved towards them.

Why would the researchers measure pupil dilation?

- A. It is a reflexive response controlled by the spinal cord in response to stress.
- B. It is part of the freeze response, which is activated by the somatic nervous system.
- C. It is part of the flight-or-fight response, which is activated by the sympathetic nervous system.
- D. It is a conscious response to let more light in so that the brain can coordinate its response to stress.

**Question 17**

Students are not allowed to chew gum on school grounds. Every time they do, they receive a verbal warning from a teacher. This is generally ineffective and stressful.

According to behaviourist approaches, which of the following correctly identifies two phases when students learn not to chew gum?

	Antecedent	Behaviour
A.	classroom	increased heart rate
B.	chewing gum	verbal warning
C.	school grounds	not chewing gum
D.	verbal warning	chewing gum

**Question 18**

Which one of the following Indigenous Australian practices could be used to research Aboriginal and Torres Strait Islander ways of knowing?

- A. modelling
- B. yarning circles
- C. navigational tracks
- D. relationships with people

**Use the following information to answer Questions 19–21.**

Biological changes during pregnancy may trigger sleep disordered breathing (SDB), which may lead to sleep disturbances such as snoring.

A literature review revealed that most studies that explored the diagnosis of SDB during pregnancy were based on questionnaires. The best way to diagnose SDB involves comprehensive measurements, including video monitoring, during overnight laboratory sleep studies. However, staying overnight is not always practical.

The review found that portable recording devices enable home-based sleep monitoring, which may allow early diagnosis of SDB.

Source: Adapted from N Balkan, M Çavuşoğlu and R Hornung, 'Application of portable sleep monitoring devices in pregnancy: a comprehensive review', *Physiological Measurement*, 45(5), 2024, <<https://iopscience.iop.org/article/10.1088/1361-6579/ad43ad>>

**Question 19**

The purpose of the literature review carried out by the researchers was to

- A. construct a model for the diagnosis of SDB.
- B. provide an overview of how SDB may be diagnosed.
- C. observe and interact with participants undertaking an overnight sleep study.
- D. present new research about portable recording devices that allow diagnosis of SDB.

**Question 20**

In one of the studies analysed by the researchers, a questionnaire asked participants to rate their chance of falling asleep on a five-point scale.

Which of the following lists a strength of the questionnaire's data in diagnosing SDB and a limitation of administering the questionnaire?

	<b>Strength of data</b>	<b>Limitation of questionnaire</b>
<b>A.</b>	data can be easily summarised	low repeatability
<b>B.</b>	accuracy of data obtained is high	low internal validity
<b>C.</b>	data is collected for the specific purpose of diagnosing SDB	high reproducibility
<b>D.</b>	data obtained will be highly detailed	data is difficult to summarise

**Question 21**

The following statements relate to overnight laboratory sleep studies and portable sleep-monitoring devices.

Statement 1 – Comprehensive measurements including video monitoring are typically used during overnight laboratory sleep studies to diagnose SDB.

Statement 2 – Sleep varies from day to day and the use of portable devices means pregnant women's sleep can be monitored at home over multiple days.

Statement 3 – An overnight sleep study records a single-night snapshot of an individual during their pregnancy, which means data cannot be analysed.

Which of the following is correct?

- A.** statement 1 only
- B.** statements 1 and 2 only
- C.** statements 2 and 3 only
- D.** statements 1, 2 and 3

**Use the following information to answer Questions 22–24.**

Researchers conducted a study to compare the effects of a single night of partial sleep deprivation (less than five hours of sleep) to no sleep deprivation (eight hours of sleep) on participants' performance in a driving simulator. The results showed that a night of partial sleep deprivation had an impact on behavioural measures of sleepiness.

Source: Adapted from: N Cellini, G Bruno, F Orsini, G Vidotto, M Gastaldi, R Rossi and M Tagliabue, *International Journal of Environmental Research and Public Health*, 20(5), 4003, 2023, <<https://doi.org/10.3390/ijerph20054003>>

**Question 22**

The results of this study would show that participants with a night of partial sleep deprivation have

- A. increased motor control.
- B. impaired decision-making.
- C. a higher percentage of eye closure.
- D. a decrease in their ability to concentrate.

