

Victorian Certificate of Education
2021

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

PSYCHOLOGY
Written examination

Monday 1 November 2021

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 11.45 am (2 hours 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	50	50	50
B	7	7	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 space 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

The absence of the myelin sheath would lead to

- A. neural inactivity.
- B. neural impulses being processed more quickly.
- C. interference with the speed of neural transmission.
- D. disruption of communication from dendrites to axons.

Question 2

Which of the following paired options describes a role of a dendrite and an axon terminal?

	Role of dendrite	Role of axon terminal
A.	grows during neuroplasticity	conducts electrical signals from dendrites
B.	collects electrical signals from other neurons	transmits information to other neurons
C.	transmits information to adjoining neurons	stores neurotransmitters in pockets ready for release
D.	receives information from pre-synaptic neurons	releases neurotransmitters into synapses

Question 3

Vikki wakes up to the sound of something scratching at the bedroom window and becomes so frightened that they cannot move.

Vikki is likely experiencing

- A. an inability to move due to parasympathetic dominance.
- B. a heightened heart rate with sympathetic nervous system activation.
- C. stimulation of the autonomic nervous system in preparation for running away.
- D. the ‘fight-flight-freeze’ response, which is controlled by the somatic nervous system.

Question 4

Monty is getting married to his long-term partner Peta and is feeling overwhelmed as they are finally moving in together and will also need to pay for the wedding.

Which of the following could be the source of Monty's stress and why?

	Source of stress	Why
A.	a life event	Marriage is an important event.
B.	acculturative stress	Living with another person requires changes to routines.
C.	a daily pressure	There is an expectation that Monty and Peta pay for the wedding.
D.	major stress	Not having enough money is very stressful and can lead to illness.

Use the following information to answer Questions 5 and 6.

Dakota decided to purchase a second surfboard in preparation for an upcoming competition. When it arrived, she noticed that it was damaged and she was informed that a replacement would not be available until after the competition.

Question 5

In terms of Lazarus and Folkman's Transactional Model of Stress and Coping, a possible secondary appraisal for Dakota might be

- A. feeling disappointed because her new surfboard cannot be used.
- B. that she could cope with the delay by using her existing surfboard.
- C. feelings of loss at not being able to compete because her new surfboard is broken.
- D. that this is an opportunity to seek another supplier from whom she can purchase an alternative surfboard.

Question 6

Which one of the following could be an effective approach coping strategy that Dakota could use while preparing for the surfing competition?

- A. Research other shops to find an appropriate replacement surfboard.
- B. Discuss and complain about the situation with her family and friends.
- C. Exercise by going for a long run to take her mind off the competition.
- D. Play hours of video games that use different surfing scenarios to pass the time.

Question 7

Which of the following is true of eustress and distress?

	Eustress	Distress
A.	uses less energy because it is usually a good event	requires increased concentration and lower levels of alertness
B.	decreases physiological reactions to positive news	leads to the activation of the parasympathetic nervous system
C.	the perception of a stressor depends on the individual's view of the situation	activates the somatic nervous system if something is stressful
D.	increases physiological arousal due to a positive response to a stressor	decreases energy over an extended period of time

Question 8

Ava is a 16-year-old student whose family travels around Australia for work. Each time Ava moves, she is forced to change schools. Ava has been finding each move progressively more difficult. At her latest school, Ava has made little effort to adjust to the new environment.

Ava is demonstrating

- A.** coping flexibility as she is unable to fit in.
- B.** difficulty adapting to a new environment.
- C.** context-specific effectiveness as the situation keeps changing.
- D.** acculturative stress as she is frequently changing friendship groups.

Question 9

To use counterbalancing in an experiment, a researcher must

- A.** alternate the order of exposure to the independent variable.
- B.** change the order of each group experiencing the dependent variable.
- C.** randomly allocate participants to either the experimental or control group.
- D.** balance experimental and control groups based on participant characteristics.

Question 10

Which of the following is a difference between classical conditioning and operant conditioning?

	Classical conditioning	Operant conditioning
A.	learning is more permanent	learning is less permanent
B.	association made between stimuli influences the response	involuntary and automatic response
C.	the response occurs to a specific stimulus for stimulus discrimination	behaviour occurs to similar stimuli for stimulus discrimination
D.	stimulus directly produces the response	antecedent does not directly produce the response

Use the following information to answer Questions 11 and 12.

William, aged five, adores his big brother Sam, aged seven. Sam recently learnt how to ride a skateboard.

Question 11

William is also likely to learn how to ride a skateboard due to which stage of observational learning and associated reason?

	Stage of observational learning	Associated reason
A.	attention	William idolises his brother.
B.	retention	William wants to learn how to ride a skateboard.
C.	motivation	William anticipates himself being able to balance on the skateboard.
D.	reproduction	William can create a mental representation of riding a skateboard.

