

2022 VCE Psychology external assessment report

General comments

The 2022 VCE Psychology examination was based on the *VCE Psychology Study Design 2017–2022*.

All students are strongly encouraged to provide a response to every multiple-choice question, even if the answer is unknown, as marks are not deducted for incorrect answers. It is always possible to change a response by carefully erasing and re-shading.

As marking of Section B is completed online using scanned images of the examination, students should make sure to write within the marked boundaries of the examination paper for each question with a blue or black pen and clearly indicate if a response is continued in the extra space provided at the end of the question-and-answer book. If students continue a response in the extra space, they must number the response clearly.

For short-answer questions and the extended response, students should ensure that they clearly address each question as it is asked, and that examples provided are relevant to the question. In questions that assess the application of psychological knowledge to a scenario, it is particularly important that students make clear any relevant references to the scenario in their responses. Generic responses to such questions cannot be awarded full marks. Students should also ensure that they attempt to answer all parts of each question.

Students are reminded that although spelling errors are not penalised, the meaning of the response must be clear and unambiguous. Students should take care to spell key terms from the study design correctly as marks cannot be awarded where meaning of the word spelt is different (e.g. 'semantic' when the student intended 'somatic').

Specific information

This report provides sample answers or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

The statistics in this report may be subject to rounding, resulting in a total of more or less than 100 per cent.

Section A – Multiple-choice questions

The following table indicates the percentage of students who chose each option. Shaded items indicate the correct answers.

Question	Correct answer	% A	% B	% C	% D	Comment
1	B	13	70	6	10	
2	C	29	9	45	17	<p>Many students incorrectly identified A as the correct response; however the parasympathetic nervous system would activate the digestive processes in the body, and not inhibit them as the answer in A suggests.</p> <p>C is the correct response as the parasympathetic nervous system would regulate heart and respiration (homeostasis) and the sympathetic nervous system will direct blood supply to those areas of the body requiring more activity (fight/flight), such as the muscles in the legs and arms, instead of the internal organs such as the stomach.</p>
3	D	3	7	40	49	<p>Option C is incorrect as the 'fight/flight/freeze' response is not activated by the spinal cord; instead it is activated when the brain perceives a potential threat and signals to the body to respond. The kitten in the scenario exhibited the 'fight' response when it 'hissed and spat' as it prepared to fight off the threat. Students should understand that the sympathetic and parasympathetic nervous systems are both active in a flight-fight-fright response, but variances in dominance are demonstrated depending on the type of response.</p>
4	C	13	3	75	9	
5	C	3	7	39	51	<p>Option C is the most correct response because it refers to the complementary receptor site, which is more accurate than the same molecular shape alternative for D. The receptor site would need to be complementary in shape and size for it to chemically bind to the receptor site.</p>
6	A	79	6	5	10	
7	D	7	16	15	62	
8	A	76	12	6	5	
9	D	7	22	5	66	
10	C	1	54	45	1	<p>Many students incorrectly identified avoidance strategies as being 'always maladaptive', which is incorrect as there are times when avoiding a stressor is beneficial. These strategies, while not dealing directly with the stressor, may result in a decrease in stress and therefore</p>

Question	Correct answer	% A	% B	% C	% D	Comment
						may be adaptive or in a person's best interests, particularly when nothing can be done to address the stressor directly.
11	D	26	4	3	67	
12	B	6	72	5	17	
13	D	33	7	14	47	With an operant conditioning stimulus discrimination question, the behaviour will only be applied to a specific antecedent (stimulus) and not generalised to similar stimuli. In this case, recognising the visual cues would likely result in Justine choosing Technique B when she wanted a close-up of the face. Therefore, option D is the best choice here, as option A is referring to the resultant behaviour.
14	A	31	34	18	16	Option A is referring to the retention process of observational learning. When learning the editing techniques, Justine would be required to create a mental representation of the editing technique and consolidate. then store in her memory. Option B is not a requirement – or necessary element – in observational learning, as the behaviour may remain latent (hidden) until required.
15	C	7	8	79	5	
16	D	20	48	3	28	The correct answer is D, the cerebral cortex. The hippocampus is involved in binding together the different elements of the experience, including the emotional information from the amygdala to form the memory, but this information is then sent to the cerebral cortex for permanent storage.
17	D	20	28	18	34	Option A and B are not correct as both groups experienced a delay of 2 minutes immediately after the presentation of the lists. This would likely result in a loss of the recency effect in both groups. Option C is not correct as the time taken for words to be remembered in the middle of the list will likely increase (take more time to recall) rather than be lower for both groups Option D is correct, as words in the middle of the list for both groups are likely to be more difficult to recall than the beginning of the list and therefore take more time to recall.
18	C	15	37	40	7	Option B is not correct as there is no mention of different rehearsal types being used in the scenario, and typically rehearsal does not have an impact on short-term memory (STM) capacity (it is more useful in increasing the duration of STM or how long information can be

