



Psychology 2019 – Assessment Guide

Section A

VCAA Key Knowledge

Question

Answer guide

Use the following information to answer Questions 1-3.

Kelly has returned home from a strenuous day at work and is now relaxing in front of her television, eating a meal.

changes in levels of alertness as indicated by brain waves patterns (beta, alpha, theta, delta) due to drug-induced altered states of consciousness (stimulants and depressants)

Question 1

Which of the following brain waves would Kelly be most likely to be demonstrating at this moment?

- A. alpha
- B. beta
- C. theta
- D. delta

A *Alpha brain waves are associated with relaxation during normal waking consciousness.*

the roles of different divisions of the nervous system (central and peripheral nervous systems and their associated sub-divisions) in responding to, and integrating and coordinating with, sensory stimuli received by the body

Question 2

Which division of Kelly's nervous system is most likely to be dominant at this moment?

- A. sympathetic
- B. parasympathetic
- C. automatic
- D. fight, flight, freeze

B *The parasympathetic nervous system is dominant in the absence of threat or danger and works to maintain homeostasis. It also facilitates digestion.*

the roles of different divisions of the nervous system (central and peripheral nervous systems and their associated sub-divisions) in responding to, and integrating and coordinating with, sensory stimuli received by the body

Question 3

While watching TV, Kelly is reminded of an argument that she had with a co-worker during the day and becomes quite anxious. At this point, it is likely that

- A. her sweat glands would release more sweat, and her salivary glands would produce more saliva.
- B. her pupils would dilate, and she would find herself breathing very deeply.
- C. her temperature would drop, and she would release more adrenaline into her bloodstream.
- D. her salivary glands would produce less saliva, and her temperature would increase.

D *Anxiety responses are associated with the activation of the sympathetic nervous system that has the effect of reducing saliva production and raising one's temperature. The alternative answers all involve one parasympathetic response and consequently are incorrect.*

Use the following information to answer Questions 4-6.

Victor is a three-year-old child who complains of frequent and vivid nightmares to his 40-year-old mother, Suzie. Suzie comments that his sixteen-year-old sister Claire never used to get nightmares as a child.

sleep as a regular and naturally occurring altered state of consciousness that follows a circadian rhythm and involves the ultradian rhythms of REM and NREM Stages 1-4 sleep excluding corresponding brain wave patterns and physiological responses for each stage

Question 4

At what time would Victor be most likely to experience these nightmares and why?

- A. towards the beginning of the night because NREM sleep is more frequent towards the start of the sleep cycle
- B. towards the beginning of the night because REM sleep is more frequent towards the start of the sleep cycle
- C. towards the morning because REM sleep is more frequent towards the end of the sleep cycle
- D. towards the morning because NREM sleep is more frequent towards the end of the sleep cycle

C *Vivid dreams, including nightmares, are experiences that occur during REM sleep. As the night progresses, REM sleep becomes more frequent.*

the differences in sleep across the lifespan and how these can be explained with reference to the total amount of sleep and changes in a typical pattern of sleep (proportion of REM and NREM).

Question 5

How much sleep do Victor and Claire require respectively?

- A. Victor requires 9-10 hours of sleep, while Claire requires 10-12 hours of sleep
- B. Victor requires 8-9 hours of sleep, while Claire requires 10-12 hours of sleep
- C. Victor requires 10-12 hours of sleep, while Claire requires 9-10 hours of sleep
- D. Victor and Claire both require the same amount of sleep

C *Victor is still a young child and requires more sleep (10-12 hours) than his adolescent sister, who requires 9-10 hours of sleep.*

the differences in sleep across the lifespan and how these can be explained with reference to the total amount of sleep and changes in a typical pattern of sleep (proportion of REM and NREM).

Question 6

How much time are Victor, Claire and Suzie likely to spend in REM sleep?

- A. Victor experiences more time in REM sleep a night than Claire or Suzie
- B. Claire experiences more time in REM sleep a night than Victor or Suzie
- C. Suzie experiences more time in REM sleep a night than Victor or Claire
- D. Victor, Claire and Suzie spend around the same amount of time a night in NREM sleep

A *Victor spends more time in REM sleep, as he sleeps for longer than Claire and Suzie does, and a greater proportion of a child's sleep is spent in REM compared to an adolescent or adult sleep pattern.*

Use the following information to answer Questions 7-9.

After Wilfred failed a Year 8 maths test, he came to believe that he did not have the ability to be good at maths, and so he stopped putting in effort in maths classes. Nevertheless, he continued to get good marks in his humanities subjects and continued putting in strong effort in these subjects throughout his high school years.

the influence of psychological risk factors including rumination, impaired reasoning and memory, stress and poor self-efficacy

Question 7

In terms of Wilfred's perception of his maths ability it could be said that he had poor

- A. self-esteem.
- B. self-reliance.
- C. self-resilience.
- D. self-efficacy.

D *Self-efficacy is the belief in one's ability. It can be domain specific, so Wilfred may have poor self-efficacy in maths but a high self-efficacy in humanities. Note that self-efficacy is different from self-esteem (option A). Self-esteem refers to a person's evaluation of their sense of worth.*

operant conditioning as a three-phase model (antecedent, behaviour, consequence) involving reinforcers (positive and negative) and punishment (including response cost) that can be used to change voluntary behaviours, including stimulus generalisation, stimulus discrimination and spontaneous recovery (excluding schedules of reinforcement)

Question 8

Which theory of learning best explains Wilfred's change in behaviour in his maths classes?

- A. classical conditioning
- B. operant conditioning
- C. observational learning
- D. insight learning

B *Operant conditioning explains how behaviour is modified by the consequences of one's actions. In this case, the unpleasant consequence of failing a test acts as a punisher for effort in maths.*

operant conditioning as a three-phase model (antecedent, behaviour, consequence) involving reinforcers (positive and negative) and punishment (including response cost) that can be used to change voluntary behaviours, including stimulus generalisation, stimulus discrimination and spontaneous recovery (excluding schedules of reinforcement)

Question 9

When Wilfred makes a concerted effort in his humanities classes but not his maths classes he is demonstrating

- A. stimulus generalisation.
- B. stimulus discrimination.
- C. spontaneous recovery.
- D. extinction.

B *Wilfred demonstrates stimulus discrimination when he displays a different behaviour (making an effort/not making an effort) in the presence of the different antecedent (his humanities classes/his maths classes).*

the characteristics of scientific research methodologies and techniques of primary qualitative and quantitative data collection relevant to the selected investigation: experiments, self-reports, questionnaires, interviews and/ or use of rating scales; reliability and validity of data; and minimisation of experimental bias and confounding and extraneous variables

Question 10

Which of the following is essential for an experiment to establish a cause and effect relationship between variables?

- A. a hypothesis
- B. a control condition
- C. a placebo
- D. a large sample

B *A control condition is essential for establishing the effect of the independent variable on the dependent variable. While the other options are important elements of an experiment, they are not in and of themselves essential to establishing a cause and effect relationship between the independent and dependent variables.*

context-specific effectiveness, coping flexibility and use of particular strategies (exercise and approach and avoidance strategies) for coping with stress.

Question 11

In which situation are avoidance strategies most useful for coping with stress?

- A. when the individual has the power to change the stressful situation
- B. when the individual has a low self-efficacy
- C. when the individual has no control over the stressor
- D. when the individual has a low self-esteem

C *Avoidance coping strategies involve dealing with the emotional response to the stressor rather than dealing with the stressor itself. They are most effectively employed when the individual does not have the ability to change the stressor. Note that option B is incorrect as having low self-efficacy does not mean that the individual does not have the ability to change the stressor, but rather lacks the belief in their ability to change the stressor.*

the distinction between conscious and unconscious responses by the nervous system to sensory stimuli, including the role of the spinal reflex

Question 12

Which of the following statements is *incorrect*?

- A. the brain is responsible for initiating all mental process and behaviours
- B. the peripheral nervous system is responsible for transmitting sensory information from the body to the brain
- C. the peripheral nervous system is responsible for transmitting signals from the central nervous system to the internal organs
- D. the brain is responsible for coordinating all voluntary behaviour and thought

A *While the brain is responsible for all mental processes and almost all behaviours, the spinal cord is responsible for initiating the behaviour of the spinal reflex.*

Use the following information to answer Questions 13-16.

Patrick is a florist who receives an order over the telephone for 15 different flowers. The customer requests that they would like a Rose, Orchid, Daffodil, Lily, Geranium, Hibiscus, Sunflower, Marigold, Petunia, Poppy, Violet, Tulip, Lilac, Jasmine, and a Lavender. Patrick listens but before he has the time to write the order down the customer hangs up the phone. Once the customer has hung up, he quickly writes down as many flowers as he can remember, in no particular order.

the factors influencing a person's ability and inability to remember information, including context and state dependent cues, maintenance and elaborative rehearsal and serial position effect

Question 13

Which of the following flowers is Patrick most likely to remember for the order?