Question 12

For Sam, learning how to ride a skateboard

- A. developed neural changes in his cerebellum.
- B. caused a reflexive response in his nervous system.
- C. was a conscious response that involved his autonomic nervous system.
- D. led to the frequent activation of motor neurons first, followed by sensory neurons.

Question 13

The 'Little Albert' experiment demonstrated

- A. that glutamate plays a role in emotional learning.
- B. the importance of obtaining consent from children.
- C. how conditioning can be used to form an emotional response.
- D. the role of adrenaline in the emotionally conditioned response.

Use the following information to answer Questions 14–16.

Justin is listening to the radio in his car when a ‘guess the song’ competition is announced. Justin thinks he knows the song, so he listens for the phone number to call.

Question 14

According to the Atkinson-Shiffrin multi-store model of memory, how long will the phone number remain in Justin’s short-term memory if he does not write the number down or engage in any other practices to remember it?

- A. 5–10 seconds
- B. 10–20 seconds
- C. 15–30 seconds
- D. 30–45 seconds

Question 15

Which of the following methods is most likely to assist Justin with transferring the phone number to long-term memory and why?

	Method of transferring to long-term memory	Why
A.	Repeat the number to himself out loud.	The repeated auditory exposure will help with the transfer.
B.	Try to have a nap.	The consolidation process is aided by sleep.
C.	Relearn the number in the car where he first heard it.	The environment in the car will act as a memory cue.
D.	Use reconstruction.	The order of the numbers will assist with recall.

Question 16

According to the Atkinson-Shiffrin multi-store model of memory, when Justin wants to retrieve the phone number from long-term memory, the number will be

- A. recalled directly from long-term memory.
- B. moved from long-term memory to short-term memory.
- C. moved from long-term memory directly to sensory memory.
- D. moved from long-term memory to sensory memory, via short-term memory.

Question 17

A hypothesis

- A. is a question the research study sets out to answer.
- B. predicts how the dependent variable will affect the independent variable.
- C. is generated based on scientific knowledge or experience in order to understand and test ideas.
- D. is a method of research in which an experimenter manipulates the independent variable to observe the effect on the dependent variable.

Question 18

Jonas is at the shops. While he is there, he calls his father to ask if there is anything his father would like him to buy. Jonas's father gives him a list of eight items he would like Jonas to buy. Jonas continues to speak to his father about his plans for the day. Thirty seconds pass between Jonas hearing the list and writing it down.

What is the likely outcome when Jonas writes down the list and why?

	Outcome	Why
A.	Jonas remembers only the first few items.	Rehearsal transferred the first few items into long-term memory and the others were lost from short-term memory.
B.	Jonas forgets all the items.	Thirty seconds is beyond the capacity of short-term memory.
C.	Jonas forgets the middle few items.	The first few items are in long-term memory and the last few items are still in short-term memory.
D.	Jonas remembers all the items.	The list is within the capacity limits of short-term memory.

Use the following information to answer Questions 19 and 20.

Tracy received the news that her audition for the lead role in the school play was successful.

Question 19

According to Lazarus and Folkman's Transactional Model of Stress and Coping, which one of the following may best describe Tracy's initial reaction to the news?

- A. She recalls that learning lines has always been easy.
- B. She views it as an opportunity to begin her acting career.
- C. She decides to learn the rest of the lines in the play's script with a friend.
- D. She decides that she does not have the resources to cope due to the stress of the news.

Question 20

Tracy learnt the lines of the play over several late nights and drank coffee to stay awake. However, when she stepped on the stage the week that rehearsals started, she forgot her lines. Later that week, Tracy walked into a coffee shop. As she smelled the coffee, Tracy recalled her lines.

This is because, for Tracy, coffee

- A. decreases performance anxiety.
- B. has become a state-dependent cue.
- C. has become a context-dependent cue.
- D. improves her ability to store information in long-term memory.

Use the following information to answer Questions 21–24.

Dr Dhanial investigated the effect of leading questions on recall. In the first week of the semester, university students were randomly allocated to two groups (Group A and Group B) and asked to estimate how often they ate chocolate during the summer holidays. Different forms of the question were used for each group:

- ‘Did you eat chocolate **frequently** and, if so, how much per week?’
- ‘Did you eat chocolate **occasionally** and, if so, how much per week?’

The table below represents Dr Dhanial’s results.

Group	Leading word	Estimate of chocolate consumption per week
A	frequently	4.1
B	occasionally	0.8

Question 21

The independent variable in Dr Dhanial’s study was the

- A. fallibility of memory.
- B. wording of the question.
- C. reconstruction of memory.
- D. estimation of eating chocolate.

Question 22

One week later, Dr Dhanial asked the participants in both groups to recall how often they ate chocolate during the summer holidays.