Question	Correct answer	% A	% B	% C	% D	Comment
						held). Option C is the correct response as Group 1 were given 5 seconds to learn the words on the list, which meant they were able to potentially rehearse the words and therefore they took less time to recall them compared to Group 2, who were only given 0.5 seconds to learn the words.
19	C	44	21	28	7	It is important that students make the distinction between sampling techniques and allocation techniques. Sampling is the process whereby participants are chosen from a larger population and allocation occurs once the participants are selected and then placed into experimental (or control) conditions. Many students chose option A, as stratified sampling can ensure that the sample represents the population of interest, but it may not result in reducing individual differences between the groups if they are not allocated randomly or 'matched'.
20	A	82	8	7	3	
21	B	6	52	21	22	
22	B	7	75	9	9	
23	C	15	15	50	19	
24	D	18	17	5	59	
25	B	14	45	6	35	Option B is better than Option D as counterbalancing involves ensuring that half of the participants – dogs in this study – are exposed to one independent variable (IV) condition first, then the other (and vice versa). The IV was the type of treat used – dog treat vs. dog toy – and the treats provided might affect the results, compared to the training order of the breeds of dogs which was not the IV of the experiment, so would not need to be counterbalanced.
26	C	8	3	77	11	
27	D	5	14	6	74	
28	D	9	44	6	41	Option D is most correct as it is a parasomnia, not a dyssomnia as suggested by option B. Parasomnias result in abnormal activities that occur during sleep, which in this case is the experience of a nightmare disorder (experiencing the same terrifying dream) which then causes him to wake up five to six times a night, as compared to a dyssomnia, which refers to a sleep disorder that results in trouble falling asleep or staying

Question	Correct answer	% A	% B	% C	% D	Comment
						asleep.
29	B	14	59	12	15	
30	A	65	2	26	7	
31	D	17	7	25	51	
32	B	12	55	30	2	
33	B	3	74	13	11	
34	D	32	18	3	46	<p>Option D is correct. The statistical method of calculating the standard deviation would enable the researcher to see the variability in the set of data (how spread out a set of data is) because it shows the average deviation of each data point from the mean of the data set. If the standard deviation is small, it means that the data points are close to the mean, indicating fewer outliers; if the standard deviation is large, it means the data points are more spread out, indicating the mean is a result of potentially more outliers (high and low scores or data).</p> <p>Option A is incorrect, as the mean is the average of all scores and therefore would not necessarily indicate whether there were outliers.</p>
35	A	69	12	1	17	
36	B	16	66	15	3	
37	ABCD	35	14	39	12	As a result of psychometric analysis, all four options were accepted as correct.
38	D	3	5	6	86	
39	A	65	18	10	7	
40	C	26	3	64	6	
41	A	84	4	1	11	
42	A	71	5	9	15	
43	A	28	6	9	57	An adaptive fear response will help a person to thrive and survive in their environment, but Vanessa's avoidance of walking to school, even after the threat is no longer present (the end of the swooping season) is out of proportion to the potential harm or risk. Instead, option A is the best answer, because Vanessa has learnt this behaviour through experience together with likely negative reinforcement in her avoidance of the situation that is making her fearful.
44	B	2	76	12	9	

Question	Correct answer	% A	% B	% C	% D	Comment
45	B	4	75	6	15	
46	B	5	80	9	6	
47	B	9	66	8	17	
48	C	5	1	89	5	
49	C	4	23	67	5	
50	A	73	5	10	12	

Section B

Question 1a.