- A. rose
- B. lily
- C. sunflower
- D. tulip

A *A rose is the first flower from the list that was ordered, so Patrick is likely to have had sufficient time to rehearse and transfer this word to his long-term memory. In remembering the word, Patrick demonstrates the Primacy effect.*

the factors influencing a person's ability and inability to remember information, including context and state dependent cues, maintenance and elaborative rehearsal and serial position effect

Question 14

Which of the following flowers is Patrick least likely to remember for the order?

- A. rose
- B. lily
- C. sunflower
- D. tulip

C *The order for a sunflower came at the middle of the list of flowers ordered. This word was presented too late in the list for Patrick to have sufficient time to rehearse and transfer this information into his short-term memory, but also too early in the list to remain in Patrick's short-term memory and thus is likely to be forgotten.*

the factors influencing a person's ability and inability to remember information, including context and state dependent cues, maintenance and elaborative rehearsal and serial position effect

Question 15

Two flowers that Patrick was able to write down were 'orchid' and 'lavender'. For Patrick, writing down 'orchid' was due to information stored in his _____ and writing down 'lavender' was due to information stored in his _____.

- A. short-term memory; long-term memory
- B. short-term memory; short-term memory
- C. long-term memory; short-term memory
- D. long-term memory; long-term memory

C *Patrick was able to recall the word 'orchid' as he had sufficient time to rehearse the name of the flower and transfer it to his long-term memory. He was able to recall the order of 'lavender' because this order had been heard recently enough to remain in his short-term memory at the time he was writing the list down.*

methods to retrieve information from memory or demonstrate the existence of information in memory, including recall, recognition, relearning and reconstruction

Question 16

When Patrick wrote down the names of the flowers that he could remember, which method of retrieval did he demonstrate?

- A. serial recall
- B. cued recall
- C. free recall
- D. recognition

C Although Patrick was presented the names of the flowers in order (serially), he simply recalled as many names of flowers as he could from the telephone call in any order without any additional retrieval cues. This is a process of free recall.

mental health as a continuum (mentally healthy, mental health problems, mental disorders) influenced by internal and external factors that can fluctuate over time

Question 17

Which of the following is an accurate characteristic of how Psychologists describe mental health?

- A. mental health does not change over a lifespan
- B. mental health is not static throughout a lifespan
- C. mental health is not influenced by factors outside of the individual
- D. mental health is not influenced by internal factors within the individual

B Mental health fluctuates throughout the lifespan. It is not a static state, and is influenced by both internal and external factors.

mental health as a continuum (mentally healthy, mental health problems, mental disorders) influenced by internal and external factors that can fluctuate over time

Question 18

A person can be considered mentally healthy if they

- A. do not demonstrate symptoms of a mental disorder.
- B. do not demonstrate symptoms of a mental health problem.
- C. demonstrate the presence of mental wellbeing.
- D. demonstrate the presence of diagnosable symptoms.

C Mental health is characterised by the presence of wellbeing. According to the World Health Organisation, it is more than simply the absence of mental health problems or disorders.

Use the following information to answer Questions 19 and 20.

Brothers, Fin and Michael, grew up being largely inactive and disliking exercise. In Michael's early twenties, he became more concerned with his health and began regularly exercising at the gym. It has now been five years since he began his exercising regime and now Fin is interested in becoming fitter. After talking to Michael about wanting to make a change in his exercise regime, Fin joins a gym and intends to start regularly working out next month.

models of behaviour change with reference to the transtheoretical model including the stages of pre-contemplation, contemplation, preparation, action and maintenance/relapse.

Question 19

In terms of the transtheoretical model of behavioural change, what stage best describes where Fin is currently at?

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

B Fin knows that a change in his behaviour is imminent and he intends to begin regular exercise within the next month. This is characteristic of the preparation stage of the transtheoretical model.

models of behaviour change with reference to the transtheoretical model including the stages of pre-contemplation, contemplation, preparation, action and maintenance/relapse.

Question 20

In terms of the transtheoretical model of behavioural change, what stage best describes where Michael is currently at?

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

D *Michael has made an enduring change to his behaviour that has lasted beyond 12 months. This is best described as the maintenance stage of the transtheoretical model.*

the effects of chronic changes to the functioning of the nervous system due to interference to neurotransmitter function, illustrated by the role of dopamine in Parkinson's disease.

Question 21

Which of the following is a non-motor symptom commonly associated with Parkinson's disease?

- A. resting tremor
- B. depression
- C. muscle rigidity
- D. reduced balance

B *Depression is a common experience of people who suffer from Parkinson's disease. It is considered a non-motor symptom as it does not affect movement.*

the multi-store model of memory (Atkinson-Shiffrin) with reference to the function, capacity and duration of sensory, short-term and long-term memory

Question 22

The capacity of short-term memory is generally accepted as

- A. 3-7 items.
- B. 4-8 items.
- C. 5-9 items.
- D. 6-10 items.

C *The capacity of short-term memory is generally considered to be 7 ± 2 (or 5-9 items).*

Use the following information to answer Questions 23 - 25.

Nicola is learning how to serve a tennis ball. Every time she serves the ball correctly, her coach cheers. After a whole evening of practicing, her serving technique improves and she can get the ball within the boundaries on most occasions. Her younger sister, Tina, watches Nicola's serving technique very carefully and has developed a strong mental picture of what it looks like. At the end of the training session, Tina has an attempt at serving. Tina tries to emulate the serve of her sister but is not strong enough to hit the ball over the net.

operant conditioning as a three-phase model (antecedent, behaviour, consequence) involving reinforcers (positive and negative) and punishment (including response cost) that can be used to change voluntary behaviours, including stimulus generalisation, stimulus discrimination and spontaneous recovery (excluding schedules of reinforcement)

Question 23

The coach influenced Nicola's serving behaviour through the use of

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

A *Nicola's coach cheered when she served the ball correctly. This is the application of a desirable stimulus (cheering) as a consequence that increased the likelihood of the behaviour that preceded it (the correct serve).*

observational learning as a method of social learning, particularly in children, involving attention, retention, reproduction, motivation and reinforcement

Question 24

Tina's desire to imitate Nicola's serving technique demonstrates the effect of _____ on observational learning.

- A. attention
- B. retention
- C. reproduction
- D. motivation

D *The stage of motivation relates to the desire of the learner (in this case Tina) to imitate the behaviour of the model (in this case Nicola).*

observational learning as a method of social learning, particularly in children, involving attention, retention, reproduction, motivation and reinforcement

Question 25

Tina's inability to emulate Nicola's serving technique demonstrates an issue in the stage of

- A. attention
- B. retention
- C. reproduction
- D. motivation

C *The stage of reproduction requires the learner to have the physical capability to demonstrate the observed behaviour. In this case, although Tina has attended to and retained a memory of the serving technique, she is unable to demonstrate it because of a lack of strength.*

the characteristics of scientific research methodologies and techniques of primary qualitative and quantitative data collection relevant to the selected investigation: experiments, self-reports, questionnaires, interviews and/ or use of rating scales; reliability and validity of data; and minimisation of experimental bias and confounding and extraneous variables

Question 26

A bar graph can show only

- A. qualitative data.
- B. quantitative data.
- C. subjective data.
- D. objective data.

B *A bar graph can only display quantitative data. This data can be subjective or objective in nature. It cannot be used to represent qualitative data.*

the effects of chronic changes to the functioning of the nervous system due to interference to neurotransmitter function, illustrated by the role of dopamine in Parkinson's disease.

Question 27

Which of the following is most true regarding Parkinson's disease?

- A. medication that affects the precursors of dopamine can cure Parkinson's disease
- B. medication that affects the precursors of GABA can cure Parkinson's disease
- C. medication that affects the precursors of glutamate can cure Parkinson's disease
- D. there is currently no known cure for Parkinson's disease

D *Although medication that affects the precursors of dopamine are common treatments of the motor symptoms of Parkinson's disease, there is currently no known cure for the disease.*

Use the following information to answer Questions 28 and 29.

Mark is driving his car while listening to an audio book on the car stereo.

changes in a person's psychological state due to levels of awareness, controlled and automatic processes, content limitations, perceptual and cognitive distortions, emotional awareness, self-control and time orientation

Question 28

Mark is able to listen to the audiobook while driving with no noticeable impact on his driving ability. This suggests that driving is a _____ process for Mark.