What finding would have led Dr Dhanial to conclude that participants’ memories of their eating habits had been altered due to the leading question?

- A. Both groups were likely to report not eating chocolate.
- B. Group A was more likely to report eating less chocolate than Group B.
- C. Group B was more likely to report eating less chocolate than Group A.
- D. Both groups were likely to report eating similar amounts of chocolate to each other.

Question 23

Which one of the following outlines a criticism of Dr Dhanial’s study?

- A. Participants were deceived by the use of leading questions.
- B. It is unlikely that the results of the investigation will be able to be replicated.
- C. Order effects may have an impact on participants’ responses due to boredom or fatigue.
- D. Using participants from one specific source means the results may not be generalised to the wider population.

Question 24

Dr Dhanial included a control group in a subsequent investigation.

It is likely that the participants in the control group were

- A. not asked to estimate how often they ate chocolate.
- B. observed to see how much chocolate they ate per week.
- C. asked only to estimate how often they ate chocolate per week.
- D. asked the leading question with a word that implies lower chocolate consumption.

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Use the following information to answer Questions 25–29.

Orla and Anthony are focused on playing a video game and are talking to each other intently. Orla is excited and does not realise time is passing quickly.

Question 25

While playing the video game with Anthony, Orla is likely to be closer to

- A. normal waking consciousness with perceptual distortions.
- B. normal waking consciousness with high levels of awareness.
- C. an altered state of consciousness with automatic processing.
- D. an altered state of consciousness with altered time orientation.

Question 26

While Orla was playing one part of the video game, she did not notice Anthony leave to get a drink.

This is most likely due to Orla experiencing

- A. a controlled process as the task is familiar to Orla.
- B. selective attention with increased content limitations.
- C. divided attention due to the ease with which Orla plays the video game.
- D. an automatic process as it requires high mental effort to play the video game.

Question 27

Which of the following describes the role of glutamate and adrenaline when Orla was learning how to play the video game?

	Role of glutamate	Role of adrenaline
A.	to make the post-synaptic neurons more likely to fire	to assist with activating the amygdala in her excitement
B.	to stimulate the release of cortisol in her excitement	to strengthen the synaptic connections between neurons
C.	to excite the neurons that are involved in her playing the game	to strengthen the response through increased release in the synapse
D.	to activate the hippocampus where the memory of playing is stored	to consolidate learning of the video game while she is playing

Question 28

The more Orla practices, the better she becomes at playing the video game.

This can be explained by

- A. long-term depression, which strengthens the synaptic connections that allow her to move her fingers.
- B. long-term depression, which improves stimulation of the neurons involved in her playing the video game.
- C. long-term potentiation, which increases synaptic communication when she presses the buttons on the controller.
- D. long-term potentiation, which decreases the synaptic transmission speed of the neurons involved in her playing the video game.

Question 29

Orla finds it difficult to stop playing the video game.

Which type of conditioning is this likely a result of and why?

	Type of conditioning	Why
A.	operant	Orla progresses to higher levels in the video game than Anthony.
B.	operant	Orla feels excited each time Anthony invites her to play the video game.
C.	classical	Orla gets bonus points in the video game when she reaches higher levels.
D.	classical	Orla has been conditioned to keep trying to reach the next level in the video game.

Question 30

Which one of the following is an objective measure that could be used to investigate possible treatments that would reduce sleep disturbances?

- A. electromyograph recording participants' brain wave patterns
- B. video monitor recording the time and duration of participants' awakenings
- C. a questionnaire with a rating scale measuring participants' anxiety about sleep
- D. a sleep diary in which the participants would record how they felt after each night's sleep

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Use the following information to answer Questions 31–34.

Charini is a 15-year-old who is having trouble staying awake at school. Despite being tired, Charini finds it hard to fall asleep until at least 11 pm.

Question 31

Which of the following best describes Charini's sleep problems?

	Name of sleep disorder	Characterised by
A.	sleep-wake shift	melatonin secretion peaking later in the day
B.	parasomnia	the inability to sleep due to melatonin reuptake
C.	sleep-onset insomnia	cortisol being released earlier in the morning to assist with waking up
D.	circadian phase disorder	melatonin secretion peaking early in the day

Question 32

Charini's sleep is likely to change after several nights of reduced sleep.

According to the restorative theory of sleep, Charini is likely to

- A. move straight from NREM to REM sleep.
- B. spend more time than she usually would in REM sleep.
- C. spend more time than she usually would in NREM sleep.
- D. experience the same REM and NREM sleep cycles as she usually would.

Question 33

To cope with the sleep deprivation, Charini drank coffee containing the stimulant caffeine.

After drinking caffeine, Charini's brain waves are likely to show an increase and a decrease in which brain wave patterns?

