

Victorian Certificate of Education  
Year

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER           Letter

**PSYCHOLOGY**  
**Written examination**

Day Date

Reading time: \*.\*.\* to \*.\*.\* (15 minutes)

Writing time: \*.\*.\* to \*.\*.\* (2 hours 30 minutes)

**QUESTION AND ANSWER BOOK**

**Structure of book**

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	50	50	50
B	9	9	70
			Total 120

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or correction fluid/tape.
- No calculator is allowed in this examination.

**Materials supplied**

- Question and answer book of 36 pages
- Answer sheet for multiple-choice questions
- Additional space is available at the end of the book if you need extra paper to complete an answer.

**Instructions**

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

**At the end of the examination**

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

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

**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.

**Question 1**

In an experiment, it is essential to control for extraneous variables so that

- A. there is a probability that the results will be obtained by chance.
- B. a valid conclusion can be drawn about the effect of the independent variable on the dependent variable.
- C. a valid conclusion can be drawn about the effect of the dependent variable on the independent variable.
- D. the hypothesis is supported and the results of the experiment can be generalised to the broader population.

**Question 2**

Rylee decided to use the mean as a statistical measure to examine the effect of the consumption of energy drinks on the time taken to complete a jigsaw puzzle.

The use of the mean is suitable if the scores are

- A. clustered around the extreme values.
- B. clustered around a central score.
- C. unevenly distributed.
- D. widely spread.

**Question 3**

Which one of the following sequences best illustrates the consciousness continuum from most aware to least aware?

- A. induced coma → drowsy → fainted → focused on an examination question
- B. focused on an examination question → fainted → drowsy → induced coma
- C. induced coma → fainted → drowsy → focused on an examination question
- D. focused on an examination question → drowsy → fainted → induced coma

**DO NOT WRITE IN THIS AREA**

**Question 4**

Roy was in a room, learning the lyrics of a song that he was to perform at a school concert. While he was learning the lyrics, a clock was ticking noisily in the room. However, Roy was able to focus and concentrate on learning the lyrics without being distracted by the sound of the clock.

In terms of level of awareness, Roy's ability to focus on learning the lyrics of the song is

- A. a controlled process that involves mental effort.
- B. an automatic process that involves mental effort.
- C. a controlled process that involves minimal awareness.
- D. an automatic process that involves maximum awareness.

**Question 5**

Which one of the following best identifies the type of response provided by a spinal reflex?

- A. voluntary
- B. controlled
- C. involuntary
- D. conditioned

**Question 6**

Myelin forms a protective coating over nerve axons.

Another important function of myelin is to

- A. increase the speed of electrical nerve impulses.
- B. decrease the speed of electrical nerve impulses.
- C. prevent the transmission of neurotransmitters across synapses.
- D. promote the transmission of neurotransmitters across synapses.

**Question 7**

Which one of the following statements is correct?

- A. Synaptic plasticity occurs only in early childhood.
- B. Long-term depression is based on the principle that 'neurons that fire together wire together'.
- C. Long-term depression may occur when the number of glutamate receptors decreases, strengthening the synaptic response to the release of neurotransmitters.
- D. Synapses are strengthened in long-term potentiation when the number of glutamate receptors increases, causing a higher excitatory response to the release of neurotransmitters.

DO NOT WRITE IN THIS AREA

Use the following information to answer Questions 8 and 9.

Barry and Terri are at the Australian Football League Grand Final together. They support opposing teams and are both excited and nervous about the game.

**Question 8**

Both Barry's and Terri's excitement and nervousness just prior to the start of the game is likely to produce which of the following physiological changes?

- A. constricted pupils and muscular relaxation
- B. constricted airways and bladder relaxation
- C. dilated pupils and increased release of glucose
- D. decreased heart rate and increased digestive contractions

**Question 9**

At the end of the game, Barry is experiencing eustress and Terri is experiencing distress.

What is the dominant autonomic nervous system division activated during this time for Barry and Terri?

	Barry	Terri
A.	sympathetic nervous system	sympathetic nervous system
B.	sympathetic nervous system	parasympathetic nervous system
C.	parasympathetic nervous system	sympathetic nervous system
D.	parasympathetic nervous system	parasympathetic nervous system

**Question 10**

Parkinson's disease is characterised by

- A. decreased dopamine production and improved muscle movements.
- B. increased dopamine production and improved muscle movements.
- C. decreased dopamine production and impaired muscle movements.
- D. increased dopamine production and impaired muscle movements.

**Question 11**

The alarm reaction stage of the General Adaptation Syndrome is usually characterised by an

- A. immediate release of cortisol into the bloodstream.
- B. increase in vulnerability to illnesses such as influenza.
- C. initial increase in blood pressure and body temperature, followed by a decrease in both.
- D. initial decrease in blood pressure and body temperature, followed by an increase in both.

**Question 12**

One limitation of the General Adaptation Syndrome as a psychological model of stress with a biological process is that

- A. a rat's response to stressors cannot be generalised to a human's response because the rat's response is less varied.
- B. Selye considered the impact of psychological stressors on the human body without considering physiological stressors.
- C. it does not provide an explanation for why the human body's level of resistance to stress decreases during the exhaustion stage.
- D. Selye claimed that, during counter shock, the human body's level of resistance to stress decreases; however, it is actually known to increase.