**Question 23**

The data from the driving simulator has been shown to be valid in several road safety studies.

This means

- A. the data is precise.
- B. outliers have been removed from the dataset.
- C. the results of the research can be applied to all adults.
- D. the data is appropriate to assess the effects of sleep deprivation.

**Question 24**

Researchers want to extend the current study to compare the equivalent effects of one night of full sleep deprivation and blood alcohol concentration (BAC) on mood.

Which one of the following research questions would be most suitable?

- A. How do attention levels compare between individuals with a BAC of 0.05 and those experiencing a night of full sleep deprivation?
- B. How do levels of irritability compare between individuals with a BAC of 0.05 and those experiencing a night of full sleep deprivation?
- C. How does problem-solving ability compare between individuals with a BAC of 0.10 and those experiencing a night of full sleep deprivation?
- D. How do levels of emotional regulation compare between individuals with a BAC of 0.10 and those experiencing a night of full sleep deprivation?

**Use the following information to answer Questions 25–28.**

Researchers reviewed the effectiveness of bright light therapy to improve the sleep of people aged over 65 years in residential long-term care. They concluded that the effectiveness of bright light therapy in long-term care settings may be affected by both the time at which the therapy is administered and the length of intervention.

**Question 25**

Which of the following uses of bright light therapy would be most effective in treating Advanced Sleep Phase Disorder?

	<b>Time of intervention</b>	<b>Length of intervention (per day)</b>
<b>A.</b>	evening (between 7.00 pm and 9.00 pm)	30 minutes for four weeks
<b>B.</b>	early morning (between 5.00 am and 7.00 am)	10 minutes for one week
<b>C.</b>	evening (between 7.00 pm and 9.00 pm)	10 minutes for one week
<b>D.</b>	early morning (between 5.00 am and 7.00 am)	30 minutes for four weeks

**Question 26**

Artificial lighting is used in residential long-term care settings because natural light levels change throughout the day.

This may improve the circadian rhythm of residents because

- A.** it will help lengthen their sleep–wake cycle.
- B.** when the eyes detect more light, inhibitory messages reduce feelings of drowsiness.
- C.** the decline in NREM Stage 3 sleep often experienced by older adults will be reversed.
- D.** it will reduce the number of night-time awakenings due to decreased secretion of melatonin.

**Question 27**

Older adults in residential long-term care are often looked after by adult shift workers.

Which one of the following statements is correct?

- A.** Shift work is a type of internal stressor that can lead to excessive sleepiness at work and impaired sleep at home.
- B.** An individual with a sleep disorder caused by shift work cannot adjust their ultradian rhythm by using bright light therapy.
- C.** Shift work is a type of circadian rhythm sleep disorder characterised by a delay in the timing of sleep onset and awakening.
- D.** A sleep disorder is less likely to be diagnosed when a person works mostly night shifts compared to alternating day and night shifts.

**Question 28**

The researchers recommended some sleep hygiene practices specifically for night shift workers.

Which one of the following recommendations would be considered **least** effective?

- A. Avoid caffeine in the evening as it disrupts sleep.
- B. Make sleep a priority by rescheduling social activities.
- C. Consistently engage in activities that aid relaxation before bedtime.
- D. Drink an appropriate amount of water to maintain hydration, but avoid too much fluid before bed.

**Question 29**

Which one of the following statements is true regarding the suprachiasmatic nucleus (SCN)?

- A. It is part of the pineal gland.
- B. It uses daylight to reset every 24 hours.
- C. It is part of the sympathetic nervous system.
- D. It operates independently on an ultradian rhythm.

**Use the following information to answer Questions 30–33.**

A study was conducted to develop a culturally specific program aimed at strengthening the social and emotional wellbeing (SEWB) of Aboriginal communities. The study was led by Aboriginal researchers and involved community consultations when developing the program.

The program developed was then implemented in multiple communities and evaluated. The findings from the evaluation showed a strong correlation between self-determination and improved mental wellbeing outcomes, indicating that culturally specific programs likely enhanced SEWB.