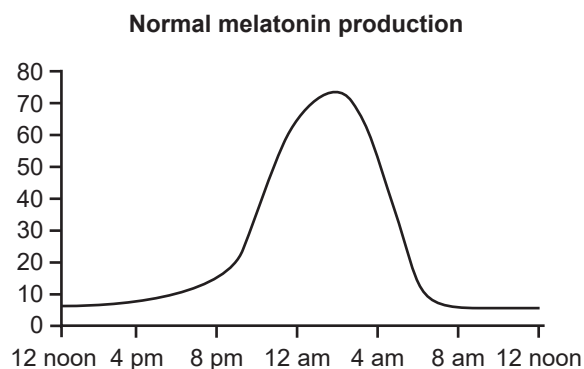
	Increased brain wave patterns	Decreased brain wave patterns
A.	alpha	beta
B.	beta	alpha
C.	theta	beta
D.	alpha	delta

Question 34

Charini's doctor recommends bright light therapy to address Charini's sleep issues. She provides Charini with a bright light therapy box.

Charini's doctor is likely to recommend that Charini administer the therapy

- A. after lunch to feel more energised during the day.
- B. in the morning to shift her ultradian rhythm backwards.
- C. early in the morning to advance her circadian rhythm forward.
- D. before she goes to bed to re-synchronise her sleep-wake cycle.

Question 35

Which one of the following options names and explains the type of rhythm shown in the graph above?

- A. ultradian rhythm, because melatonin levels fluctuate in the cycle
- B. ultradian rhythm, because melatonin release follows a 24-hour pattern peaking at 3 am
- C. circadian rhythm, because the level of melatonin peaks during the night and returns to normal during the day
- D. circadian rhythm, because the build-up of melatonin occurs as part of the cycle, which is shorter than 24 hours

Question 36

Sakura, who is 16 years old, is often found standing in her bedroom in the middle of the night. During these episodes, Sakura's mother tells her to go back to bed; however, Sakura needs to be guided to bed. She does not report feeling sleepy during the day.

Sakura is most likely experiencing

- A. an adolescent sleep-wake shift because her sleep disturbance is due to age.
- B. sleep-onset insomnia because she is able to have a conversation with her mother.
- C. a type of dyssomnia because she is having problems with the quality of her sleep.
- D. a type of parasomnia because she has experienced physiological activity and needs to be guided to bed.

Use the following information to answer Questions 37–39.

Professor Dominique wants to test an intervention for stress management. She plans to recruit participants from the university community and randomly allocate them to groups of four. Participants will be told that they will be locked in an escape room until they either solve the puzzles in there or an hour passes. After reading the participant information sheet about the specific purposes of the study and signing a consent form, the groups will be further randomised to either the experimental condition or the control condition.

The groups in the experimental condition will be given a 30-minute presentation by one of her research assistants on effective coping strategies to help alleviate stress, then put into the escape room. The groups in the control condition will immediately go into the escape room after providing consent.

Immediately after leaving the escape room, the participants will rate their feelings of stress across the study period, then Professor Dominique plans to discuss the findings with the participants and any uncomfortable experiences they had. The groups will be assessed on how long it took them to escape and their self-reported stress. The key outcome will be the difference between the two conditions.

Question 37

Based on the information provided above, what is an aspect of the design that might create bias in the findings?

- A. poor reliability of measurement
- B. conditions are not counterbalanced
- C. inconsistent procedures between conditions
- D. participants were not randomly sampled from the population

Question 38

Which experimental research design and sampling procedure is Professor Dominique adopting?

- A. repeated measures with random sampling
- B. independent groups with stratified sampling
- C. independent groups with convenience sampling
- D. repeated measures with random stratified sampling

Question 39

The ethics review panel requested modifications when it first received Professor Dominique's study proposal.

Based on the information provided above, what did Professor Dominique fail to consider?

- A. deception
- B. debriefing
- C. informed consent
- D. withdrawal rights

Question 40

Which of the following instruments correctly shows the recording that would be observed for a person who is under the influence of a depressant?

	Instrument	Recording
A.	electroencephalograph	greater presence of alpha and theta waves, indicating slowed functioning
B.	electro-oculograph	decrease in electrical activity, indicating the participant's skeletal muscles are relaxed
C.	electro-oculograph	bursts of waves, indicating an increase of jerky eye movements
D.	electromyograph	increase in electrical activity, indicating heightened activity in the nervous system

Question 41

Which of the following describes the strength of representing mental health on a continuum and using a biopsychosocial model of mental health?