*Use the following information to answer Questions 13 and 14.*

A psychologist conducted an experiment using the principles of classical conditioning. The experiment investigated the reflexive salivation response in monkeys in response to the presentation of food. After establishing a conditioned response using a bell, the psychologist varied the timing between the sounding of the bell and the presentation of food.

**Question 13**

What were the independent variable (IV) and the dependent variable (DV) in these experiments?

	IV	DV
A.	presentation of food	sounding of a bell
B.	sounding of a bell	presentation of food
C.	amount of saliva	time between sounding of a bell and presentation of food
D.	time between sounding of a bell and presentation of food	amount of saliva

**Question 14**

What were the unconditioned stimulus (UCS) and the conditioned stimulus (CS) in these experiments?

	UCS	CS
A.	bell	food
B.	food	bell
C.	food	saliva
D.	saliva	food

DO NOT WRITE IN THIS AREA

*Use the following information to answer Questions 15–17.*

Four-year-old Mary always kicked and screamed when her mother dressed her. One morning, Mary's mother gave her a lollipop and was then relieved to be able to finish dressing Mary peacefully.

**Question 15**

In terms of the three-phase model of operant conditioning, if the antecedent stimulus in this scenario is considered to be the mother dressing Mary, then the response would be

- A. Mary eating the lollipop.
- B. Mary kicking and screaming.
- C. Mary's mother giving Mary the lollipop.
- D. Mary stopping the kicking and screaming.

**Question 16**

In many situations, parents and children can reinforce each other's behaviours.

If the antecedent stimulus is now considered to be Mary kicking and screaming, then the operant response would be the mother

- A. giving Mary a lollipop.
- B. continuing to dress Mary.
- C. being relieved that Mary is quiet.
- D. asking Mary to calm down and be quiet.

**Question 17**

In terms of operant conditioning, the relief experienced by Mary's mother when Mary stops kicking and screaming after she has received the lollipop is an example of

- A. response cost.
- B. stimulus generation.
- C. spontaneous recovery.
- D. negative reinforcement.

**Question 18**

Mrs Franklin, a science teacher, asked her students to watch a demonstration of the dissection of the spinal cord of a mammal and to store a mental representation of the dissected parts as information for later use.

Which two elements of observational learning does this strategy reflect?

- A. attention and retention
- B. retention and motivation
- C. retention and reinforcement
- D. motivation and reinforcement

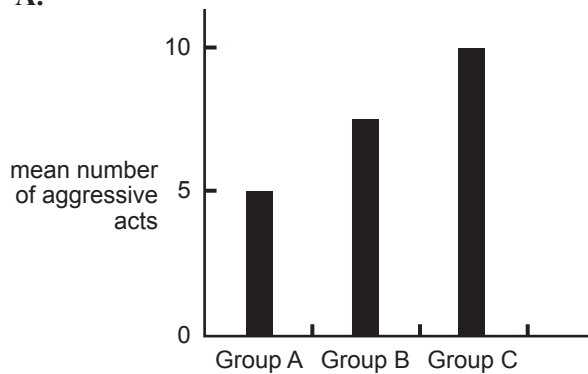
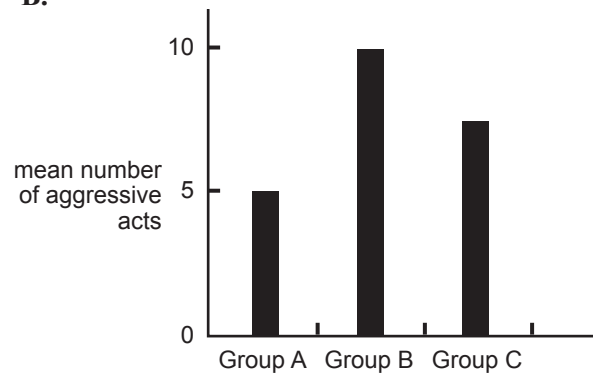
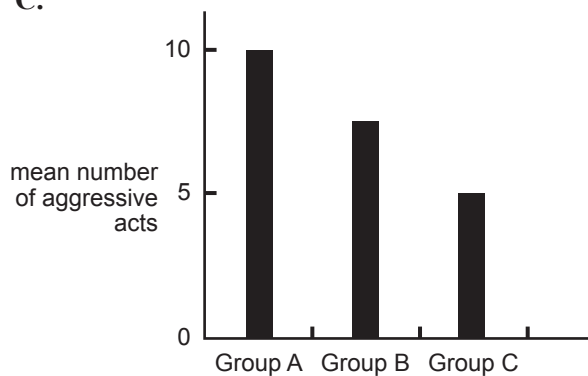
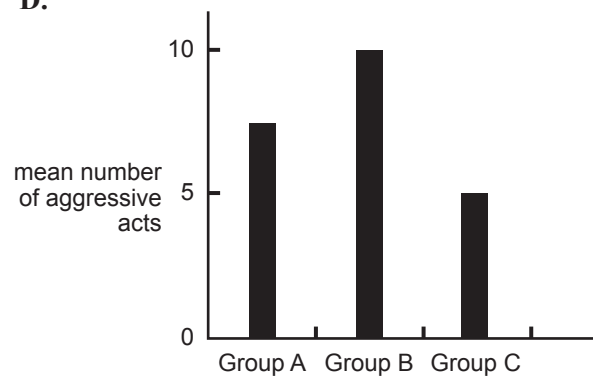
**Question 19**

In an investigation into aggression in children, three groups of children were exposed to different conditions:

- The first group of children (Group A) observed adults, who were unknown to them, behaving aggressively towards some toys.
- The second group of children (Group B) observed adults, who were well-known sports stars, behaving aggressively towards some toys.
- The third group of children (Group C) was a control group and this group observed adults playing with some toys in a non-aggressive manner.