Source: Adapted from P Dudgeon, KL Derry, C Mascall and A Ryder, 'Understanding Aboriginal models of selfhood: The National Empowerment Project's Cultural, Social, and Emotional Wellbeing Program in Western Australia', *International Journal of Environmental Research and Public Health*, 19(7), 4078, 2022, <<https://doi.org/10.3390/ijerph19074078>>

**Question 30**

Community consultations improved the program because they

- A. reduced isolation between participants in the program.
- B. ensured positive relationships between all participants.
- C. recognised the unique views of members of multiple communities.
- D. ensured all members of the community agreed on all elements of the SEWB framework.

**Question 31**

Why did the researchers implement the program in multiple communities?

- A. to increase repeatability as Aboriginal communities share similar needs
- B. to increase external validity by recognising cultural and regional differences between communities
- C. to improve internal validity by identifying consistent wellbeing outcomes that apply to Aboriginal communities
- D. to control for extraneous variables, including cultural uniqueness, so that wellbeing outcomes would be relevant to all communities

**Question 32**

Cultural determinants of wellbeing were represented in the program's development.

In this way the program

- A. incorporates consultations but does not prioritise self-determination.
- B. limits cultural continuity by acknowledging different ways of knowing.
- C. aligns with cultural norms and values, addressing cultural determinants of kinship and community.
- D. empowers community members to take ownership through decision-making, supporting self-determination.

**Question 33**

Consider the following statements.

Statement 1 – Self-determination causes improvements in mental wellbeing outcomes.

Statement 2 – There is a relationship between self-determination and mental wellbeing.

Statement 3 – No cause-and-effect relationship exists between self-determination and mental wellbeing.

Based on the findings of the evaluation, which of the following is supported?

- A. statement 1 only
- B. statement 2 only
- C. statements 1 and 2 only
- D. statements 2 and 3 only

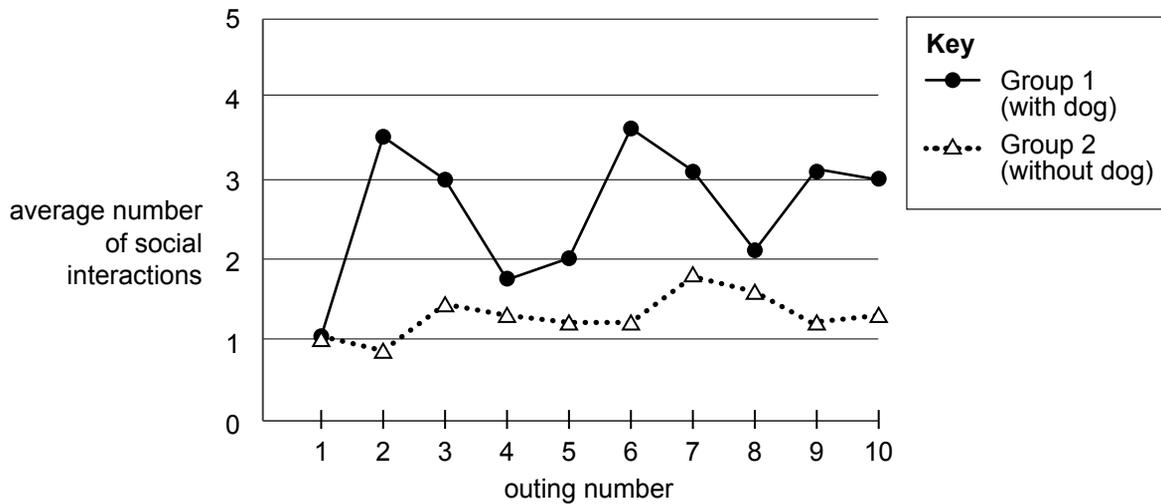
**Question 34**

Which one of the following accurately distinguishes between stress and anxiety?

- A. Stress generally influences affective functions, while anxiety influences cognitive processes.
- B. Stress only activates the flight-or-fight response, while anxiety only activates the freeze response.
- C. Stress arises from internal or external challenges, while anxiety arises from apprehension about potential threats.
- D. Stress is likely to have short-term psychological impacts, while anxiety has less significant long-term physiological impacts.