- A. controlled
- B. automatic
- C. selective
- D. divided

B *Mark's ability to divide his attention between driving and listening to the audiobook at the same time without impairment to his driving ability indicates that driving is an automatic process that does not require selective attention.*

changes in a person's psychological state due to levels of awareness, controlled and automatic processes, content limitations, perceptual and cognitive distortions, emotional awareness, self-control and time orientation

Question 29

A cyclist suddenly pulls into Mark's lane and he is forced to swerve the car to avoid an accident. After successfully avoiding the accident, Mark has to rewind the audiobook because he could not remember what he had heard while avoiding the cyclist. This indicates that avoiding the cyclist involved _____ attention.

- A. controlled
- B. automatic
- C. selective
- D. divided

C *Although the task of driving is typically an automatic process for Mark, the sudden change in conditions (because of the incident with the cyclist) made his reactions a controlled process that required selective attention. As he had to devote all his attention to driving, he was no longer able to process the audiobook at this moment and thus had to rewind to listen to that section of the audio book again.*

Use the following information to answer Questions 30 and 31.

The following table identifies the different sleeping patterns of different species of animals.

Species of Animal	Average % of a day spent sleeping
Tiger	65.8%
Human (adult)	33.3%
Cow	16.4%

theories of the purpose and function of sleep (REM and NREM) including restoration theory and evolutionary (circadian) theory

Question 30

In terms of the purpose and function of sleep, the restorative theory of sleep would highlight that the cow requires less sleep than humans or tigers on average because

- A. sleeping allows the cow to hide from predators.
- B. the cow is more vulnerable to predators when it is sleeping.
- C. the cow does not require as much sleep to rest and recover from the day's activities, compared to tigers or humans.
- D. the cow's daily intake of food is achieved through ongoing grazing behaviour.

C *Restorative theories of sleep highlight the importance of sleep in rest and recovery. Animals who expend less energy throughout a day tend to sleep for shorter periods of time. Although sleeping makes the cow more vulnerable to predators, this is a justification for the evolutionary, not restorative theory of sleep.*

theories of the purpose and function of sleep (REM and NREM) including restoration theory and evolutionary (circadian) theory

Question 31

In terms of the purpose and function of sleep, the evolutionary (circadian) theory of sleep would highlight that tigers sleep for longer than humans or cows because

- A. sleeping allows the tiger to hide from predators.
- B. tigers are less vulnerable to predators than humans or cows.
- C. the tiger does not require as much sleep to rest and recover from the day's activities compared humans or cows.
- D. the tiger's daily intake of food is achieved through ongoing grazing behaviour.

B *The evolutionary theory of sleep suggests that an animal's sleeping patterns evolve in such a way that maximises the animal's chances of survival. Humans and cows have a vulnerability to predators while sleeping, while tigers have few natural predators and are relatively less vulnerable when asleep.*

Use the following information to answer Questions 32-34.

Ingrid and her husband Ronald are at a party. Ingrid is very tired as their baby daughter Bibi cried throughout the entirety of the previous night, and Ingrid has not yet had a chance to catch up on sleep. Ronald has had eight standard alcoholic drinks at the party and then offers to drive Ingrid home.

changes in levels of alertness as indicated by brain waves patterns (beta, alpha, theta, delta) due to drug-induced altered states of consciousness (stimulants and depressants)

Question 32

After consuming the eight standard alcoholic drinks it is likely that the frequency of Ronald's brain waves have _____ because of the _____ effects of alcohol.

- A. decreased; depressant
- B. increased; depressant
- C. decreased; stimulant
- D. increased; stimulant

A *Alcohol is a depressant which has the effect of slowing down the psychological and physiological processes of the body. Alcohol induced altered states of consciousness are commonly associated with lower frequency brain waves than the beta waves that dominate an alert state of normal waking consciousness.*

the effects on consciousness (cognition, concentration and mood) of one night of full sleep deprivation as a comparison with effects of legal blood-alcohol concentrations.

Question 33

On the drive home, Ronald is pulled over by a police officer who breathalyses him. Ronald blows a reading of BAC 0.07% and Ingrid offers to drive him home. At this point in time, Ingrid has been awake for 24 hours. In this case

- A. Ingrid will be able to drive as safely as she normally would.
- B. Ronald's driving ability is likely to be worse than Ingrid's.
- C. Ingrid's driving ability is likely to be worse than Ronald's.
- D. Ingrid's driving ability is likely to be similarly impaired compared to Ronald's.

C Australian researchers Dawson and Reid (1997) found that performance on tasks that are essential in driving following 24 hours of sustained wakefulness was equivalent to that of someone with a BAC of 0.10%, which is higher than Ronald's BAC level.

theories of the purpose and function of sleep (REM and NREM) including restoration theory and evolutionary (circadian) theory

Question 34

When they arrive home, both Ronald and Ingrid go straight to sleep. They both sleep for eight hours. However, because of Ronald's alcohol intake, he experiences far less REM sleep than Ingrid. The next day it is likely that

- A. Ingrid's body will feel less rested than Ronald's.
- B. Ronald's mood will be better than Ingrid's.
- C. Ingrid's memory of the events of the previous night will be better than Ronald's.
- D. all of the above.

C REM sleep is a key component of memory consolidation. As Ronald has had less REM sleep than Ingrid, it is likely that he has impaired his ability to consolidate his memory of the evening into his long-term memory store. Poor REM sleep is also associated with a lowered mood. Nevertheless, as both Ingrid and Ronald have sufficient NREM sleep, it is unlikely that Ingrid is more physically rested than Ronald.

Use the following information to answer Questions 35 and 36.

Jessica and her best friend Derrick have just started university. Jessica is a motivated and confident student who believes in her ability to work hard and achieve the results she desires. She is not always happy but is in control of her emotions and has an overall sense that life is worth living and that she is a valuable person.

Derrick has had some personal issues recently and currently feels down about himself. He often feels that he does not deserve to be at university, even though he achieved well above the required ATAR for entrance into his course. Nevertheless, he feels constantly anxious when he is on the university campus over the first semester, so much so that he decides to discontinue his studies mid-way through the year.

mental health as a continuum (mentally healthy, mental health problems, mental disorders) influenced by internal and external factors that can fluctuate over time

Question 35

In terms of the mental health continuum, Jessica's experiences are consistent with someone _____ whereas Derrick's experiences are consistent with someone experiencing _____.

- A. being mentally healthy; a mental health problem
- B. having a mental health problem; a mental disorder
- C. being mentally healthy; a mental disorder
- D. having a mental health problem; a mental health problem

C Jessica has the characteristics of someone who is mentally healthy, as she is experiencing the presence of wellbeing. Several symptoms seem to suggest that Derrick is most likely experiencing a mental disorder. He currently experiencing distress (feeling constantly anxious at university), and dysfunction (his anxiety is making it difficult to remain at university). These symptoms have also existed over a prolonged period of time.

resilience as a positive adaption to adversity including the relative influence of protective factors with reference to: adequate diet and sleep (biological); cognitive behavioural strategies (psychological); support from family, friends and community (social)

Question 36

Which of the following is a biological protective factor that may assist Derrick?

- A. support from community groups
- B. support from friends
- C. cognitive behavioural strategies
- D. adequate diet

D Having an adequate diet is a biological protective factor that can assist the cultivation of resilience and assist Derrick.

Use the following information to answer Questions 37-40. Dr Jones is interested in investigating whether Victorian high school students' levels of happiness change over the course of high school. He enlists the assistance of a local high school and chooses ten Year 7 students and ten Year 12 students at random to give him a self-reported happiness rating on the last day of school (with all participants surveyed on this day). The data collected from these students are presented below. In this investigation, a score of 10 indicates that the student was very happy, and a score of 1 indicates that the student was very unhappy.

	Year 7 students	Year 12 students
	7	7
	7	10
	8	6
	6	5
	5	7
	7	2
	7	8
	7	9
	8	1
	8	9
Mean	7	6.4

use an appropriate experimental research design including independent groups, matched participants, repeated measures and cross-sectional studies

Question 37

Which of the following best describes Dr Jones' method of studying happiness?

- A. random allocation
- B. longitudinal study
- C. random sampling
- D. cross-sectional study

D *This is a cross sectional study because Dr Jones has chosen to test a sample of existing groups (Year 7 and Year 12 students) at the same time on the same dependent variable (self-reported happiness ratings). He has gathered his sample at convenience and he has not randomly allocated the students to these groups.*

recognise the difference between statistics that describe a specific sample and the use of statistics to make inferences about the population from which the data were drawn

Question 38

What type of data has Dr Jones presented in this table?