Each group was then left to play with the toys and was observed for the number of aggressive acts that the children in the group committed.

Which one of the following graphs most likely depicts the result of this investigation?

**A.****B.****C.****D.**

DO NOT WRITE IN THIS AREA

*Use the following information to answer Questions 20–23.*

Shane has an intense and irrational fear of snakes, which has been identified as a phobia. He thinks snakes will attack him and that he will get bitten by a venomous snake. He experiences fear even when he is exposed to a harmless image of a snake in a book or on television. His heart beats faster, he feels sweaty, his mouth feels dry and he leaves the room. To overcome his phobia of snakes, Shane seeks the advice of a clinical psychologist.

**Question 20**

Shane's reaction to the image of a snake is called the

- A. flee-confront response.
- B. simple phobia response.
- C. fight-flight-freeze response.
- D. parasympathetic arousal response.

**Question 21**

Which nervous system is activated during Shane's reaction to the image of a snake?

- A. parasympathetic nervous system
- B. sympathetic nervous system
- C. central nervous system
- D. somatic nervous system

**Question 22**

Shane's thoughts about snakes being likely to attack him and about getting bitten by a venomous snake are examples of

- A. precipitation.
- B. memory bias.
- C. catastrophic thinking.
- D. an environmental trigger.

**Question 23**

Shane's psychologist suggests that a group of psychoactive agents known as benzodiazepines may be useful in managing the anxiety associated with Shane's phobia of snakes.

Benzodiazepines imitate the activity of the neurotransmitter gamma-amino butyric acid (GABA) by

- A. activating post-synaptic neurons in the brain to calm the body and reduce arousal.
- B. activating post-synaptic neurons in the brain to activate the body and increase arousal.
- C. inhibiting post-synaptic neurons in the brain to calm the body and reduce arousal.
- D. inhibiting post-synaptic neurons in the brain to activate the body and increase arousal.



Use the following information to answer Questions 24–27.

John Watson classically conditioned the emotional response of fear in the 11-month-old child ‘Little Albert’. Little Albert would cry and try to crawl away from a white rat during Watson’s experiment. Little Albert also became fearful of other white objects, such as a white rabbit and a Santa Claus mask.

**Question 24**

Which of the following correctly identifies the type of memory demonstrated by Little Albert’s fear response and the part of the brain responsible for the consolidation of fear-conditioned memories?

	Type of memory	Part of the brain
A.	explicit	amygdala
B.	implicit	amygdala
C.	episodic	hippocampus
D.	procedural	hippocampus

**Question 25**

Which one of the following best describes Little Albert’s fear response to the white rabbit and the Santa Claus mask?

- A. reflex response
- B. spontaneous recovery
- C. stimulus generalisation
- D. stimulus discrimination

**Question 26**

With regard to current ethical standards, which one of the following best identifies the ethical consideration that Watson did not observe when Little Albert exhibited severe distress?

- A. privacy
- B. confidentiality
- C. informed consent
- D. withdrawal rights

**Question 27**

If Little Albert’s conditioned response had developed into a specific phobia, which of the following would be a possible predisposing factor and a possible perpetuating factor?

	Predisposing factor	Perpetuating factor
A.	ruminantion	psychological trauma
B.	psychological trauma	ruminantion
C.	observational learning	imbalance of Little Albert’s GABA levels
D.	imbalance of Little Albert’s GABA levels	operant conditioning

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**Question 28**

Which one of the following statements about short-term memory is most accurate?

- A. Short-term memory holds only information transferred from sensory memory.
- B. All incoming information is held in short-term memory for approximately 30 minutes.
- C. Short-term memory holds all sensory information until it is encoded into long-term memory.
- D. Short-term memory holds a limited amount of encoded information while it is being processed.

**Question 29**

Garry is driving home from work when his wife calls and asks him to get 10 items from the supermarket.

Garry tries to repeat the list over and over to himself, in order, until he gets to the supermarket.

Which items is Garry most likely to bring home?

- A. items 1 and 2, and 8–10
- B. the middle four items
- C. the last five items
- D. all items

**Question 30**

Kate is learning Spanish as a second language in preparation for a trip she is taking to South America next year.

Which of the following identifies where Kate consolidates and stores the new Spanish words in her long-term memory?

	<b>Where words are consolidated</b>	<b>Where words are stored</b>
A.	hippocampus	cerebral cortex
B.	cerebral cortex	hippocampus
C.	cerebral cortex and hippocampus simultaneously	hippocampus
D.	cerebral cortex and hippocampus simultaneously	both cerebral cortex and hippocampus

**Question 31**

Peter, a healthy 56-year-old man, fell off his bicycle while riding to work one day and sustained head trauma.

Although he regained consciousness soon after the accident and did not experience any issues with his speech or motor functions, he has been unable to recall any of the events that have occurred since the accident. He can, however, still remember all the memories of his life before the accident and can still recall the events leading up to the accident.

A task that Peter should still be able to do is

- A. recall a new bicycle route to his workplace.
- B. remember the names of the doctors treating him.
- C. recite the details of a conversation he had an hour ago.
- D. use a new piece of equipment after being shown how it works.