**Use the following information to answer Questions 35–37.**

A study investigated the effectiveness of a dog-walking program to increase the social interactions of people with intellectual disabilities. Participants attended community outings with either another person and a dog (Group 1) or another person without a dog (Group 2). The number of social interactions was recorded, with some of the results shown in the figure below.



Source: Adapted from E Bould, C Bigby, PC Bennett and TJ Howell, *Journal of Intellectual Disability Research*, 62, 833–841, 2018, <<https://doi.org/10.1111/jir.12538>>

**Question 35**

Why did the researchers choose to represent the data in a line graph instead of a bar chart?

- A. The independent variable is categorical.
- B. Each outing occurred on a separate day.
- C. The researchers wanted to track the data over time.
- D. The number of social interactions can be easily counted.

**Question 36**

How might the benefits of the dog-walking program be explained by the biopsychosocial approach to mental wellbeing?

	Biological	Psychological	Social
A.	increased physical activity	improved confidence	opportunities for interactions
B.	increased emotional functioning	reduced loneliness	enhanced resilience
C.	reduced physiological arousal	improved coping strategies	opportunity for teamwork
D.	improved physical fitness	increased emotional functioning	improved confidence

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**Question 37**

What might a future study suggest about the influence of internal and external factors on mental wellbeing?

- A.** The internal factors are static and therefore will not be affected by dog-walking.
- B.** Internal factors (such as confidence) do not affect external factors (such as physical fitness).
- C.** Internal factors (such as support from another person) may increase social encounters that facilitate external factors (such as emotional functioning).
- D.** External factors (such as the presence of a dog) create opportunities for interaction that are influenced by internal factors (such as emotional functioning).

**Use the following information to answer Questions 38–40.**

Systematic desensitisation, used for specific phobias, involves the creation of a fear hierarchy. An example of a fear hierarchy is shown below, where a low rating indicates a less fearful scenario.

Scenario	Fear rating
Think about a magpie.	10
Look at a photograph of a magpie.	25
Look at a fake magpie.	30
Be in the same outdoor area as a magpie.	50
Be in the same indoor room as a magpie.	90

**Question 38**

What does the fear rating suggest about each scenario listed in the fear hierarchy?

- A. The fear rating also equals the time (in minutes) it would take to eliminate a fear response.
- B. A voluntary flight-or-fight response would be activated only once the fear rating reaches 50.
- C. The fear rating demonstrates the severity of the conditioned response associated with the scenario.
- D. Being in the same indoor room as a magpie would require more positive reinforcement than thinking about a magpie.

**Question 39**

Which one of the following accurately explains a factor that might contribute to the development of a phobia of magpies?

- A. Increased levels of GABA make the fear response to magpies greater.
- B. A direct encounter with an aggressive magpie causes an extreme fear response.
- C. Magpies are an unconditioned stimulus associated with an unconditioned response of extreme fear.
- D. Increased glutamate levels make postsynaptic neurons less likely to fire, strengthening the association between magpies and fear.

**Question 40**

According to the Atkinson-Shiffrin multi-store model of memory, which one of the following best explains how the fear response to magpies is reduced in each scenario of the fear hierarchy?

- A.** Through the process of attention, the fearful scenario is encoded, stored and retrieved by multiple memory stores.
- B.** Each scenario is gradually linked to memories of other birds stored in long-term memory and these memories trigger a relaxation response.
- C.** For each scenario, a fearful memory of the magpie is retrieved into long-term memory, where the fearful memory is weakened through repeated rehearsal.
- D.** The scenario is registered by the sensory memory system, then transferred to short-term memory, before being combined with knowledge from long-term memory on how to relax.

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## Section B

### Instructions

- Answer **all** questions in the spaces provided.
  - Write your responses in English.
  - Unless otherwise indicated, the diagrams in this book are **not** drawn to scale.
  - Your response to Question 9 will be assessed according to the criteria set out on page 35.
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### Question 1 (6 marks)

Thermoregulation allows the human body to keep its temperature within a certain range, even if the temperature of the external environment is very different. The human nervous system uses thermoreceptors, which are a type of sensory neuron in the peripheral nervous system, to detect changes in temperature. The body can then respond to these temperature changes through conscious and unconscious responses to promote survival.