	Strength of representing mental health on a continuum	Strength of biopsychosocial model
A.	shows the distinction between mental health and mental disorder	presents a hierarchy of biological, psychological and social factors in mental health
B.	allows for variations in the severity of a mental disorder	represents mental health as a range between being mentally healthy and having a mental disorder
C.	reduces the stigma of mental disorder as everyone is represented on the continuum	illustrates the biological, psychological and social components as having an equal risk of predisposing an individual to having a mental disorder
D.	allows for early signs of mental health problems to be identified	emphasises mental health as a combination of biological, psychological and social factors interacting together

Question 42

Which of the following outlines the informed consent considerations when researching children and adults with a mental disorder?

	Children	Adults with a mental disorder
A.	are not likely to understand complex research and are unable to give their own informed consent	are incapable of giving informed consent
B.	deception can be used in research with children if their parent/guardian has consented	a placebo treatment may be used with informed consent despite intentionally denying access to treatment
C.	children can be studied at school without informed consent	informed consent can be obtained from a legal guardian when an individual is incapable of giving it
D.	no informed consent is needed when studying children through observation	no informed consent is needed when adults with a mental disorder are admitted to the public health system

Question 43

Disorganised attachment can contribute to the development of a mental disorder because it is a

- A.** biological risk factor that results in interpersonal conflict.
- B.** precipitating risk factor that affects help-seeking behaviours.
- C.** social risk factor that leads to the inability to seek help and support.
- D.** psychological risk factor that prevents the ability to form relationships.

Question 44

Which one of the following is a difference between risk factors and protective factors in the progression of mental disorders?

- A.** A catastrophic event can be a risk factor but is not likely to be a protective factor.
- B.** Coping abilities and strategies can be risk factors but are not likely to be protective factors.
- C.** Biological factors, such as genetics, can present as risk factors but are not likely to be protective factors.
- D.** Risk factors reduce the occurrence of a mental disorder, whereas protective factors increase susceptibility to a mental disorder.

Use the following information to answer Questions 45 and 46.

Ekon wants to join his local emergency volunteer group. The volunteer group has identified five risk factors that could potentially impair a volunteer's social and emotional wellbeing while they are in the role. Using an online questionnaire, Ekon rates himself against each of the factors on a rating of 1–10, with 1 indicating low risk and 10 indicating high risk.

Question 45

The questionnaire that Ekon completed is

- A. using the concept of cumulative factors to assess his resilience.
- B. using the concept of cumulative risk to predict mental health outcomes.
- C. investigating statistics collected from the general population about risk factors.
- D. investigating statistics on the general population and possible mental health outcomes.

Question 46

The type of research method used in this scenario was

- A. interview with objective data.
- B. self-report with quantitative data.
- C. questionnaire with qualitative data.
- D. repeated measures with experimental data.

Question 47

Which of the following identifies biological risk factors and psychological risk factors that could contribute to the development of a mental disorder?

	Biological risk factors	Psychological risk factors
A.	genetic vulnerability and substance abuse	stress and a strong belief in one's abilities
B.	having poor sleep and family members with a similar mental disorder	continually thinking the same thoughts and being highly stressed
C.	experiencing anxiety as a child and worrying about the possibility of it returning	low self-efficacy and poor response to medication
D.	having a parent with a neurodegenerative disease and being concerned about the possibility of developing it	impaired reasoning and rumination

Use the following information to answer Questions 48–50.

Harper has changed her job and, at this point in time, does not feel as though she is coping with her new job. She feels fearful when getting ready for work and often experiences tension headaches, high blood pressure and loss of sleep due to worry.

Question 48

Which one of the following is Harper likely experiencing and why?

- A. both stress and anxiety as her symptoms are persistent and maladaptive
- B. stress even though she anticipates she will eventually manage her new job
- C. anxiety as her psychological symptoms are associated with her internal daily pressures
- D. a phobia as she has a persistent and intense fear of her job, which has an impact on her functioning

Question 49

Harper has decided that she wants to change her daily routine and exercise every day to improve her mental wellbeing.

If Harper is in the preparation stage of the transtheoretical model of behaviour change, she

- A. explicitly makes changes to her behaviour yet still weighs up the pros and cons in a cost-benefit analysis.
- B. underestimates the benefits of change and overestimates the costs of change to justify exercising every day of the week.
- C. weighs up the pros and cons in a cost-benefit analysis, and considers exercising one day but changes her mind the following day.
- D. has taken some behavioural steps to change her daily routine by exercising more frequently, but she is lacking confidence.

Question 50

After exercising consistently for a week, Harper experiences a relapse.

According to the transtheoretical model of behaviour change, which one of the following statements is true for Harper?

- A. Harper returns to the contemplation and maintenance stages.
- B. Harper decides that exercise is not for her and stops exercising altogether.
- C. Harper loses motivation to exercise but plans to start exercising again the following week.
- D. Harper has a slip-up in her exercise routine on the weekends, returning her to the maintenance stage.