Marks	0	1	2	3	Average
%	19	21	40	21	1.6

In order to outline the classical conditioning process required for acquisition of Little Albert's emotional responses, students needed to include the following information:

- the neutral stimulus (NS) (or white rat) was paired with the unconditioned stimulus (UCS) (or loud noise)
- the repetition in pairing of the stimuli (NS and UCS were paired or associated multiple times)
- the NS or white rat was presented before the UCS or loud noise.

A common error was to confuse the NS and UCS and to broadly suggest that the NS and UCS were paired multiple times, without explicitly stating that the NS was presented before the UCS.

The following is a sample response.

During conditioning the NS/white rat would have to be repeatedly presented just before the UCS/loud noise to form an association between the rat and the loud noise.

Question 1b.

Marks	0	1	2	Average
%	9	31	60	1.5

Referring explicitly to Watson and Rayner's experiment on the classical conditioning of Little Albert, students were required to demonstrate an understanding of an appropriate ethical principle and how the principle could have been used to prevent possible long-term distress for Little Albert. The principle and description needed to be congruent and applicable to Little Albert.

Some possible ethical principles included:

- withdrawal rights
- voluntary participation
- informed consent
- debriefing
- do no harm
- respect
- beneficence

A common error occurred when students did not explicitly identify an ethical principle, or the principle they identified did not match the description they gave.

The following is a sample response.

Withdrawal rights: if Little Albert was able to leave the experiment when he wanted or when he was feeling distressed, this may have reduced the likelihood of harm/distress.

Question 1c.

Marks	0	1	2	3	Average
%	20	23	21	36	1.8

Students were required to identify a neurotransmitter involved in learning/memory such as glutamate, adrenaline or GABA. They then had to outline the role of this particular neurotransmitter in the classical conditioning of Little Albert's response and also to make some reference to the scenario.

A common error was to identify a neurotransmitter but then only vaguely outline the role of that neurotransmitter in learning or memory. Another common error was to misinterpret this question and not identify a particular neurotransmitter, giving instead a definition of the role of neurotransmitters in general.

The following are sample responses.

- Glutamate is involved as it makes the postsynaptic neuron more likely to fire (an action potential), which strengthens the neural pathways (LTP) and thus increases the likelihood of Little Albert learning the fear response to the white rat.
- Adrenaline is involved as when it is released it activates the amygdala in the brain, signalling a fear response (fight/flight/arousal) and thus increasing the likelihood of Little Albert forming a memory of the fear response to the white rat.

Question 2a.

Marks	0	1	2	3	Average
%	5	9	45	41	2.2

Students needed to include the following key points in the research hypothesis:

- the accurate IV (which includes both watching a horror movie AND watching a romantic comedy)
- the correct identification of an accurate dependent variable (DV) (either stress levels OR change in heart rate/greater increase in heart rate)
- a clear direction – this direction could be an increase/higher or decrease/lower depending on viewpoint (taken from the horror movie or romantic comedy perspective).

Students commonly identified the DV as increased heart rate, but we cannot imply that the DV is simply an increase in heart rate as this was already the case before they started watching the clip.

The following is a sample response.

It is hypothesised that people who watch horror movies will have a higher level of stress (as measured by change in heart rate), compared to those who watched a romantic comedy.

Question 2b.

Marks	0	1	2	Average
%	14	40	46	1.3

Referring to the scenario provided, the students were required to explain the results, noting that after watching a horror movie, a higher heart rate/bpm is elicited compared to the romantic comedy movie. They had to state that watching horror movies leads to an increase in physiological response, such as an increased heart rate or blood pressure, sympathetic NS activation **OR** a 'fight-flight'/'fight-flight-freeze' response **OR** a release of cortisol/adrenaline/noradrenaline.

The following are sample responses.