- a. i. Provide an example of both a conscious and unconscious response in a high-temperature environment. 2 marks

Conscious \_\_\_\_\_

\_\_\_\_\_

Unconscious \_\_\_\_\_

\_\_\_\_\_

- ii. Outline the role of **one** subdivision of the central nervous system and **one** subdivision of the peripheral nervous system in coordinating the unconscious response provided in **part a.i.** 2 marks

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- b. Research has shown that both neurotransmitters and neuromodulators play a role in thermoregulation. 2 marks
- Contrast neurotransmitters and neuromodulators.

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**Question 2** (9 marks)

Widespread research is being conducted on how gut microbiota might influence Alzheimer's disease through the gut–brain axis. It is known that microbiota can either contribute to or help prevent the progression of Alzheimer's disease. Researchers are currently gathering data on the possible impacts of antibiotics on gut health and symptoms of Alzheimer's disease.

- a.** Identify **one** role of gut microbiota in the human body. 1 mark

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- b.** Explain why Alzheimer's disease impacts the retrieval of autobiographical events. 2 marks

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- c. i.** Explain why a correlational study would be more ethical than a controlled experiment when investigating antibiotic use and the progression of Alzheimer's disease. 3 marks

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- ii.** Identify a population from which the sample would need to be sourced for this correlational study. 1 mark

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- d.** Describe how evidence from brain imaging could provide data to track the progression of Alzheimer's disease. 2 marks

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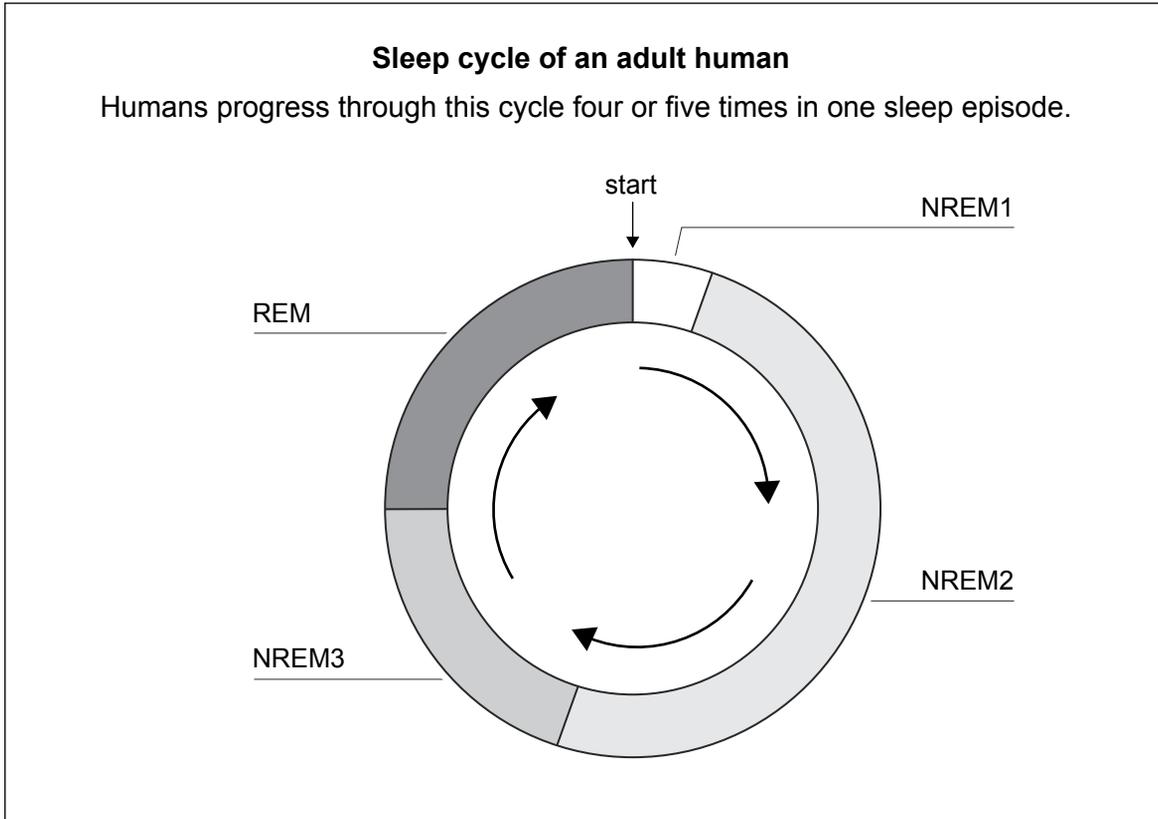
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**Question 3** (10 marks)

After learning about sleep–wake patterns, a student constructed the following model to show the sleep cycle of an adult human.



a. Identify **two** limitations of the student's model.