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SECTION B

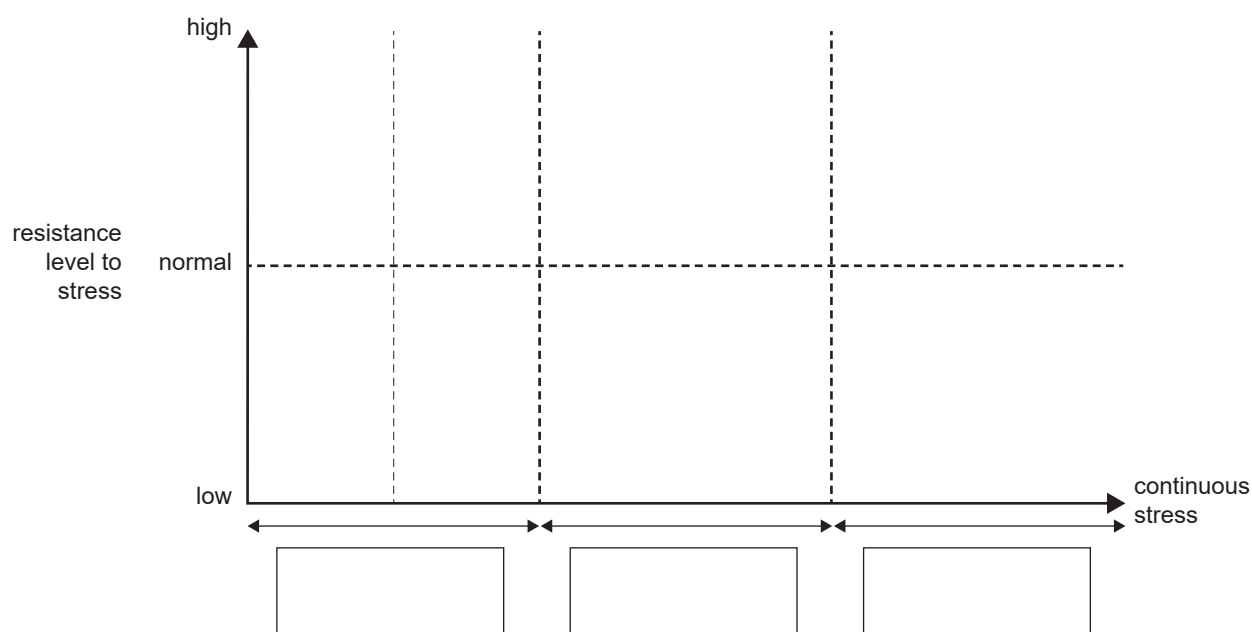
Instructions for Section B

Answer **all** questions in the spaces provided.

Question 1 (8 marks)

Bob works for a highly competitive and demanding advertising company with a stressful work environment. When he first started this job, he was surprised at the additional tasks he was required to complete on a daily basis. After many months, Bob started experiencing headaches and frequently caught colds.

- a. i. On the diagram below, draw a graphical representation of Selye's General Adaptation Syndrome to show how an individual typically reacts to a stressor. 1 mark
- ii. In the boxes provided on the diagram below, label the **three** stages that occur according to Selye's General Adaptation Syndrome. 1 mark



- b. Identify what stage of Selye's General Adaptation Syndrome Bob was in when he started frequently catching colds. Justify your response.

3 marks

- c. After working in this highly stressful environment for many years, Bob was diagnosed with a heart condition that required surgery.

Explain which stage of Selye's General Adaptation Syndrome Bob was experiencing when he was diagnosed with a heart condition.

3 marks

- c. When Matilda takes Biscuit for their daily walk, they pass a house with a dog that barks. Biscuit becomes extremely excited and barks in response. After many months, Biscuit becomes excited and barks when they get near the house, even before Biscuit hears or sees the dog.

- i. Using the language of classical conditioning, outline the three-phase process of how Biscuit learnt to get excited and bark in response.

3 marks

- ii. When the family with the dog moved away, Biscuit eventually stopped becoming excited and did not bark as they approached the house. Then, for a few weeks, Matilda had to take a different route due to roadworks. When they returned to the original route and walked past the house again, Biscuit became excited and barked.

Name and describe the process that is likely to have occurred for Biscuit.

3 marks

Name _____

Description _____

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SECTION B – continued
TURN OVER

Question 3 (12 marks)**Effect of caffeine on Parkinson's disease**

by F Marrow

Drinking caffeinated drinks has been associated with reduced tremors in people with Parkinson's disease. A recent study of 284 newly diagnosed Parkinson's disease patients has gone one step further to explore if the gender of a person changes the effects of caffeine on the severity of tremors. The researchers interviewed the patients to understand their motor and non-motor symptoms and their caffeine consumption history.

Of the patients, 204 were classified as caffeine drinkers (three or more cups per day, including coffee, tea and energy drinks) and 80 were classified as non-caffeine drinkers (0 cups per day).