**Question 32**

While rushing out the door to go to school, Sarah accidentally smashed her parents' antique vase. She was so shaken up by the event that she had trouble sleeping that night and kept replaying the incident in her head for the next two days.

The neurohormone involved in the consolidation of Sarah's memory of the incident is

- A. GABA.
- B. dopamine.
- C. adrenaline.
- D. a benzodiazepine agent.

**Question 33**

Research by Loftus on the effect of leading questions on eyewitness testimonies has found that

- A. exposure to leading questions has no impact on an eyewitness' recollection of events.
- B. eyewitness memories cannot be manipulated and are, therefore, highly reliable as evidence in court.
- C. eyewitness memories are reconstructions of events that can be manipulated by information that is given after the event.
- D. it is unfair to expect eyewitness testimonies to be accurate as people will remember only events that are positive.

**Question 34**

How will the frequency and amplitude of a typical person's brain waves change between an alert state and a drowsy state?

	Frequency	Amplitude
A.	increase	decrease
B.	increase	increase
C.	decrease	decrease
D.	decrease	increase

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**Question 35**

Dr Shapiro, a school teacher, is screening a documentary program in his class. Towards the end of the class he notices that some students are not watching the television screen. Maggie is busy working on a crossword puzzle, Monica is staring dreamily out the window and Keong has recently fallen asleep at the table.

Which of the following identifies the prominent brain wave pattern for each student?

	<b>Maggie's brain waves</b>	<b>Monica's brain waves</b>	<b>Keong's brain waves</b>
<b>A.</b>	beta	alpha	delta
<b>B.</b>	beta	alpha	theta
<b>C.</b>	alpha	beta	theta
<b>D.</b>	theta	alpha	delta

**Question 36**

The first ultradian rhythm of the night differs from the last ultradian rhythm of the night as the first ultradian rhythm of the night involves

- A.** more time spent in non-rapid eye movement (NREM) sleep.
- B.** more time spent in rapid eye movement (REM) sleep.
- C.** only Stage 2 and Stage 3 of NREM sleep.
- D.** frequent brief awakenings.

Use the following information to answer Questions 37–40.

Kim agrees to participate in a sleep research study conducted by Dr Kapoor. Dr Kapoor uses electroencephalography (EEG), electromyography (EMG) and electro-oculography (EOG) to record Kim's physiological changes over the course of one night while Kim is asleep.

**Question 37**

The type of data Dr Kapoor is generating is best described as

- A. primary quantitative data.
- B. secondary qualitative data.
- C. secondary quantitative data.
- D. primary repeated-measures data.

**Question 38**

What data about Kim do the EEG, EMG and EOG provide Dr Kapoor with?

	EEG	EMG	EOG
A.	eye position movement patterns	brain wave patterns	muscle activity
B.	brain wave patterns	muscle activity	eye position movement patterns
C.	brain wave patterns	eye position movement patterns	muscle activity
D.	muscle activity	brain wave patterns	eye position movement patterns

**Question 39**

Dr Kapoor also wishes to investigate the effects of partial sleep deprivation.

Which one of the following statements would best describe the findings of the investigation?

- A. Partial sleep deprivation would have no psychological effect on participants.
- B. Some participants are likely to suffer severe physical effects for several weeks following partial sleep deprivation.
- C. After partial sleep deprivation, participants would find it more difficult to perform simple tasks than complex tasks.
- D. After partial sleep deprivation, participants would find it more difficult to perform complex tasks than simple tasks.

**Question 40**

When Dr Kapoor is studying human sleep patterns, she must

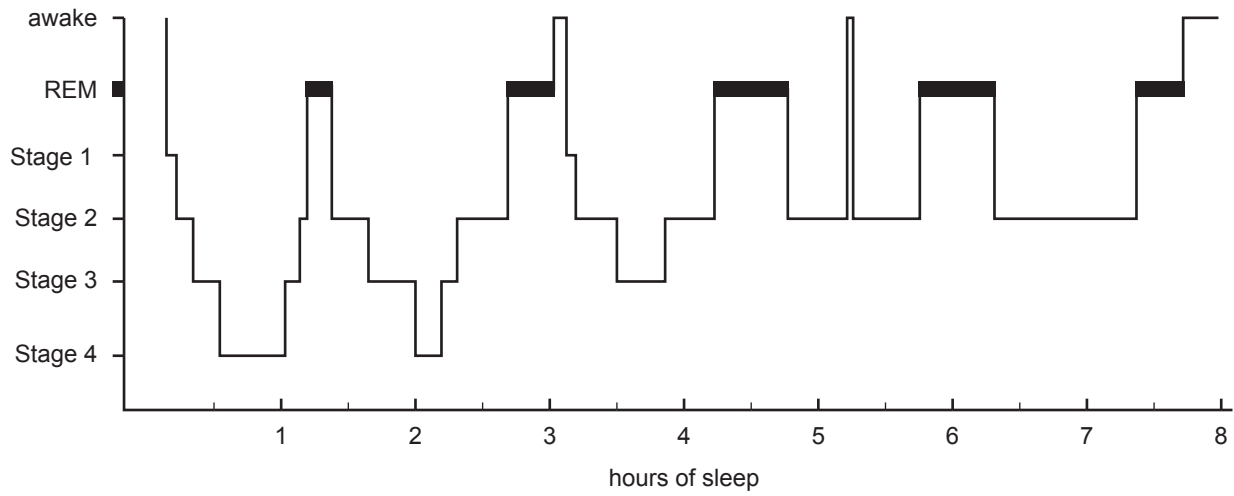
- A. ensure participant confidentiality.
- B. debrief participants at the start of the study.
- C. withhold information from participants about the nature of the study.
- D. avoid short-term disruption of participants' sleep patterns for the purpose of the study.