- A. qualitative data
- B. objective data
- C. inferential data
- D. descriptive data

D *The data presented inside the main table can be considered quantitative raw data, but this is not an option to choose from. The data in the shaded area is quantitative descriptive data as it is numerical data that organises the raw data and assists the interpretation of that data. Note that this data alone is not sufficient to understand the statistical significance of the data, and thus it is not inferential data.*

organise, present and interpret data using tables, bar charts, line graphs, percentages, calculations of mean as a measure of central tendency and understanding of standard deviation as a measure of variation around the mean

Question 39

Dr Jones realised that the Year 12 students had a _____ standard deviation than the Year 7 students, indicating a _____ variation of happiness levels in the older students.

- A. higher; greater
- B. lower; greater
- C. higher; smaller
- D. lower; smaller

A *The ratings reported by the Year 12 students showed a greater degree of variation (ranging from 1-10) compared to the ratings reported by the Year 7 students (whose ratings ranged from 5-8).*

use basic principles of reliability and validity in evaluating research investigations undertaken

Question 40

The small sample size used in this investigation means that the data he has collected is unlikely

- A. to be reliable.
- B. to be valid.
- C. to be reliable or valid.
- D. to support his hypothesis.

C *Dr Jones' has used very small sample size, and this means his experiment is unlikely to be reliable, in that he is unlikely to get the same results were the experiment repeated. It is also unlikely to be valid, as the sample is not very representative of the population, and thus his data lacks external validity.*

the multi-store model of memory (Atkinson-Shriffin) with reference to the function, capacity and duration of sensory, short-term and long-term memory

Question 41

In the Atkinson-Shiffirin multi store model of memory, a similarity between the stores of sensory memory and long-term memory is that they are both stores

- A. with an unlimited duration.
- B. with a limited capacity.
- C. that we are not consciously aware of.
- D. that we are consciously aware of.

C *Sensory memory and long-term memories are both memory stores that have an unlimited capacity and we are not consciously aware of.*

Use the following information to answer Questions 42 - 44.

Dr Cort, a Psychologist, is investigating whether the regular practice of meditation can improve symptoms of stress.

independent and dependent variables and operationalisation of variables

Question 42

Which of the following is a valid operational definition of the dependent variable of Dr Cort's research?

- A. whether participants meditate for three hours per week or do not meditate at all
- B. a self-reported level of stress indicated by a twenty-item rating scale
- C. whether participants practice "loving kindness" meditation for three hours per week or not at all
- D. a description of the stressors that face the participants over a one-week period

B *The dependent variable in this study is stress and it can be validly operationalised by a self-report of the stress level experienced by the participants.*

the measurement of physiological responses to indicate different states of consciousness, including electroencephalograph (EEG), electromyograph (EMG), electro-oculograph (EOG) and other techniques to investigate consciousness (measurement of speed and accuracy on cognitive tasks, subjective reporting of consciousness, including sleep diaries, and video monitoring)

Question 43

The Psychologist could use _____ to most accurately determine whether a participant had entered a meditative state.

- A. an electromyograph
- B. an electroencephalograph
- C. an electro-oculograph
- D. video monitoring

B *The electroencephalograph (EEG) will show the clearest indication of the individual's state of consciousness. In a meditative state you would expect the EEG to show significantly different brainwaves than normal waking consciousness. The electromyograph would be less effective as lower electrical activity produced by the muscles during meditation may not differ significantly from those shown in a relaxed but wakeful state. The electro-oculograph would not provide any information of relevance as changes to the electrical activity of the orbital muscles of the eye is not common during mediation. Video monitoring would not reveal the subjective experience of the participant while meditating.*

minimise confounding and extraneous variables by considering type of sampling procedures, type of experiment, counterbalancing, single and double blind procedures, placebos, and standardised instructions and procedures

Question 44

In order to mitigate (lessen the severity of) any possible experimenter effects, it would be important for Dr Cort to

- A. be unaware of the purpose of the experiment.
- B. employ the services of a research assistant who was unaware of which participants are allocated the different groups of the experiment to administer the experiment.
- C. employ a research assistant to provide the participants in the control group with a placebo pill.
- D. employ a different research assistant to give different instructions to participants in the control and experimental groups.

B *The experimenter effect is mitigated when the experiment is administered by an individual (such as a research assistant) who is unaware of which participants are allocated to which groups of the experiment. In this way, they cannot express a bias to influence the outcome of the experiment in line with a hypothesis.*

Use the following information to answer Questions 45 and 46.

Ted is a four-year-old boy who has recently started sleepwalking.

the distinction between dyssomnias (including sleep-onset insomnia) and parasomnias (sleep walking) with reference to the effects on a person's sleep-wake cycle

Question 45

Ted's sleepwalking is a type of _____ that often _____.

- A. parasomnia; leads to a reduced quality of sleep
- B. dyssomnia; leads to a reduced quality of sleep
- C. parasomnia; has no impact on sleep quality
- D. dyssomnia; has no impact on sleep quality

A *Sleepwalking is a parasomnia in that it an abnormal behaviour associated with sleep. Sleepwalking is commonly associated with a reduced sleep quality and consequently daytime fatigue.*

the distinction between dyssomnias (including sleep-onset insomnia) and parasomnias (sleep walking) with reference to the effects on a person's sleep-wake cycle

Question 46

Sleepwalking is most common in which stage of sleep?

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

C *Sleepwalking is most common during slow wave sleep, NREM stages 3 and 4.*

Use the following information to answer Questions 47-49.

Oswald is a 40-year-old man who has suffered with chronic experiences of anxiety and phobia over many years. He currently uses a short acting anti-anxiety medication to help him manage his symptoms and is able to maintain a career in business and a rich social life. Nevertheless, he has experienced some unwanted side effects from the medication and his doctor has recently recommended him to be a participant for a placebo-controlled trial of a new medication that could benefit Oswald.

evidence-based interventions and their use for specific phobia with reference to: the use of short-acting anti-anxiety benzodiazepine agents (gamma amino butyric acid [GABA] agonists) in the management of phobic anxiety and relaxation techniques including breathing retraining and exercise (biological); the use of cognitive behavioural therapy (CBT) and systematic desensitisation as psychotherapeutic treatments of phobia (psychological); psychoeducation for families/supporters with reference to challenging unrealistic or anxious thoughts and not encouraging avoidance behaviours (social).

Question 47

What sort of medication is Oswald likely to be taking for his anxiety?

- A. benzodiazepine
- B. Ritalin
- C. levodopa
- D. acetylcholine agonists

A *Benzodiazepines are a common short acting anti-anxiety medication often used in the treatment of anxiety disorders (such as phobia).*

evaluate investigative procedures and possible sources of bias, and suggest improvements, with reference to identification of potential extraneous and confounding variables including individual participant differences, non-standardised instructions and procedures, order effects, experimenter effect and placebo effects

Question 48

What is the purpose of using a placebo in this experimental design?

- A. to mitigate the single-blind
- B. to mitigate individual participant differences
- C. to standardise instructions and procedures
- D. to mitigate the placebo effect

D *A placebo mitigates the placebo effect by making the participants blind to (unaware of) the group that they have been allocated too.*

ethical implications in the study of, and research into, mental health, including informed consent and use of placebo treatments.

Question 49

What is a potential ethical issue that may arise in this study?

- A. this sort of experiment is unlikely to be approved by an ethics committee
- B. Oswald is not of sound mind to offer consent on his own behalf
- C. Oswald may suffer harm because he may not be taking any medication during the experiment
- D. Oswald may experience an improvement to his symptoms during the experimental procedure

C *If Oswald is allocated to the control group he will receive a placebo treatment that contains no active medication and thus will be at increased risk of harm through experiencing a period without medicinal treatment. Option A is incorrect as placebo controlled medical trials are permitted by ethics committees as long as the ethical guidelines are strictly adhered to. Option B is also incorrect as Oswald demonstrates the soundness of his mind through his ability to hold a job and maintain healthy relationships.*

the role of the neuron (dendrites, axon, myelin and axon terminals) as the primary cell involved in the reception and transmission of information across the synapse (excluding details related to signal transduction)

Question 50

In a neuron, the role of the dendrites are to

- A. receive a chemical signal.
- B. receive an electrical signal.
- C. send a chemical signal.
- D. send an electrical signal.