- The horror movie has activated the sympathetic NS which subsequently increased the heart rate of Group 1 after watching the horror movie (and this did not occur for Group 2).
- The bpm for both groups increased; however the bpm for Group 1 doubled from before the movie compared to after the movie, whereas the bpm/heart rate for Group 2 increased by only 10 bpm.

Question 2c.

Marks	0	1	2	3	Average
%	26	20	31	24	1.6

It was a requirement to refer to the General Adaptation Syndrome in this response.

Students were to identify that Group 1 has either entered the:

- alarm reaction stage OR
- alarm stage OR
- countershock OR
- resistance stage

There needed to be an appropriate reasoning behind the description of GAS stage/aspect identified for Group 1, as well as a reference to Group 2 as maintaining a normal level of resistance to stress OR that they have not entered any GAS stage.

The following are sample responses.

- Group 1 is in alarm-reaction stage as they experienced a sudden stress response (that increased HR), whereas Group 2 had no stress response so has not entered any GAS stages.
- The group exposed to the horror movie would be in the countershock substage of the alarm reaction stage. The body's level of resistance to stress initially drops in the shock stage and then the body mobilises to respond to the stressor by increasing HR (to engage in a fight or flight response). Group 2 did not enter any stage of the GAS.

Question 3a.

Marks	0	1	2	Average
%	2	17	81	1.8

Students were expected to make a distinction between daily pressure versus a life event AND to provide a suitable example of each. They were not required to provide a definition of these terms, merely a point of difference, such as that a life event is a rare occurrence, whereas daily pressures are regular occurrences.

A common error was to only provide an example for a daily pressure or a life event, but not both.

The following is sample response.

A daily pressure is a relatively minor hassle/irritation that a person can generally manage, whereas a life event is major event that requires a form of social readjustment/adaptation. An example of a daily pressure is being stuck in traffic; an example of a life event is the death of a family member.

Question 3b.

Marks	0	1	2	Average
%	27	54	19	0.9

Students were required to provide a correct reason for the use of a rating scale as part of the research, and to also provide a limitation in using the rating scale.

Appropriate responses referred to the fact that a rating scale is used to measure the severity of stressors for individuals OR to generate a subjective measure of the severity of daily pressures / life events. Examples of a suitable limitation were that the participants may not be able to accurately reflect/remember the severity of the stressors when completing the rating scale OR the forced choice option does not allow for explanation or deeper understanding of why daily pressures are seen as more severe than life events.

Common errors included stating that a rating scale is a quantitative measure, as this does not provide justification as to why a rating scale was used, or stating that the data is **subjectively** measured, as this can also be an advantage of the use of a rating scale.

The following is a sample response.

The reason for the use of a rating scale as part of the research was to generate a subjective measure of the severity of daily pressures / life events. A possible limitation is that the use of a 4-option rating scale is too narrow to generate accurate data.

Question 3c.

Marks	0	1	2	Average
%	46	25	29	0.9

To accurately answer this question, any other variable that is considered a confounding variable (one that could have an impact on the measures of the study, apart from the 100 identified daily pressures and life events) was accepted. The three measures in this study were

- the severity of the rating of daily pressures and life events
- the frequency of the headaches
- the (strength of the) relationship between the severity of daily pressures and life events and the frequency of headaches.

To obtain full marks, the confounding variable identified had to be relatable to the scenario, and its impact on any of the three measures had to be explained.

Common errors occurred when students identified the sample size, sampling technique or research design used, as these are not confounding variables. Referring merely to the subjective nature of the rating was also not accepted. Likewise, if the response referred to the impact of the stressors on headaches, it was not accepted as this was the purpose of the study.

The following is a sample response.

Use of medication may affect how individuals perceive stressors / daily pressures. For example, anxiety medication and anti-depressants can alter a person's perception of a stressor and rate it lower than they usually would otherwise.

Question 3d.