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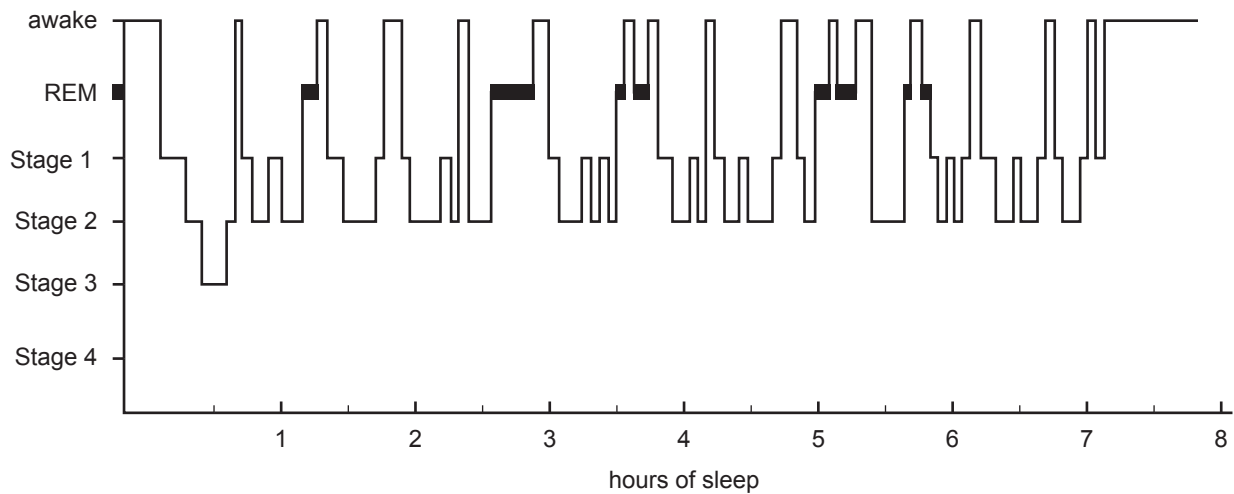
Use the following information to answer Questions 41 and 42.

The following graphs show the typical sleep cycles for two distinct age groups.

Age group 1



Age group 2



Source: DN Neubauer, 'Sleep problems in the elderly', in *American Family Physician*, May 1999, 59(9), pp. 2551–2558; © 1999 American Academy of Family Physicians

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**Question 41**

Whose typical sleep cycles are represented by Age group 1 and Age group 2?

	Age group 1	Age group 2
A.	infant	adolescent
B.	infant	elderly person
C.	adolescent	elderly person
D.	elderly person	infant

**Question 42**

According to the restoration theory of sleep, the individuals in Age group 1 spend more time in REM sleep than the individuals in Age group 2

- A. in order to conserve energy and as protection from harm.
- B. in order to restore biological processes such as muscle and tissue repair.
- C. because experiencing more deep sleep at night enhances the chance of survival.
- D. in order to restore mental processes so that neural circuits are consolidated or strengthened.

**Question 43**

Alison is in Year 11. On most weeknights she goes to bed after her parents as she often does not feel sleepy until midnight. She gets up each weekday morning at 6.00 am to go to school but feels tired during most school days. On weekends, when she can sleep uninterrupted, she seldom wakes up before 10.00 am.

Compared to her parents, Alison is likely to take longer to feel tired later at night due to

- A. a lack of change in her melatonin levels.
- B. a decrease in her melatonin levels.
- C. a delayed release of melatonin.
- D. an earlier release of melatonin.

**Question 44**

Ari is a nurse who does shift work in a hospital. His roster usually consists of a week of night shifts followed by a week of day shifts. Ari has difficulty sleeping at night during the weeks of day shifts and is constantly tired. Ari's doctor has recommended bright-light therapy to improve his sleep during weeks of day shifts.

It is likely that bright-light therapy will assist Ari by resetting his

- A. circadian rhythms as he is experiencing parasomnia.
- B. ultradian rhythms as he is experiencing parasomnia.
- C. circadian rhythms as he is experiencing a circadian phase disorder.
- D. ultradian rhythms as he is experiencing a circadian phase disorder.

DO NOT WRITE IN THIS AREA

*Use the following information to answer Questions 45–48.*

Fraser is under a lot of stress at work and, as a result, is experiencing partial sleep deprivation. He often feels tired during the day and has recently been drinking up to six cups of coffee daily to stay alert at work. Fraser seeks the assistance of a psychologist to deal with his stress, and to improve his overall mental health and wellbeing.

**Question 45**

In terms of the development of mental health disorders, Fraser's ongoing sleep deprivation could be considered a

- A. biological predisposing risk factor.
- B. biological precipitating risk factor.
- C. psychological precipitating risk factor.
- D. psychological perpetuating risk factor.

**Question 46**

When Fraser consumes caffeine to increase his level of alertness, an EEG would show a brain wave pattern that has

- A. low-amplitude and low-frequency waves.
- B. low-amplitude and high-frequency waves.
- C. high-amplitude and low-frequency waves.
- D. high-amplitude and high-frequency waves.