A *The role of the dendrites is to receive chemical signals in the form of neurotransmitters from the synaptic gap.*

Section B

VCAA Key Knowledge

Question

Answer guide

Lucy is an adult who reports to her doctor that she is feeling tired all the time. Her doctor refers her to a sleep laboratory to get a better picture of the causes of her tiredness.

the measurement of physiological responses to indicate different states of consciousness, including electroencephalograph (EEG), electromyograph (EMG), electro-oculograph (EOG) and other techniques to investigate consciousness (measurement of speed and accuracy on cognitive tasks, subjective reporting of consciousness, including sleep diaries, and video monitoring)

Question 1a (1 mark)

What is one method of collecting objective quantitative data that could be used at the sleep laboratory to better understand Lucy's sleep patterns?

Answer:

- *Electroencephalograph (EEG)*
- *Electro-oculograph (EOG)*
- *Electrocardiogram (ECG or EKG)*
- *Electromyograph (EMG)*
- *Body temperature*

Marking protocol:

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

the measurement of physiological responses to indicate different states of consciousness, including electroencephalograph (EEG), electromyograph (EMG), electro-oculograph (EOG) and other techniques to investigate consciousness (measurement of speed and accuracy on cognitive tasks, subjective reporting of consciousness, including sleep diaries, and video monitoring)

Question 1b (1 mark)

What is one method of collecting objective qualitative data that could be used at the sleep laboratory to better understand Lucy's sleep patterns?

Answer:

- *Video recording*
- *Audio recording*
- *Photographs*

Marking protocol:

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

the effects of partial sleep deprivation (inadequate sleep either in quantity or quality) on a person's affective (amplified emotional responses) behavioural and cognitive functioning

Question 1c (1 mark)

Describe how chronic partial sleep deprivation may affect Lucy's affective functioning.

Answer:

- *Lucy is likely to have amplified emotional responses because of her chronic sleep deprivation. (This may take the form of being more irritable than when not tired or experiencing mood disturbances such as feelings of sadness.)*

Marking protocol:

One mark for the above point.

the interventions to treat sleep disorders including cognitive behavioural therapy (with reference to insomnia) and bright light therapy (with reference to circadian phase disorders).

Question 1d (2 marks)

After completing the sleep study at the sleep lab, Lucy's doctor suggests that her sleeping patterns are consistent with someone who is experiencing chronic sleep-onset insomnia. She suggests that cognitive behavioural therapy (CBT) could be useful. Describe an example of a cognitive therapy and a behavioural therapy that could be useful in assisting Lucy with her insomnia.

Answer:

- *Identifying, challenging and replacing beliefs about sleep that contribute to the sleep-onset insomnia may be a useful cognitive therapy for Lucy (or any other relevant cognitive therapy used in CBT for insomnia).*
AND
- *She may also benefit from a behavioural therapy such as sleep hygiene training, where Lucy would learn about setting the right conditions for sleep (such as low light and temperature in the bedroom).*
OR
- *She may also benefit from a behavioural therapy such as stimulus control, where Lucy would only stay in the bedroom when sleepy or asleep (and not engage in activities incompatible with sleep, such as using her mobile phone in bed).*
OR
- *She may also benefit from a behavioural therapy such as sleep restriction, where Lucy would maintain a strict schedule of bedtimes and rising times to encourage her to feel sleepier at appropriate times.*
OR
- *She may also benefit from a behavioural therapy such as relaxation training, where Lucy would be taught to control muscular tension through relaxation exercises, to encourage sleep.*

Marking protocol:

One mark for one cognitive therapy, and one mark for one behavioural therapy used in CBT for insomnia.

Note: the name of the therapy is not required if a sufficient explanation of the therapy is provided.

The doctor also believes that Lucy's chronic sleep-onset insomnia may have impacted her circadian rhythm.

changes to a person's sleep-wake cycle and susceptibility to experiencing a circadian phase disorder, including sleep-wake shifts in adolescence, shift work and jet lag

Question 1ei (3 marks)

How can sleep-onset insomnia influence an individual's circadian rhythm and how can this perpetuate the experience of fatigue?

Answer:

- *Over time, a delayed sleep onset may cause an individual's circadian rhythm to be misaligned with the 24-hour day/night cycle, particularly if the individual compensates for the lack of sleep by sleeping in the next day.*
- *The individual's circadian rhythm may be shifted so that they do not feel sleepy until later and do not feel like waking up until later the following day.*
- *This misalignment of circadian rhythm with normal day/night cycles can cause a reduction in the quality and quantity of sleep experienced by an individual (therefore perpetuating the experience of fatigue).*

Marking protocol:

One mark for each of the above points.

the interventions to treat sleep disorders including cognitive behavioural therapy (with reference to insomnia) and bright light therapy (with reference to circadian phase disorders).

Question 1eii (1 mark)

What therapy might a professional suggest to help manage sleeping problems that relate to the circadian rhythm?

Answer:

- *A professional may recommend that a patient use bright light therapy to help entrain a circadian rhythm to normal day/night cycles.*
- *A professional may recommend that a patient use sleep restriction to help entrain a circadian rhythm to normal day/night cycles.*

Marking protocol:

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

Dr Singh is a researcher who is investigating the relative impact of different biological evidence-based interventions commonly used to treat phobia. He placed advertisements in 20 different psychologists' clinics around Melbourne, inviting people who experience a phobia to participate in his study. Through this technique, he was able to gather 90 participants. He ran his experiment with a single-blind procedure and randomly allocated participants to one of three groups. The groups were exposed to the following treatments:

- Group 1: Take two placebo tablets per day.
- Group 2: Complete 15 minutes of breathing retraining exercises per day.
- Group 3: Take two tablets per day that contain a GABA agonist.

Participants self-assessed their experience of phobic symptoms on a 1-10 scale, where 1 indicated no symptoms and 10 indicated severe symptoms. These ratings were collected from participants on the day prior to beginning their treatment and after four weeks of using the treatment. After four weeks of using the treatment, the participants stopped using the treatment and returned to their normal daily routines. Two weeks after this, their level of phobic symptoms was again assessed. The mean results for each group of the experiment were as follows:

	Day prior to treatment	After four weeks of using treatment	Two weeks after having stopped treatment
Group 1 (placebo tablets)	6.5	6.1	6.5
Group 2 (breathing retraining)	7.2	6.2	6.2
Group 3 (GABA agonists)	6.3	3.8	6.3

select appropriate sampling procedures for selection and allocation of participants including random sampling, stratified sampling, convenience sampling and random allocation of participants to groups

the characteristics of scientific research methodologies and techniques of primary qualitative and quantitative data collection relevant to the selected investigation: experiments, self-reports, questionnaires, interviews and/ or use of rating scales; reliability and validity of data; and minimisation of experimental bias and confounding and extraneous variables

Question 2a (3 marks)

What technique did Dr Singh use to gather his sample and what are the implications of using this technique in terms of the validity of his research? Fully explain your answer.

Answer:

- *Dr Singh used convenience sampling (not all members of his population [people who suffer from phobia] had an equal chance of selection for his experiment).*
- *The use of convenience sampling diminishes the validity of his results.*
- *He cannot apply his results to a larger cohort than the specific sample he used for this research, given that his sample is unlikely to represent the population. He cannot legitimately generalise his results (and thus the experiment lacks external validity).*

Marking protocol:

One mark for each of the above points.

draw conclusions consistent with evidence and relevant to the question under investigation

Question 2b (4 marks)

What conclusions can be drawn about the relative effectiveness of the three biological evidence-based interventions for specific phobia studied in this experiment?

Answer:

- *The data suggests that both breathing retraining and GABA agonists reduce the severity of phobic symptoms experienced more than a placebo treatment, over the four-week treatment period.*
- *GABA agonists appear to be much more effective than breathing retraining techniques in reducing the severity of phobic symptoms, but only when they are being regularly used (as shown over the four-week treatment period).*
- *In the two weeks after the treatments had stopped being provided, the group who had regularly practiced breathing retraining techniques showed that their lowered experience of phobic symptoms endured after the treatment, compared to those of the participants who used GABA agonists.*
- *This indicates that GABA agonists may not maintain a lowered level of symptom severity unless they are consistently taken.*

Marking protocol:

One mark for each of the above points.

the role of neurotransmitters in the transmission of neural information between neurons (lock-and-key process) to produce excitatory effects (as with glutamate) or inhibitory effects (as with gamma amino butyric acid [GABA])

Question 2c (4 marks)

Describe the role of GABA in neural communication between neurons, once an action potential reaches the axon terminal. Refer to the lock and key process in your response.