2 marks

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**b.** Describe how data from **one** physiological measure could be used to support aspects of the student's model.

4 marks

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**c.** Suggest **two** reasons why sleep is categorised as an altered state of consciousness.

2 marks

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**d.** List **two** changes that should be made to the student's model to represent the sleep cycle of an infant.

2 marks

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**Question 4** (11 marks)

Beyond Blue, an Australian mental health and wellbeing support organisation, has released the following fact sheet on specific phobias. The fact sheet is an example of psychoeducation.

Family and friends can play an important role in helping a person with a specific phobia to recover.

Advice statement 1 – Encourage the person to seek help by letting them know what services are available and offer to accompany the person.

Advice statement 2 – Do not involve yourself in the person’s avoidance of objects or situations that make them anxious.

Advice statement 3 – Encourage the person to challenge unrealistic or anxious thoughts.

Advice statement 4 – Acknowledge any progress the person makes, no matter how small.

Source: Adapted from Beyond Blue, 'Specific phobias', fact sheet 38, <[www.australasianpsychologyservices.co/Articles/BBSpecificPhobia.pdf](http://www.australasianpsychologyservices.co/Articles/BBSpecificPhobia.pdf)>; © beyondblue: the national depression initiative, 2010

- a. Describe the social protective factor that supports the maintenance of mental wellbeing. 2 marks

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- b. Advice statement 1 targets a social factor that contributes to the development of a specific phobia. 2 marks  
Name and outline this social factor.

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- c. According to advice statement 2, family and friends may involve themselves in the person's avoidance by demonstrating avoidance behaviours of the phobic stimulus.

Apply the social-cognitive model to explain how a person might learn avoidance behaviours of their phobic stimulus by observing their family or friends.

3 marks

Attention \_\_\_\_\_

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Reproduction \_\_\_\_\_

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Reinforcement \_\_\_\_\_

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- d. i. Advice statement 3 focuses on anxious and unrealistic thoughts.

Explain how catastrophic thinking contributes to a specific phobia.

2 marks

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- ii. State **one** other cognitive bias that contributes to a specific phobia.

1 mark

\_\_\_\_\_

- e. State the type of operant conditioning consequence that is suggested in advice statement 4.

1 mark

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**Question 5** (8 marks)

The pairing of military veterans<sup>1</sup> with service animals has been investigated as an intervention for stress disorder. One study identified the impact of service animals on the stress response of veterans by analysing their cortisol awakening response compared with that of a control group. The cortisol awakening response is a rapid increase of cortisol levels in the first 30–45 minutes after waking in the morning and is measured by collecting saliva samples. A regular cortisol awakening response is beneficial as it reflects a healthy stress response. Military veterans with exposure to chronic stress often have an irregular cortisol awakening response.

Source: Adapted from LO Nieforth et al, 'The cortisol awakening response in a 3 month clinical trial of service dogs for veterans with posttraumatic stress disorder', *Scientific Reports*, 14, 1664, 2024, <<https://doi.org/10.1038/s41598-023-50626-y>>

<sup>1</sup>**veterans** – soldiers who have returned from a war

a. This study focuses on chronic stress.

Distinguish between acute stress and chronic stress.

1 mark

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b. Cortisol release in the human body follows a circadian rhythm.

Explain what is meant by this statement.

1 mark

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c. The influence of service animals on military veterans is an emerging area of research. One benefit of a service animal is building resilience.

With reference to resilience, suggest how service animals could support the mental wellbeing of military veterans.

2 marks

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- d.** The researchers suggested that future studies should consider collecting saliva samples in a controlled laboratory environment rather than at home. This would involve the participants moving into a laboratory environment for one week to have their saliva collected and cortisol levels measured.