Results showed that, compared to non-caffeine drinkers, caffeine drinkers:

- had early onset of symptoms
- were younger
- had fewer motor and non-motor symptoms
- had lower resting tremor scores.

Interestingly, the relationship between caffeine consumption and tremor severity was only significant in males.

Reference: Bang-Hoon Cho, Seong-Min Choi and Byeong C Kim, 'Gender-dependent effect of coffee consumption on tremor severity in de novo Parkinson's disease', *BMC Neurology*, (2019) 19:194, <<https://doi.org/10.1186/s12883-019-1427-y>>

- a. Explain the biological features of Parkinson's disease and their progression.

3 marks

- b. Write an operationalised independent variable for this study.

2 marks

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- c. Identify **one** extraneous variable that is evident in this study. Outline how this extraneous variable might have affected the results of this study and how this variable could have been controlled.

3 marks

- d. Identify **one** factor that these researchers should have considered when making generalisations about their findings and outline how this factor can affect generalisability.

2 marks

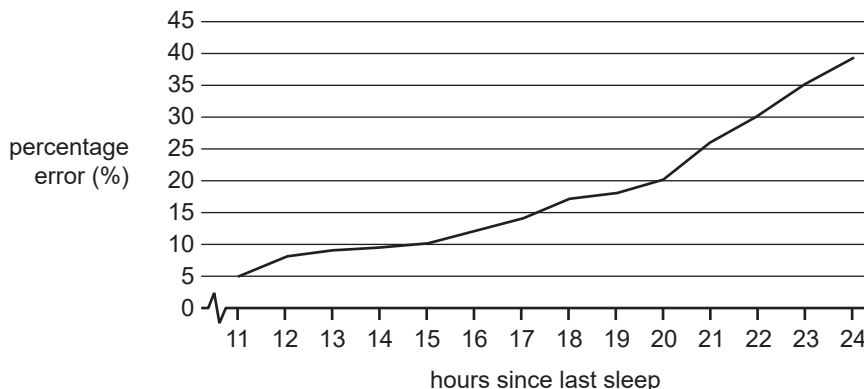
- e. Why would these researchers have studied the population that they did when undertaking their research?

2 marks

Question 4 (12 marks)

For her VCE Psychology practical investigation, Maria examined the effects of sleep deprivation on new parents. Her participants were parents who were part of the school community and who had infants aged three months to six months.

Maria asked her participants when they last slept. She calculated how long they had been awake and tested their performance on a test of visual-spatial reasoning. The speed and accuracy of the responses were recorded. The graph below shows the average speed and accuracy results combined into a single score.



- a. Interpret the results shown in the graph above.

2 marks

- b. Maria considers including another group of new parents. This group will not be sleep deprived but will have increasing levels of blood alcohol concentration (BAC).

How might she expect their results on the same test at a BAC of 0.05% and at a BAC of 0.10% to compare with the results from the sleep-deprived participants?

2 marks

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- c. Maria wants to compare affective functioning in sleep-deprived and non-sleep-deprived participants.

Suggest one measure that Maria could use to assess this type of functioning and predict the likely results.

2 marks

Measure _____

Likely results _____

- d. The participants in Maria's study are likely to have different sleep patterns compared to their infants.

Identify **four** ways in which sleep differs between infants and healthy adults.

4 marks

- e. With reference to the restoration theory of sleep, why is there a difference in sleep patterns between infants and healthy adults?

2 marks

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SECTION B – continued
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Question 5 (7 marks)

Achara was sharing stories with her son Kris about his childhood. Achara told Kris that every time they visited a supermarket, he would cry for her to buy chocolates. Achara was able to stop Kris from crying by ignoring his crying and continuing with her shopping.

- a. According to operant conditioning, what were the antecedent, behaviour and consequence for Achara in this story? 3 marks

Antecedent _____

Behaviour _____

Consequence _____

- b. What type of consequence for Achara is demonstrated in this story? 1 mark

- c. With reference to operant conditioning, describe another way Achara could have stopped Kris from crying. 3 marks

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Question 6 (8 marks)

- a. Identify **one** anterograde symptom that is likely to be experienced by people with Alzheimer's disease and explain the role of the brain structure that is associated with this symptom.

3 marks

- b. Relatives of people with Alzheimer's disease often report negative mental health indicators, such as self-blame and guilt about looking after themselves.

- i. Outline how rumination could become a risk factor for developing a mental health problem for these relatives.