Answer:

- *When an action potential reaches the axon terminals of the presynaptic neuron, GABA is released from the vesicles into the synaptic gap.*
- *GABA has a chemically distinct shape that acts like a key that can match with and affect the correspondingly-shaped receptor sites on the post-synaptic neuron that act like a lock.*
- *When GABA reaches its complementary receptor site, it binds to it, which has an inhibitory effect on the post-synaptic neuron...*
- *...making the post-synaptic neuron less likely to generate an action potential.*

Marking protocol:

One mark for each of the above points.

evidence-based interventions and their use for specific phobia with reference to: the use of short-acting anti-anxiety benzodiazepine agents (gamma amino butyric acid [GABA] agonists) in the management of phobic anxiety

Question 2d (2 marks)

Why are GABA agonists commonly used in the treatment of phobia?

Answer:

- *GABA agonists have the effect of increasing neural inhibition in the central nervous system which increases a sense of calm and can counteract a feeling of anxiety.*
- *This is particularly useful in the treatment of phobias, as anxiety disorders such as phobia are commonly associated with dysfunctional GABA system (a failure to produce, release or receive the correct amount of GABA).*

Marking protocol:

One mark for each of the above points.

use an appropriate experimental research design including independent groups, matched participants, repeated measures and cross-sectional studies

evaluate investigative procedures and possible sources of bias, and suggest improvements, with reference to identification of potential extraneous and confounding variables including individual participant differences, non-standardised instructions and procedures, order effects, experimenter effect and placebo effects

Question 2e (3 marks)

What experimental design has Dr Singh used, and consequently, which extraneous variable is his experiment vulnerable to? Which experimental research design could control for this extraneous variable?

Answer:

- *Dr Singh has used an independent groups design.*
- *This may have led to an increased risk of the extraneous variable of individual participant differences between the groups of the experiment (for example, variation between the groups in the severity of phobia experienced by participants, or the nature of the phobic stimulus).*
- *The experimental design that could control for individual participant differences is a repeated measures design (or a matched participants design).*

Marking protocol:

One mark for each of the above points

Gerald and his younger sister Rita live on a cattle farm. When Rita was young, her farm had a faulty electric fence and bulls would often wander into the paddock where she had a set of swings. She had many experiences of playing on the swings and suddenly having a bull charge towards her, which upset her greatly. By the time she was four years old, she felt terrified any time she was near the swing set and refused to play on it any longer. After the bulls ran into the play area, Gerald would try to fix the electric fence without his parents' assistance. Gerald was often electrocuted by the fence when he reached for it and he quickly learned to stop touching the electric fence, seeking the help of an adult.

classical conditioning as a three-phase process (before conditioning, during conditioning and after conditioning) that results in the involuntary association between a neutral stimulus and unconditioned stimulus to produce a conditioned response, including stimulus generalisation, stimulus discrimination, extinction and spontaneous recovery

Question 3a (3 marks)

Using the language of classical conditioning, explain the process by which Rita acquired her fear of the swing set.

Answer:

- *Initially the swing set was a neutral stimulus for Rita. A charging bull was an unconditioned stimulus that naturally generated an unconditioned response of fear by Rita.*
- *The repeated pairing of the neutral stimulus of the swing set followed closely by the unconditioned stimulus of exposure to a charging bull eventually led to Rita developing an association between the stimuli...*
- *...so that now the swing set has become a conditioned stimulus that automatically generates the conditioned response of fear within Rita.*

Marking protocol:

One mark for each of the above points.

operant conditioning as a three-phase model (antecedent, behaviour, consequence) involving reinforcers (positive and negative) and punishment (including response cost) that can be used to change voluntary behaviours, including stimulus generalisation, stimulus discrimination and spontaneous recovery

classical conditioning as a three-phase process (before conditioning, during conditioning and after conditioning) that results in the involuntary association between a neutral stimulus and unconditioned stimulus to produce a conditioned response, including stimulus generalisation, stimulus discrimination, extinction and spontaneous recovery

Question 3b (3 marks)

Has Gerald learned not to touch the electric fence through a process of classical conditioning or operant conditioning? Provide two pieces of evidence from the scenario that justify your answer.

Answer:

- *Gerald has learnt to stop touching the fence through operant conditioning.*
- *This is indicated by the fact that:*
 - *his behaviour of not touching the fence is a voluntary response (whereas in classical conditioning the conditioned response is involuntary).*
 - *the response of not touching the fence has been shaped by punishing consequences of Gerald's actions (whereas in classical conditioning the consequences of the conditioned response are unimportant to the learning process).*
 - *Gerald is active in forming the association between the behaviour of touching the fence and the consequence of punishment (whereas in classical conditioning the learner is passive).*
 - *in this situation, the order of the elements of conditioning is behaviour [touching the electric fence] then stimulus [punishment in the form of electrocution] (whereas in classical conditioning the order would be stimulus, and then behaviour).*

Marking protocol:

One mark for the first point.

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

neural plasticity and changes to connections between neurons (including long-term potentiation and long-term depression) as the fundamental mechanisms of memory formation that leads to learning

Question 3c (3 marks)

Explain the mechanisms of neural plasticity involved in Gerald's brain when he learns that touching the electric fence would result in being electrocuted.

Answer:

- *When Gerald learns not to touch the fence, he demonstrates the neural mechanisms of long-term potentiation.*
- *The repeated activation of the neurons associated with the action of touching the fence and perceiving the unpleasant stimulus of electrocution has led to a strengthening of the relevant synapses...*
- *...allowing Gerald to form a strong association between touching the fence and being electrocuted, making him less likely to touch the fence in the future.*

Marking protocol:

One mark for the above point.

Karen is single mother who recently quit her job after an argument with her boss. Initially, she felt overwhelmed with anxiety about her decision to quit (particularly given the financial difficulties she would face) and found it very hard to get out of bed the next day. Nevertheless, she still got up, and to her surprise, felt full of energy when getting her children ready for school. The next few days were hard for Karen, but she felt like she had the energy to persist with her day-to-day life, despite her continuing sense of anxiety about quitting her job. Later that week, she received an encouraging text message from her friend Tim. Tim reminded Karen of her many strengths and outstanding work history. Karen felt much better and began to look for a new job later that day. Karen felt good about her future prospects and was able to find a new job a couple of weeks later. When she had secured her new job, she no longer felt stressed about her work situation.

models of stress as a biological process, with reference to Selye's General Adaptation Syndrome of alarm reaction (shock/counter shock), resistance and exhaustion, including the 'fight-flight-freeze' response and the role of cortisol

Question 4a (5 marks)

With reference to Selye's General Adaptation Syndrome, explain the biological process behind Karen's stress response after quitting her job.

Answer:

- *When Karen initially quit her job, she entered the alarm reaction stage of the General Adaptation Syndrome.*
- *Here her body initially went into a state of shock, where her resistance to stress fell below its normal level; this is evident when Karen feels "overwhelmed".*
- *She then entered counter-shock, where her body released adrenaline to assist her stress response to rapidly rise to meet the demands of the stressor; this is evident when Karen feels "full of energy" the next day.*
- *She then entered the stage of resistance where her body continues to release stress hormones (such as cortisol) at elevated levels into the bloodstream; this is evident when Karen feels she "had the energy to persist with her day-to-day life", while still feeling anxious.*
- *She remained in the resistance stage until after she secured her new job, at which point her body's stress response ceased and her resistance to stress returned to a normal level.*

Marking protocol:

One mark for each of the above points.

models of stress as a psychological process, with reference to Richard Lazarus and Susan Folkman's Transactional Model of Stress and Coping (stages of primary and secondary appraisal)

Question 4b (4 marks)

With reference to Lazarus and Folkman's Transactional Model of Stress and Coping, explain the psychological process behind Karen's changing stress response after quitting her job.

Answer:

- *Initially Karen's primary appraisal of quitting her job was evaluated as potentially stressful and a threat, as she becomes more vulnerable to financial difficulty without the income that the job provided for her.*
- *In her secondary appraisal, she would have assessed what coping resources were available to her in this circumstance. It appears that she initially appraised her coping resources as insufficient to meet the stressor of being without a job...*
- *...but that later the message she received from Tim assisted her in reappraising (changing her initial secondary appraisal of) her internal coping resources as being better than she originally considered and consequently she felt less stress.*
- *When she secured her new job, she reappraised (changed her initial primary appraisal of) the stressor (quitting her former job) to being irrelevant.*

Marking protocol:

One mark for each of the above points.

context-specific effectiveness, coping flexibility and use of particular strategies (exercise and approach and avoidance strategies) for coping with stress. .

Question 4c (1 mark)
What is an example of an approach strategy used by Karen in this scenario?

Answer:
• *Looking for a new job.*

Marking protocol:
One mark for the above point.

resilience as a positive adaption to adversity including the relative influence of protective factors with reference to: adequate diet and sleep (biological); cognitive behavioural strategies (psychological); support from family, friends and community (social)

Question 4d (1 mark)
Provide an example from the scenario of one factor that positively affected Karen's resilience.