Marks	0	1	2	3	4	5	Average
%	21	7	13	15	19	25	2.8

To obtain full marks for this question, five key points were required. The first two refer to the primary appraisal of Lazarus and Folkman as the interpretation of the significance of daily pressure and the application of primary appraisal to the study. For example, experiencing headaches demonstrates that daily pressures have been perceived as a threat/challenge/harm; OR primary appraisal is not benign/neutral/irrelevant in the scenario; OR participants who appraised it as benign/neutral/irrelevant would experience fewer/less-severe headaches or no headaches at all.

The next three points refer to the knowledge of secondary appraisal. The interpretation that the event is stressful depends on whether the individual perceives they have the resources to cope with a stressor. The application of secondary appraisal to the study is that those who are likely to perceive that they do not have adequate coping resources to deal with daily pressure – linking to the results of the study that show that people rated daily pressures as higher on the rating scale – may experience higher frequency of headaches (or vice versa).

Common errors occurred when students did not reference the Lazarus and Folkman model or language, or refer to the scenario in their response. A purely generic answer (not referring to frequency of headaches and daily pressures) received a maximum of 2 marks.

The following is a sample response.

In a primary appraisal the participants evaluate a daily pressure or life event as irrelevant, benign-positive or stressful. Individuals experiencing headaches in the study suggests that daily pressures have been perceived as stressful – harm/loss, threat or challenge. In a secondary appraisal, the individual evaluates coping options and resources available to deal with daily pressures. If the participants evaluate that they have the resources to cope with the daily pressures then they are more likely to experience a lower frequency of headaches (or vice versa).

Question 4a.

Marks	0	1	2	3	Average
%	23	15	26	35	1.8

Students needed to outline three processes that occur as the words from the list are transferred from sensory memory to short-term and then to long-term memory. Students may have referred to the following processes: attention, encoding, storage, consolidation and rehearsal. The response needed to reference the scenario (words from the list transferring to memory) and each process needed to make mention of the specific memory store (sensory, STM and LTM).

A common error was to outline processes for sensory and long-term memory but not include short-term memory. Another was outlining the process of retrieval which is not applicable for this question, as the question was about transferring the information to LTM and *not from* LTM.

The following is a sample response.

The words from the list first enter the sensory memory where, if attention is paid to them, they will then transfer to short-term memory. STM can hold limited amounts of information that can be rehearsed to keep them in STM for longer and enable encoding into long-term memory, where they will be stored permanently.

Question 4b.

Marks	0	1	2	3	Average
%	37	11	24	28	1.5

Students were required to identify the method used in day one as recognition and the method used on the second day of testing as (free) recall. Then they were required to explain that the results were higher on day one as recognition provides retrieval cues or because recognition is a more sensitive measure of retrieval than recall.

A common error was to identify day one testing as cued recall instead of recognition.

The following is a sample response.

The first testing day adopted recognition and the second day testing recall. Participants retrieved more words using recognition than recall as recall does not provide participants with any additional retrieval cues like recognition does.

Question 4c.

Marks	0	1	2	Average
%	47	41	12	0.7

Students needed to identify that condition C was a comparison (control) group which allowed a comparison to be made with condition B to determine if the effects are due to music acting as context-dependent cues during retrieval.

The following is a sample response.

Condition C is the comparison group as music is present during learning the words and not during remembering the words, so the results from this group can be used to determine if music being present both during learning and remembering (condition B) has an effect.

Question 4d.

Marks	0	1	2	Average
%	37	28	35	1.0

Students were required to identify music as the context-dependent cue and explain that music was present at both encoding and retrieval, which improved recall of words because it cued retrieval.

A common error was to suggest music acted as a state-dependent cue on both days.

The following is a sample response.

Music acted as a context-dependent cue which improved the recall of words, as participants were in the same environmental conditions during encoding and retrieval.

Question 5a.

Marks	0	1	Average
%	75	25	0.3

Students were required to give a reason for the dentist needing to use external cue(s) to determine if a patient was in an altered state of consciousness. There were several options that were considered acceptable responses, such as the need for the dentist to determine the level of awareness (or pain), to ensure patients don't feel any pain before undergoing the dental treatment, and that consciousness can be inferred based on physiological and/or psychological indicators.

A common error was to indicate a way to measure consciousness using external cues rather than explain why external cues are used.

The following is a sample response.