**Question 47**

The psychologist recommends that Fraser try to reduce his daily caffeine intake to two cups of coffee in the morning and to avoid using electronic devices within one hour of going to bed. Fraser believes that this plan is achievable and that he can make these changes over the next two weeks.

According to the transtheoretical model of behaviour change, Fraser is most likely in the stage of

- A. action.
- B. preparation.
- C. contemplation.
- D. pre-contemplation.

**Question 48**

The following week, Fraser restricts his daily caffeine intake to two cups of coffee in the morning. However, he finds it difficult to avoid using his mobile phone within one hour of going to bed as he regularly uses that time to catch up on the daily news by reading it on his mobile phone while in bed.

In terms of his two goals of reducing his daily caffeine intake and not using electronic devices within one hour of going to bed, it is most likely that Fraser is in the stages of, respectively

- A. action and preparation.
- B. contemplation and action.
- C. action and contemplation.
- D. pre-contemplation and relapse.



*Use the following information to answer Questions 49 and 50.*

Leanne plays the drums in a band with her friends. The band was asked to perform at her cousin's 21st birthday party. Leanne felt very stressed about performing in front of an audience and, on the evening of the party, she felt sick and asked the band members to perform without her. Leanne stayed at home instead of going to the party. The next time the band performed at a party, Leanne began playing with the band but immediately experienced sweaty palms, an increase in her breathing rate and a rapid pulse as she stood in front of the audience. She stopped playing with the band, said that she felt sick and went home. Leanne has subsequently continued to make excuses and stay at home every time she has been asked to perform with the band at a party because, every time she thinks of playing in public, she experiences feelings of intense fear and worry, shortness of breath, sweating, trembling, nausea and dizziness.

**Question 49**

According to behavioural models, it is likely that Leanne has

- A. anxiety associated with performing in public that involves precipitation by operant conditioning and perpetuation by classical conditioning.
- B. stress associated with performing in public that involves precipitation by classical conditioning and perpetuation by operant conditioning.
- C. enjoyment when performing in public that involves precipitation by operant conditioning and perpetuation by classical conditioning.
- D. a phobia of performing in public that involves precipitation by classical conditioning and perpetuation by operant conditioning.

**Question 50**

Concerned about her continued reluctance to perform in public, Leanne's friends suggested that she see a psychologist. The psychologist works with Leanne to develop strategies to minimise her reluctance to perform in public. The psychologist first suggests that Leanne perform with her band in front of a close friend, nominated by Leanne, in familiar surroundings. When Leanne is able to do that without feeling anxious, the psychologist suggests that she practise playing with the band in front of a small group of friends in familiar surroundings. The next step involves Leanne performing with the band in front of a small group of friends in unfamiliar surroundings. Eventually, Leanne was able to perform with the band in public.

The treatment used by the psychologist was

- A. extinction.
- B. cognitive bias.
- C. systematic desensitisation.
- D. cognitive behavioural therapy (CBT).

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**END OF SECTION A  
TURN OVER**

**SECTION B**

**Instructions for Section B**

Answer **all** questions in the spaces provided. Write using blue or black pen.

**Question 1** (2 marks)

Ruby, a journalist, frequently travels overseas for work but finds it difficult to sleep on an aeroplane. During a recent 16-hour, non-stop flight from Melbourne to Los Angeles, she slept in short bursts of 30 minutes for a total of four hours. Upon her arrival at Los Angeles, Ruby went straight to an important interview.

State one emotional effect and one cognitive effect that Ruby may have experienced as a result of her partial sleep deprivation.

Emotional effect \_\_\_\_\_

Cognitive effect \_\_\_\_\_

**Question 2** (2 marks)

Identify **one** consequence of disorganised attachment by a caregiver on the social development of a child and describe how this consequence could lead to the potential development of a mental health disorder later in life.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Question 3** (2 marks)

Three months ago, 45-year-old Milos lost his job at a company where he had worked for 25 years. He is still unemployed despite applying for many jobs.

Milos has two teenage children living at home and his wife works full-time as a teacher. Before losing his job, Milos had promised to take his family on an overseas holiday for Christmas.

Milos is having difficulty sleeping but is making sure that he eats well and exercises daily. He has also recently made contact with a job agency that provides him with job application and interview skills.

With reference to cumulative risk, comment on the likelihood of Milos developing a mental health disorder.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Question 4** (4 marks)

Vicky has been having tennis lessons at her local tennis club for a number of years. However, during her last three social matches, where she played with three of her friends at the club, she made a high number of errors when required to swing her racquet backwards. Vicky's tennis coach suggested that they focus on changing her backwards swing technique over several weeks.

- a. Describe the role of long-term potentiation and long-term depression, in terms of neural plasticity, when Vicky learns her new backwards swing technique.

2 marks

Long-term potentiation \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Long-term depression \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- b. Once Vicky had mastered her new backwards swing technique, she was selected to play in a competition match at a different tennis club. Prior to the match, the palms of her hands became sweaty and her heart started racing. During the early part of the match, she forgot how to keep the score.

Explain how state-dependent cues could have led to Vicky's inability to remember how to keep the score for the match.

2 marks

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Question 5** (10 marks)

Alex and Danny are both students who have been selected to try out for a national under-21 football squad. Although Alex knows that he is a good player, he is feeling overwhelmed by the level of competition for a place in the national squad and is concerned that he is not good enough to gain squad selection. For the past six months, Alex has had difficulty falling asleep at night. He is often still awake at 2.00 am despite having gone to bed, on most nights, at around 10.30 pm. As bedtime approaches, Alex worries that he will not be able to fall asleep.