Answer:
• *Tim's encouraging text message (is an example of support from family, friends and community).*

Marking protocol:
One mark for the above point.

The following is an excerpt taken from a police interview.

Police Officer: *In your own words, describe what happened last night.*

Suspect: *I had been at a friend's party since 5pm. We had been drinking beers all evening. I was having a great time! I never normally dance, but last night I couldn't help myself. I was dancing like Beyoncé right in the living room and singing at the top of my voice too. I remember checking my watch and thinking it was still early, but the clock said it was 1am! I started feeling really angry for no reason and I pushed a bloke over when he asked me if he could borrow my bottle opener. He got back up and punched me right in the nose. The crazy thing was that I couldn't even feel it at the time. At that point, my friend told me that I had to go home. So, I left the lousy party.*

Police Officer: *And what happened next?*

Suspect: *Well, then I walked down the road and tried to find my way back home.*

Police Officer: *Is that when you smashed the shopfront window?*

Suspect: *Well, it had to be sometime around then I guess.*

Police Officer: *What was your motive for walking towards the shop in the first place?*

Suspect: *Well, I couldn't find my wallet you see, and I figured it might be at the shop where I went before the party. It was only when I eventually got home that I remembered that I had left it in my sock drawer before I left for the party. Just my luck.*

changes in a person's psychological state due to levels of awareness, controlled and automatic processes, content limitations, perceptual and cognitive distortions, emotional awareness, self-control and time orientation

Question 5a (3 marks)

Provide three examples from the interview that indicate that the suspect was in an altered state of conscious on the night of the crime.

Answer:

- *When the suspect dances when he would not normally dance, this indicates reduced self-control which is consistent with an altered state of consciousness.*
- *The suspect's difficulty in accurately guessing how much time has passed at the party indicates changes to his time orientation from normal waking consciousness.*
- *When the suspect says he suddenly shifts moods from "having a great time" to being "really angry", it indicates changes to emotional awareness consistent with an altered state of consciousness.*
- *When the suspect states that he couldn't feel the pain of being punched at the time, this indicates a perceptual distortion consistent with an altered state of consciousness.*

Marking protocol:

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

the factors influencing a person's ability and inability to remember information, including context and state dependent cues, maintenance and elaborative rehearsal and serial position effect

Question 5b (2 marks)

With reference to retrieval cues, explain why the suspect was able to remember where he left his wallet when he got home.

Answer:

- *The suspect's house acted as a context dependent cue.*
- *The suspect had placed his wallet in his drawer at his house, and so it was easier to retrieve this information in the same environment as it was originally encoded in.*

Marking protocol:

One mark for each of the above points.

The suspect's lawyer believes a leading question has been used in the police interview.

the reconstruction of memories as evidence for the fallibility of memory, with reference to Loftus' research into the effect of leading questions on eye-witness testimonies.

Question 5ci (1 mark)

What is the leading question used by the police officer?

Answer:

- *The leading question asked by the police officer was "Is that when you smashed the shopfront window?"*

Marking protocol:

One mark for the above point.

the reconstruction of memories as evidence for the fallibility of memory, with reference to Loftus' research into the effect of leading questions on eye-witness testimonies.

Question 5cii (2 marks)

Drawing on your understanding of the research of Loftus, explain how this leading question might this impact the suspect's memory of the events.

Answer:

- *The leading question presupposes the fact that he was responsible for smashing the window, and that the window had been "smashed" (further, the word "smashed" indicates a forceful destruction of the window).*
- *These two pieces of information may be encoded into the suspect's memory, updating the original memory, which may bias the suspect's future reconstructions of his memory of the night in question.*

Marking protocol:

One mark for each of the above points.

Patrick has a phobia of spiders that he developed as a child after watching a horror film about giant spiders. Every time he sees a spider, he cannot stop himself from thinking that it will poison him and that he will be hospitalised or die. He knows that these thoughts are irrational, but he feels like he can't block them from his mind.

the distinctions between stress, phobia and anxiety; variation for individuals with stress, phobia and anxiety on a mental health continuum

Question 6a (2 marks)

Describe two ways in which is a phobia different from a fear.

Answer:

- A phobia is a diagnosable mental disorder, whereas a fear is not a mental disorder.
- A phobia is associated with marked and persistent distress in the presence of the phobic stimulus whereas a fear may not involve as severe a distress response.
- A phobia is not a normal reaction to a stimulus and represents deviance from how the general population would react in the same situation, whereas fears are common reactions experienced by healthy individuals.
- A phobia causes significant dysfunction to the life of the person experiencing a phobia, whereas a fear can be useful and can aid functioning (or not cause significant dysfunction).
- A phobia involves irrational beliefs about the danger posed by the phobic stimulus or the likelihood of encountering the phobic stimulus, whereas a fear involves more rational judgments of the threat posed by the phobic stimulus.
- A phobia involves an irrational reaction to the phobic stimulus, whereas a fear is a rational reaction to the feared stimulus.
- The extent of the fear response is much more severe (often involving panic attacks) in a phobia compared to a fear.
- A phobia involves avoidance behaviours of the phobic stimulus, whereas a fear may be unpleasant but not necessarily a stimulus that a person deliberately avoids.
- A phobia involves persistent anticipatory anxiety about the phobic stimulus whereas a fear does not necessarily involve anticipatory anxiety.
- A phobia is a relatively enduring experience whereas a fear may not be as persistent.

Marking protocol:

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

Patrick goes to see a psychologist to help him deal with his phobia. His psychologist suggests that cognitive behavioural therapy might be useful in managing the phobia.

the relative influences of contributing factors to the development of specific phobia with reference to: gamma amino butyric acid (GABA) dysfunction, the role of stress response and long-term potentiation (biological); behavioural models involving precipitation by classical

Question 6bi (1 mark)

Which cognitive bias does Patrick display in the scenario?

Answer:

- Patrick displays the cognitive bias of catastrophic thinking.

Marking protocol:

One mark for the above point.

conditioning and perpetuation by operant conditioning, cognitive bias including memory bias and catastrophic thinking (psychological); specific environmental triggers and stigma around seeking treatment (social)

evidence-based interventions and their use for specific phobia with reference to: the use of short-acting anti-anxiety benzodiazepine agents (gamma amino butyric acid [GABA] agonists) in the management of phobic anxiety and relaxation techniques including breathing retraining and exercise (biological); the use of cognitive behavioural therapy (CBT) and systematic desensitisation as psychotherapeutic treatments of phobia (psychological); psychoeducation for families/supporters with reference to challenging unrealistic or anxious thoughts and not encouraging avoidance behaviours (social).

Question 6bii (4 marks)

How might systematic desensitisation be used as a behavioural therapy to help Patrick?

Answer:

- Firstly, Patrick's psychologist would teach him how to use a relaxation technique (such as slow breathing techniques).
- Once Patrick is relaxed, the psychologist would guide him to develop a hierarchy of his fears, from the least frightening aspect of spiders to the most frightening aspect of spiders.
- The psychologist would then gradually expose Patrick to increasing levels of his fear hierarchy, pairing the relaxation technique with the increasing levels of his phobic stimulus.
- This process would continue until Patrick no longer demonstrated a phobic response to the most feared level of his fear hierarchy.

Marking protocol:

One mark for each of the above points.

Rachel is a researcher investigating the effects of brain damage on memory. As a part of her research, she gained access to two patients who have volunteered to participate in experimental research at a local hospital who have recently sustained damage to their medial temporal lobes; one patient (Alexander) suffers from damage to both hippocampi and the other (Matilda) suffers from damage to both amygdalae.

interactions between specific regions of the brain (cerebral cortex, hippocampus, amygdala and cerebellum) in the storage of long-term memories, including implicit and explicit memories.

the effects of brain trauma on areas of the brain associated with memory and neurodegenerative diseases, including brain surgery, anterograde amnesia and Alzheimer's disease

Question 7 (10 marks)

Rachel is asked to give a presentation on her findings from her research on these patients to her colleagues.

Write a section of Rachel's presentation to her colleagues that explains the importance of the hippocampus and amygdala in learning and memory, how a process of fear

Sample answer:

The medial temporal lobe contains brain structures that are crucial to the functioning of human learning and memory. The importance of the medial temporal lobe structures of the hippocampus and the amygdala is reaffirmed in the experiences of two patients that have recently volunteered to participate as participants in my research. The hippocampus is essential for the consolidation of explicit, declarative information into long-term memory, and the amygdala is essential for encoding the implicit emotional content of memory into long-term memory, and this is also thought to be essential for the tendency of humans to experience enhanced memory of emotionally arousing events.