The dentist needed to know the patient's level of awareness so that they were not experiencing pain during the surgery.

Question 5b.

Marks	0	1	2	3	4	Average
%	34	20	15	16	15	1.6

Students needed to identify four different indicators of the patient's psychological state and outline how the dentist might use these to indicate that the patient is in an altered state of consciousness. Students may have identified any of the following psychological indicators:

- reduced perceptual ability / perceptual distortions
- impaired cognitive ability
- distorted time orientation
- reduced levels of awareness
- distorted emotional awareness
- reduced self-control
- content limitations
- reduction in attention.

Each indicator needed to be used to outline how the dentist may determine the patient is in an altered state of consciousness. Specific reference to the scenario for each indicator was essential; generic responses were not accepted.

Common errors students made were to make generic responses without mention of the scenario or to identify physiological indicators instead of psychological indicators.

The following are sample responses.

- The patient will display reduced cognitive ability, such as not being able to tell the dentist their correct address or birth date.
- Time orientation: the patient may report that the lengthy surgical procedure was very brief, indicating to the dentist that they cannot judge the passing of time accurately.
- Perceptual distortions: the patient may mention to the dentist that they are seeing things that the dentist can't see (don't exist).
- Emotional awareness: the patient may become inappropriately emotional and start to laugh hysterically indicating to the dentist that they have emotional distortions.

Question 5c.

Marks	0	1	2	Average
%	38	21	41	1.1

Students needed to identify a physiological measure that could be used to determine whether the dental patient has reached an altered state of consciousness after the depressant or sedative was administered. This may have included any of the following physiological measures:

- EEG (electroencephalograph)
- EMG (electromyograph)
- reaction time
- heart rate.

Students then needed to outline how the physiological measure could determine an altered state of consciousness considering the patient had taken a depressant/sedative.

A common error was to broadly state what the identified physiological measure could measure, instead of specifically linking it to the patient having taken a depressant/sedative (the measure would typically show some reduction in the physiological measure taken).

The following is a sample response.

Physiological measure: EEG

Outline: the EEG will indicate lowered frequency and higher amplitude brain waves (reduced beta waves and increased alpha/theta/delta waves) which indicate that the participant had entered an altered state of consciousness.

Question 6a.

Marks	0	1	2	3	Average
%	7	16	26	50	2.2

Students were required to identify three characteristics of a mentally healthy person and then apply this to Annabelle's scenario to describe how she demonstrates characteristics of being mentally healthy.

Examples of characteristics included (but were not limited to) the following:

- positive mindset
- high self-efficacy
- coping flexibility / ability to adapt change
- high level of independence
- high level of functioning
- high level of social interaction
- high level of resilience.

It was then required to describe how Annabelle demonstrated this characteristic. Students should have used the information provided in the scenario to form their response.

A common error was to identify characteristics that were too similar, when they needed to be three different characteristics of a mentally healthy person, and the description needed to be congruent with (match) the characteristic identified.

The following are sample responses.

Resilience

Even though Annabelle experienced stress, such as the number of shifts at work reducing, she was able to 'bounce back' and overcome the issue and restore positive function.

High level of functioning

Annabelle was able to look after herself and perform activities such as study, working part time and maintaining social connections.

Question 6b.

Marks	0	1	2	3	Average
%	14	12	34	39	2.0

Three elements were required to explain how Annabelle used a strategy with context-specific effectiveness to manage one external factor that affected her mental health. Students needed to first identify an external factor affecting Annabelle's mental health from the scenario. They then had to demonstrate how she used a strategy to overcome the problem that was context specific. Lastly, they had to explain how Annabelle's strategy for dealing with the stressor was context specific in that the strategy enabled her to overcome the specific problem effectively.

There were a couple of examples within the scenario that provided an opportunity to demonstrate this concept. Examples of external factors affecting Annabelle's mental health included the stress caused by the limited number of shifts she was receiving (unfair treatment at work) or the major family commitment which coincided with the time when her final assignment for her studies was due.