On the other hand, Danny is enjoying football training and is pleased with his skill development. He is confident of squad selection, does not feel excessively stressed and has no trouble sleeping.

a. Identify **one** example of Alex’s poor self-efficacy. 1 mark

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b. Define the likely sleep disturbance from which Alex is suffering. 1 mark

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c. Explain how cognitive behavioural therapy (CBT) could be used to treat Alex’s sleep disturbance. 3 marks

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d. Explain why Alex and Danny may have evaluated their situations differently in terms of the primary appraisal stage of Lazarus and Folkman’s Transactional Model of Stress and Coping. 3 marks

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e. Outline an approach strategy that could help Alex reduce his levels of stress.

2 marks

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**Question 6 (10 marks)**

Callum is suffering from a mental health disorder that is being treated with medication. His legal guardian has been asked to provide informed consent for Callum to participate in a research study for a new medication, Chloromidiside, which is being developed to potentially treat the disorder Callum is suffering from. As part of the study, Callum may either be allocated to the experimental group that will receive the trial medication or to the control group that will receive a placebo treatment. If Callum participates in the study, he will be required to stop his current medication.

**a.** Psychological research requires the application of a number of research design principles.

**i.** Outline the purpose of the control group as it relates to this study. 1 mark

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**ii.** Why might the use of a placebo treatment be of ethical concern in relation to this study? 1 mark

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**iii.** Why did the researchers seek informed consent from Callum’s legal guardian? 1 mark

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**b.** Poor response to medication due to genetic factors can be considered both a biological risk factor and a perpetuating risk factor.

In relation to this research study, explain what is meant by ‘biological risk factor’ and ‘perpetuating risk factor’. 2 marks

Biological risk factor \_\_\_\_\_

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Perpetuating risk factor \_\_\_\_\_

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- c. In a different mental health study, the researchers were interested in comparing the effectiveness of three evidence-based interventions (biological, psychological, social) for a particular mental health disorder. Each participant completed a self-report prior to treatment, after four weeks of treatment and again after seven weeks of treatment. Participants rated their improvement on a scale of one to 10 (the higher the score, the more they felt they had improved). The results are shown in the table below.

	<b>Biological intervention (Chloromidiside)</b>	<b>Psychological intervention (psychotherapy)</b>	<b>Social intervention (family support)</b>
<b>Mean self-report score prior to treatment</b>	3.3	3.2	3.4
<b>Mean self-report score after four weeks</b>	5.8	3.9	6.5
<b>Mean self-report score after seven weeks</b>	6.1	7.5	5.9

- i. Identify one strength and one limitation of self-reports.

2 marks

Strength \_\_\_\_\_

\_\_\_\_\_

Limitation \_\_\_\_\_

\_\_\_\_\_

- ii. Use the data in the table to compare the effectiveness of the three evidence-based interventions.

3 marks

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**Question 7** (16 marks)

For her extended VCE Psychology practical investigation, Amelia decided to investigate encoding in short-term memory. She used a random sample of 30 students from a cohort of 150 Year 10 students at her school.

Two lists of monosyllabic words were read out to participants in the investigation:

- List 1 – key, pea, ski, flea, tea, bee, knee, tree, sea (monosyllabic words that rhyme)
- List 2 – sock, bean, stick, ant, milk, fly, leg, leaf, sand (monosyllabic words that do not rhyme)

All 30 participants listened to two readings of the words in List 1 and were then given two minutes to write down the words that they recalled. Next, they all listened to two readings of the words in List 2 and were then given two minutes to write down the words that they recalled.

- a.** Identify the dependent variable and the independent variable in Amelia’s research investigation. 2 marks

Dependent variable \_\_\_\_\_

Independent variable \_\_\_\_\_

- b.** Name the experimental research design that Amelia used in this investigation and state one disadvantage of this choice of design. 2 marks

Experimental research design \_\_\_\_\_

Disadvantage \_\_\_\_\_

- c.** Amelia used random sampling to select the participants for her investigation.

- i.** Explain why random sampling is a better choice of sampling technique for this investigation than convenience sampling. 2 marks

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\_\_\_\_\_  
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- ii.** Outline a method that Amelia could have used to take a random sample of the Year 10 students. 2 marks

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\_\_\_\_\_  
\_\_\_\_\_



- d. Amelia calculated the mean and the standard deviation for each list in the findings of her investigation and presented the following results in her scientific poster.

	<b>List 1 (monosyllabic words that rhyme)</b>	<b>List 2 (monosyllabic words that do not rhyme)</b>
<b>Mean number of words recalled</b>	4.2	6.7
<b>Standard deviation</b>	1.8	0.8

- i. Explain what the means in Amelia's investigation suggest about encoding in short-term memory. 2 marks

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- ii. What do the standard deviations in Amelia's investigation suggest about encoding in short-term memory? 1 mark

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e. In the conclusion section of her scientific poster, Amelia proposed that her investigation could be extended to find out whether the words in List 2 would be more easily remembered if they were presented alongside pictures; for example, if the word ‘sock’ was presented alongside a picture of a sock.

i. Assume Amelia uses the same participants from the original practical investigation.

What type of experimental research design could Amelia use for the proposed extended investigation? Give a reason for your response.

2 marks

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ii. Predict the results of Amelia’s proposed extended investigation, using relevant psychological concepts to justify your response.