My participant Alexander has sustained damage to his hippocampi and consequently has experienced anterograde amnesia, the inability to

determine appropriate type of investigation: experiments (including use of control and experimental groups); case studies; observational studies; self-reports; questionnaires; interviews; rating scales; access secondary data, including data sourced through the internet that would otherwise be difficult to source as raw or primary data through fieldwork, a laboratory or a classroom

select and use equipment, materials and procedures appropriate to the investigation

minimise confounding and extraneous variables by considering type of sampling procedures, type of experiment, counterbalancing, single and double blind procedures, placebos, and standardised instructions and procedures

minimise confounding and extraneous variables by considering type of sampling procedures, type of experiment, counterbalancing, single and double blind procedures, placebos, and standardised instructions and procedures

select appropriate sampling procedures for selection and allocation of participants including random sampling, stratified sampling, convenience sampling and random allocation of participants to groups

use appropriate psychological

conditioning could demonstrate the way in which damage to the medial temporal lobe affects learning and memory, and the potential limitations of her research.

consolidate new explicit long-term memory. He lives his life as if he were fixed in the time just prior to his brain damage and cannot recall any facts about his experience of life since this event. His sensory and short-term memory remains intact, but he is unable to encode new declarative information to his long-term memory store. Nevertheless, he remains able to consolidate new implicit emotional long-term memory because his amygdalae remain intact.

On the other hand, my participant Matilda sustained damage to her amygdalae and has retained the ability to consolidate and retrieve explicit declarative long-term memory since her accident. The impact of her brain damage on learning and memory are evident when she is exposed to new emotionally arousing experiences. It seems that she is unable to encode the implicit emotional information of a new experience into her long-term memory.

This difference between the two patients' experiences is highlighted in their unique experiences when presented with a fear conditioning task. This fear conditioning task was tested on each volunteer individually and used the following standardised procedure, based on the principles of classical conditioning.

First, I presented the volunteers with a picture of a cat. This cat picture was the neutral stimulus, which was evident as it generated no prior association with the unconditioned stimulus. Quickly after showing the volunteers the cat picture, I exposed the participants to the unconditioned stimulus, a short, low voltage electric shock. The electric shock was not significant enough to cause any lasting harm to the participants, but was noticeable enough to provoke sympathetic nervous system activation, and in individuals with intact brains, a sense of fear (this sympathetic nervous system activation to the shock was the unconditioned response). After repeated exposures to the picture of the cat followed by the electric shock, it is expected that people with intact brains would learn to associate the two stimuli and display the conditioned response of sympathetic nervous system arousal and fear to the now conditioned stimulus of the picture of a cat.

After ten such pairings of the picture of a cat and the electric shock, Alexander began to demonstrate sympathetic arousal (measured by an increase in his heart rate) at the sight of the picture of the cat. The following day, I again showed Alexander the picture of the cat and noticed the rapid elevation of his heart rate. He also stated that he was frightened of the picture of the cat. Nevertheless, he could not explain why he was afraid of the cat picture or why his heart rate had significantly increased when he saw the picture. This is because he was unable to store the declarative information that the electric shock proceeded the picture of the cat. The damage to his hippocampi prevented the consolidation of this information, but his intact amygdalae allowed him to retain the implicit emotional content of the

terminology, representations and conventions for reporting research, including standard abbreviations, graphing conventions and the components of a scientific report with reference to inclusion of an abstract, an introduction and sections for method, results and discussion

discuss relevant psychological information, ideas, concepts, theories and models and the connections between them

identify and explain formal psychological terminology about investigations and concepts

use clear, coherent and concise expression

conditioned response. This is why he remained afraid of the picture of the cat.

In Matilda's case, the damage to her amygdalae prevented her from displaying a fear response to the electric shock. The day after the ten pairings of the picture of the cat and the electric shock, I asked her what she expected to happen if I showed her the picture of the cat. She stated that she expected to receive an electric shock shortly after being showed the picture. This highlights her inability to encode and consolidate emotionally arousing information (such as fear) due to damage to her amygdalae but also her intact ability to consolidate the explicit declarative information related to the events in the procedure (that the picture of the cat would be followed by a mild electric shock).

Every effort was made to ensure the ethical treatment of participants, including using procedures to extinguish the fear conditioning at the conclusion of the procedure.

While these case studies of Alexander and Matilda provide useful data that confirms existing understandings of the roles of the hippocampus and amygdala in learning and memory, it is important to note that evidence gained from case studies is fundamentally limited. As participants for the research, they were selected by convenience. It is possible that Alexander and Matilda may exhibit significant individual participant differences from other people suffering from brain damage to the same regions and thus they should not be considered a representative sample of a larger population. It is also possible that the results may have been biased by placebo and experimenter effects, particularly as I had a preconceived notion of the effect of these types of brain damage on learning and memory and I did not employ a double-blind procedure.

Marking protocol:

This answer is globally marked (i.e. an overall mark is awarded for the entire answer). The criteria on the following page could be used to assess a response.

9-10 Outstanding	<ul style="list-style-type: none"> • All elements of the question addressed. • A thorough explanation of the importance of the hippocampus and amygdala in learning and memory. • An insightful explanation of the procedures that she used with both these volunteers to demonstrate the way in which damage to the medial temporal lobe affects learning and memory. • A robust explanation of what the procedure would indicate in terms of the differences between the volunteers' ability to learn and remember. • An evaluation of the procedure given the specific limitations of case study research clearly explained and related to this scenario, especially relating to the validity of drawing evidence-based conclusions from the research. • Other relevant limitations of the proposed research design clearly explained and related to this scenario. • Formal and appropriate psychological terminology is used throughout the response. (This could include key terms related to memory such as: medial temporal lobe, amygdala, hippocampus, consolidation, encoding, storage, retrieval, short-term memory, long-term memory, explicit memory, declarative memory, implicit memory, emotional memory, etc.; Key terms related to experimental procedures including: case study, quantitative, qualitative, sample, population, generalisation, single blind, double blind, experimenter effect, placebo effect etc.; Key terms related to conditioning including: neutral stimulus, unconditioned stimulus, unconditioned response, conditioned stimulus, conditioned response, etc.)
7-8 High	<ul style="list-style-type: none"> • All elements of the question addressed. • A clear explanation of the importance of the hippocampus and amygdala in learning and memory. • A clear explanation of the procedures that she used with both volunteers to demonstrate the way in which damage to the medial temporal lobe affects learning and memory. • An explanation of what the procedure would indicate in terms of the differences between the volunteers' ability to learn and remember. • The specific limitations of case study research clearly explained and related to this scenario. • Other relevant limitations of the proposed research design clearly explained and related to this scenario. • Formal and appropriate psychological terminology is used throughout the response.
5-6 Medium	<ul style="list-style-type: none"> • All elements of the question addressed. • A satisfactory explanation of the importance of the hippocampus and amygdala in learning and memory. • An explanation of the procedures that she used with both volunteers to demonstrate the way in which damage to the medial temporal lobe affects learning and memory. • A brief explanation of the results of her procedure that does not fully explain what this indicates about the respective roles of the amygdala and hippocampus in learning and memory. • Any relevant limitation of the research design explained. • Some formal and appropriate psychological terminology is used throughout the response.
3-5 Low	<ul style="list-style-type: none"> • Not all elements of the question addressed. • An explanation of the role of either the hippocampus or the amygdala in learning and memory. • A research procedure identified but not fully explained, or not sufficiently able to demonstrate the relative effects of damage to the hippocampus or amygdala on learning and memory. • A brief explanation of the results of her procedure that does not fully explain what this indicates about the respective roles of the amygdala and hippocampus in learning and memory. • No relevant limitations of this research identified. • Minimal formal and appropriate psychological terminology is used throughout the response.
1-3 Very low	<ul style="list-style-type: none"> • A cursory attempt at the question. • Incomplete or inaccurate explanation of the role of either the hippocampus or the amygdala in learning and memory. • A research procedure identified but not fully explained, or not sufficiently able to demonstrate the relative effects of damage to the hippocampus or amygdala on learning and memory. • No demonstration of how the procedure could provide evidence about the respective roles of the amygdala and hippocampus in learning and memory. • No relevant limitations of this research identified. • Little formal and appropriate psychological terminology is used throughout the response.
0 NA	<ul style="list-style-type: none"> • The question has not been meaningfully attempted.

STUDENT
NAME:

Use a **PENCIL** for **ALL** entries. For each question, shade the box which indicates your answer.
Marks will **NOT** be deducted for incorrect answers.
NO MARK will be given if more than one answer is completed for any question.
If you make a mistake, **ERASE** the incorrect answer – **DO NOT** cross it out.

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