Suggest **one** strength and **one** limitation of this change on the validity of the investigation.

2 marks

Strength \_\_\_\_\_

\_\_\_\_\_

Limitation \_\_\_\_\_

\_\_\_\_\_

- e.** Before the service animals are paired with military veterans, they are trained to detect high levels of stress and anxiety in individuals.

Identify which behaviourist approach to learning was used in this animal training example. Justify your response.

2 marks

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**Question 6** (11 marks)

Many long-distance runners have poor sleep quality, which may impact performance and wellbeing. A study has investigated the influence of food and beverage intake on the sleep quality of long-distance runners.

Sleep quality was measured using the Athlete Sleep Behaviour Questionnaire (ASBQ). The lower the ASBQ score, the better the self-reported sleep quality.

A selection of results from the study is shown in the table below.

Food and beverage type	Serving size	ASBQ score (mean ± standard deviation)
fruits	less than 1 serving per day	20.1 ± 4.10
	1–2 servings per day	21.0 ± 4.01
	3–4 servings per day	20.8 ± 4.97
caffeinated beverages	less than 1 cup per day	18.1 ± 2.75
	1–1.5 cups per day	19.2 ± 3.78
	greater than 1.5–2 cups per day	21.6 ± 3.96

Source: Adapted from K Moss et al, 'The relationship between dietary intake and sleep quality in endurance athletes', *Frontiers in Sports and Active Living*, 4, 810402, 2022, <<https://doi.org/10.3389/fspor.2022.810402>>

- a. Based on the data provided, propose **one** recommendation about caffeinated beverage intake that will improve the sleep quality of long-distance runners. 1 mark

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- b. Identify the serving size for fruits that had the highest precision in the ASBQ scores. Justify your response. 2 marks

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- c. Propose how **one** affective and **one** cognitive effect of poor sleep quality would impact the performance of long-distance runners.

2 marks

Affective \_\_\_\_\_

\_\_\_\_\_

Cognitive \_\_\_\_\_

\_\_\_\_\_

- d. Another aspect of food intake that impacts sleep quality is the timing of meals.

With reference to zeitgebers, explain how the timing of meals could be used to improve the sleep–wake patterns of long-distance runners.

3 marks

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- e. The ASBQ includes the following question: ‘Over the recent past, how often did you use an electronic device within 1 hour of going to bed?’

Predict and describe the impact on the ASBQ score of frequently using electronic devices before going to bed.

3 marks

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**Question 7** (10 marks)

For a Psychology practical investigation, Arlo decided to examine whether an awareness of Lazarus and Folkman’s Transactional Model of Stress and Coping had an impact on the severity of stress appraisals.

Arlo used a sample of 10 Psychology students and 10 non-Psychology students in his experiment. The 10 Psychology students had spent one week learning about the Transactional Model of Stress and Coping.

Each participant was presented with a written scenario about a social conflict. They were also given 10 questions to respond to, which gathered data on how severely they would appraise this potential stressor. An example of a scenario with two accompanying questions is shown below.

<p><b>Scenario</b></p> <p>You and another student are assigned to work on a school community project together, but the other student often misses meetings and has not contributed much to the work. You are left completing most of the tasks alone. When you bring it up, the other student says they are overwhelmed with other projects, but promises to do better. The deadline for the school community project is in one week.</p> <p><b>Questions</b></p> <p>Will the outcome of this situation be positive for me?</p> <p>Is help available to assist me with this problem?</p>
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- a. Write a possible hypothesis for Arlo’s experiment. 3 marks

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- b. One participant in Arlo’s investigation suggests that working on the school community project alone, while stressful, would be beneficial for their own development. State the primary appraisal that this student has likely completed. 1 mark

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- c.** The informed consent document did not share the true aim of the experiment with participants.

Assess whether this breaches ethical guidelines.

2 marks

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- d.** This experiment used a between-subjects design.

- i.** Outline **one** benefit of using a between-subjects design for this experiment.

1 mark

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- ii.** Summarise how a within-subjects design could be used in a new experiment with the same aim.