3 marks

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**SECTION B – continued  
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**Question 8** (14 marks)

A recent increase in the number of car accidents as a result of driver error has created concern for both the government and the police. The government has offered to provide funding for a public awareness campaign once the police have identified the probable causes of the increase in car accidents. After reviewing the circumstances around car accidents, traffic police specialists identified two possible factors they believe may have contributed to most of the driver errors:

1. the legal blood alcohol concentration (BAC) for driving, which is currently 0.05, is too high
2. an increase in driver tiredness

A team of psychologists was employed to conduct an investigation to determine which of the two possible factors had the most negative effect on drivers. The factor with the greatest negative effect would be the focus of the public awareness campaign.

The psychologists advertised on social media for volunteers aged 21 and over, and who hold a current full driver's licence, to participate in the investigation. Eight hundred eligible volunteers were allocated to groups based on the following age ranges.

Age range of group	21–29	30–39	40–49	50–59	60–69	70–79	80+
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The psychologists randomly selected 50 volunteers from each group to participate in the investigation, giving a total of 350 participants.

The participants were required to visit the investigation venue once per week for three consecutive weeks. On each day that the participants were at the venue, they completed a 30-minute driving task in a driving simulator under the following conditions.

Day	BAC condition	Previous night's sleep condition
1	0.00	normal night's sleep
2	0.00	totally sleep deprived
3	0.05	normal night's sleep

The number of driving errors made by the participants in the driving simulator was recorded. The results of the investigation are shown in the table below.

Day	Mean number of driving errors for all age groups
1	5.2
2	22.3
3	21.7

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a. Write a research hypothesis for the investigation.

2 marks

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b. Represent the results of the investigation in a correctly labelled graphical representation using the grid provided below.

2 marks


c. Write a conclusion that could be drawn from the results of the investigation.

2 marks

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d. With respect to the investigation, explain what is meant by ‘validity’ and ‘reliability’.

2 marks

Validity \_\_\_\_\_

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Reliability \_\_\_\_\_

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e. Explain the effects on consciousness, particularly cognition, that are relevant to driving a vehicle with a legal BAC of 0.05 compared to one night of full sleep deprivation.

In your response, refer to:

- the results of this research
- relevant psychological concepts
- advice that could be given to the government and the police regarding the focus and content of the public awareness campaign to reduce the number of car accidents.

6 marks

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**SECTION B – continued  
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**Question 9** (10 marks)

Dr Wright visited a local kindergarten to talk to the children about good oral health. At the end of the visit, she provided each child with an information pack that contained a toothbrush, toothpaste, stickers and colouring-in sheet. The information pack also included a pamphlet for their parents, as shown below.

**Avoiding fear of the dentist**

It is important for your child to visit the dentist to maintain healthy teeth and gums. Children do not have a natural fear of the dentist; however, some children may experience stress or anxiety that is associated with dental treatment. If not effectively managed, this may develop into a phobia. Children often learn to be fearful of the dentist subjectively through observing what other people say and do.

The good news is that you can help to minimise this fear! Here is a list of things that may contribute to positive dental experiences for your child:

1. Choose the right dentist. Ask if the dentist has experience working with children and visit the clinic to see if it is family friendly. Is the receptionist welcoming? Are there toys in the waiting room? Is there positive pre-visit imagery (i.e. friendly pictures of teeth on the wall, no graphic posters of gum disease)?
2. Choose your words carefully. Avoid words that your child may associate with pain, such as ‘needle’, ‘injection’ or ‘hurt’, and do not make promises you cannot keep, for example, saying ‘Everything will be fine’. Depending on your child’s developmental level, you could say something like, ‘The dentist will check your smile and count your teeth’. You should also avoid saying things like, ‘If you don’t brush your teeth, you’ll have to go to the dentist’, as this may create a negative perception and appraisal of the dentist by your child.
3. Consider role-play. You could play ‘pretend’ with your child and take it in turns to be the dentist and patient. When doing this, include suggestions such as, ‘Open your mouth like a tiger roaring’ or ‘Let me see how many teeth you have’.
4. Focus on your child’s own dental experience. Avoid talking about your own fears of the dentist or how much it hurt when you had dental treatment in the past, when treatment was less advanced and more invasive. Avoid taking your child to your own dental appointments if you know you will show signs of stress or anxiety.
5. Act early. A positive early dental experience can result in future eustress rather than distress when visiting the dentist. Preventive care can also minimise the need for invasive interventions involving injections, fillings or extractions. Negative emotions related to invasive interventions can last for a long time and may lead to a fight-flight-freeze response at the thought of returning to the dentist.
6. Avoid bribery. Offering your child a bribe may make them think going to the dentist must be unpleasant, and/or may result in their refusal to attend future dental appointments without a reward. Additionally, if you promise your child a sugary treat, such as a lollipop, in return for a visit to the dentist, this can reinforce the wrong message about the relationship between sugar and cavities.





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**Answers to multiple-choice questions**

Question	Answer
1	B
2	B
3	D
4	A
5	C
6	A
7	D
8	C
9	A
10	C
11	D
12	A
13	D
14	B
15	B
16	A
17	D
18	A
19	D
20	C
21	B
22	C
23	C
24	B
25	C

Question	Answer
26	D
27	D
28	D
29	A
30	A
31	D
32	C
33	C
34	D
35	B
36	A
37	A
38	B
39	C
40	A
41	C
42	D
43	C
44	C
45	B
46	B
47	B
48	A
49	D
50	C