2 marks

- ii. How could cognitive behavioural therapy be used to improve the mental health of these relatives? 3 marks

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Question 7 (10 marks)

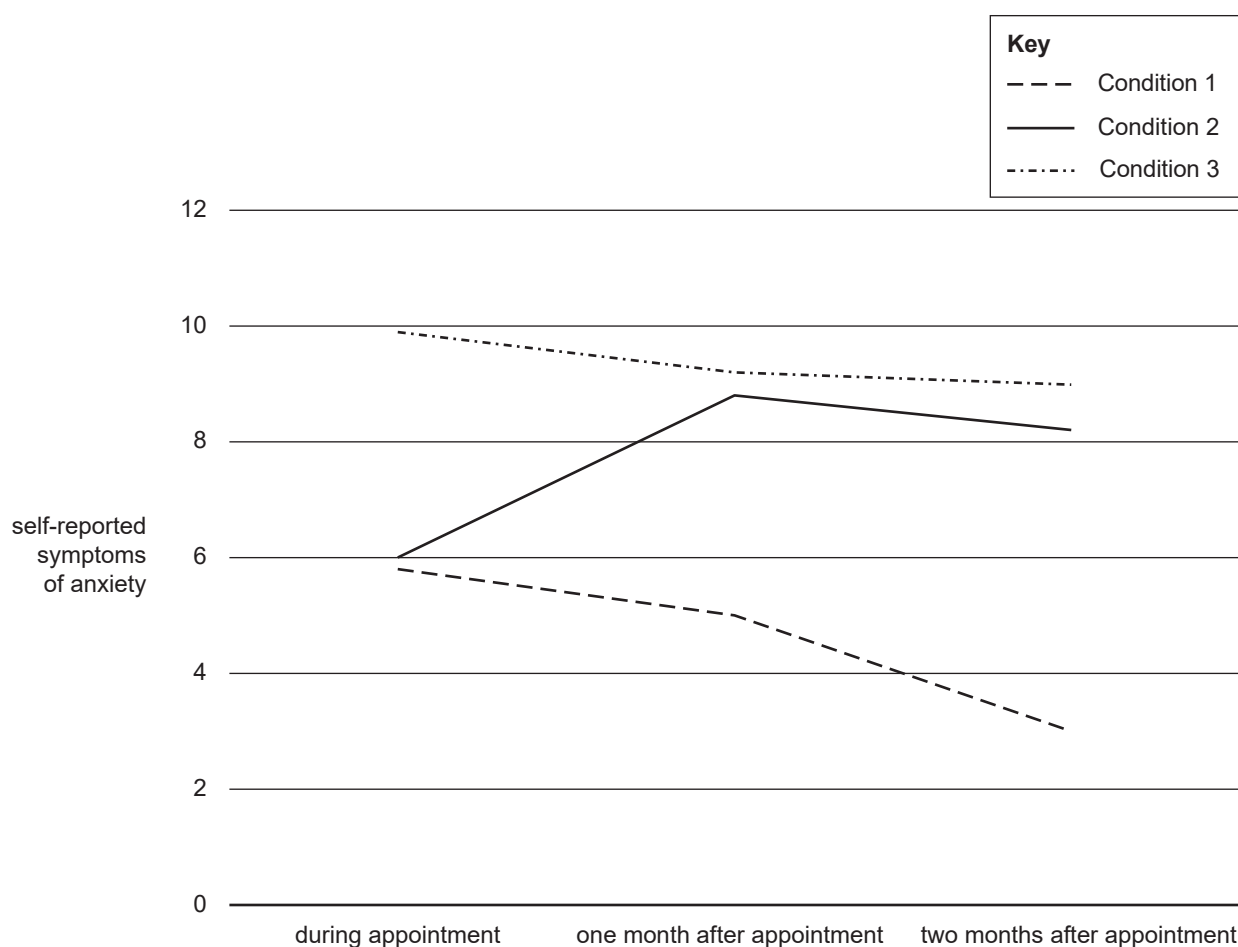
A research study compared the effects of two evidence-based treatment interventions on 87 patients with dental phobias. Participants were randomly allocated, in equal numbers, to one of three treatment conditions:

- Condition 1 – a single session of systematic desensitisation
- Condition 2 – administration of a benzodiazepine agent (taken before a dental appointment)
- Condition 3 – received no treatment for their dental phobia (control group)

In Condition 1 and Condition 2, the participants experienced fewer symptoms of anxiety during dental appointments than the participants in the control group (Condition 3), as measured by a self-report using a Likert scale.

One month after the dental appointment, phobic response returned for the participants in Condition 2 when they subsequently visited the dentist. However, the participants in Condition 1 did not have a return of their phobic response and showed further improvement when they visited the dentist two months later. Of these participants, 21 attended future dental appointments with minimal symptoms of anxiety, compared to only seven participants in Condition 2 and one participant in the control group (Condition 3).

The graph below shows the results of the study.



Analyse the results of the research study. In your response, include a comparison in terms of the similarities and differences in participants' symptoms of anxiety, as well as a discussion of how each condition (Condition 1 and Condition 2) acted to reduce participants' symptoms of anxiety.

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