3 marks

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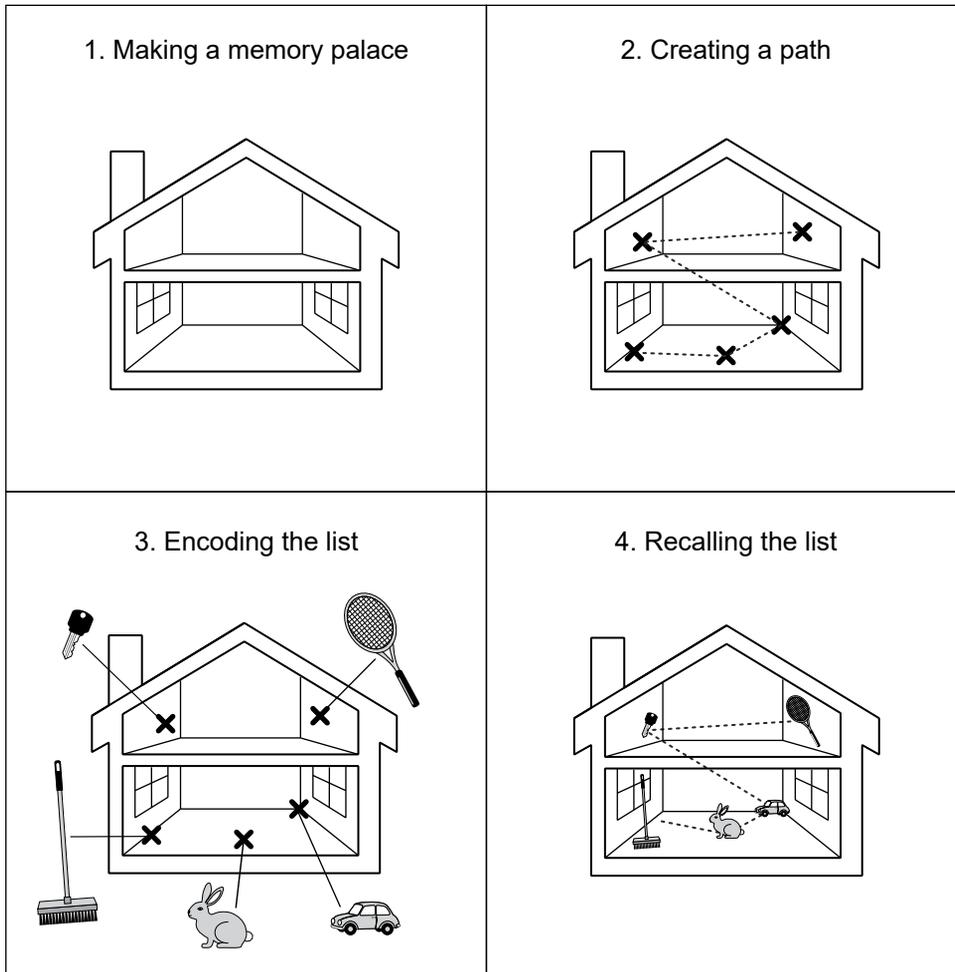
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Your response to Question 9 will be assessed according to the criteria set out on page 35.

**Question 9** (10 marks)

The method of loci is a mnemonic commonly used to increase the encoding, storage and retrieval of information. The diagram below illustrates the steps involved.



Source: Adapted from AE Sousa, Y Mahdid, M Brodeur and M Lepage, *Frontiers in Psychology*, 12, 612681, 2021, <<https://doi.org/10.3389/fpsyg.2021.612681>>; licensed [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/)

Compare the method of loci mnemonic with those used by oral cultures, such as Aboriginal peoples' use of songlines, and evaluate the ability of someone with aphantasia to use each mnemonic successfully. In your response, refer to the diagram provided.

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## Assessment criteria for Section B

Question 9 will be assessed against the following criteria:

- identification and explanation of appropriate psychological terminology in novel and unfamiliar contexts
  - analysis and discussion of relevant psychological information, ideas and/or concepts and the connections between them
  - analysis and evaluation of data, and/or scientific methodologies and methods, and/or models, and/or theories
  - construction of evidence-based arguments and/or drawing of conclusions and/or discussion of implications and findings
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