A common error was to identify Annabelle's strategy of complaining to her colleagues in order to overcome the stress she was experiencing at work. This was not an effective strategy as it is not an approach strategy and did not lead to overcoming the stressor.

The following are sample responses.

- Losing shifts (external factor) was stressful for Annabelle. In order to overcome this stressor, she does some research to improve her employability which results in her getting another job. This strategy was effective as it meets the demands of the stressor / is a strategy that was a good fit for the situation as it leads to her overcoming the stressor.
- Annabelle had an assignment due at the same time as a major family commitment, so in order to overcome this problem, she contacts her teacher and arranges for more time to complete the assignment; the strategy she used resulted in a reduction in the problem, so it had context-specific effectiveness.

Question 7a.

Marks	0	1	2	Average
%	49	31	20	0.7

Students were required to identify negative reinforcement as the consequence and describe how Eloise's phobia was perpetuated.

Common errors occurred when any other consequence was identified e.g. response cost / punishment / positive reinforcement. This resulted in 0 marks. Also, simply saying that negative reinforcement perpetuated the phobia was not enough for the second mark as it's in the stem of the question.

The following is a sample response:

Eloise is demonstrating negative reinforcement. When Eloise avoids the mice, she reduces the unpleasant feeling of fear and this strengthens her avoidant behaviour.

Question 7b.

Marks	0	1	2	Average
%	71	15	14	0.5

The identification that the mouse was the specific environmental trigger along with the explanation of how that specific environmental trigger contributed to Eloise's phobia was required. Students needed to link to the scenario to receive the mark.

Common errors occurred when students mentioned associating the bedroom and the mouse together which caused her phobia. Any response that referred to some form of classical conditioning association was incorrect, as this pairing would have resulted in a phobia of the bedroom, not the phobia of mice.

The following are sample responses.

- The mouse waking her up triggered the release of adrenaline. This enabled her to form an emotional memory and contributed to the development of her phobia of mice.
- The specific environmental trigger was the mouse in her room that woke her up. This could have created a negative memory bias towards mice and led to the development of a phobia.

Question 7c.

Marks	0	1	2	3	Average
%	50	16	21	12	1.0

As part of their explanation, students were required to:

- Identify psychoeducation as the correct evidence-based social intervention.
- Provide an accurate description of psychoeducation such as educating her parents/friends etc. about the need to challenge unrealistic or anxious thoughts about mice OR teaching her friends and family how to discourage avoidance behaviours in Eloise when she interacts with mice.
- Make an explicit link to how this will help improve Eloise's ability to confront and deal with the mouse/mice (to link it to the resilience part of the question).

A common error was stating that psychoeducation will help build Eloise's resilience in dealing with her phobia, as this was just a rephrasing of the question.

The following is a sample response.

Psychoeducation. Her friends can learn how to support Eloise when she tries to avoid interactions with mice. They will help Eloise so that she can cope better next time she confronts a mouse.

Question 7d.

Marks	0	1	2	3	Average
%	37	31	19	12	1.1

For this question, students needed to:

- Identify one biological factor (e.g. GABA, genetic vulnerability, brain chemistry, sleep, diet, LTP, substance use, role of the stress response).
- Explain how it is a protective factor, with an acknowledgement of how it led to the development of a phobia for Eloise.
- Explain how it is a risk factor, with an acknowledgement of how it led to the development of a phobia for Eloise (but doesn't have to specifically reference mice).

Common errors occurred when treatment options such as the use of benzodiazepines were discussed, as the question required students to consider a biological factor 'in the development of Eloise's phobia', not an evidence-based intervention that could be used to treat Eloise's phobia.

The following are sample responses.

Genetic vulnerability / family history is an example of a biological factor. If a (biological) parent / family member has a phobia, Eloise might be more likely to develop a phobia too. If her (biological) parents don't have a phobia her inherited genes could act as a protective factor against developing a phobia.

Sleep is an example of a biological factor. Eloise might not be thinking rationally if she is sleep deprived which could increase her chance of developing a phobia (risk factor). With adequate sleep she might be calmer when confronting the mouse so it could protect her from developing a phobia (protective factor).

Question 8

Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	8	6	9	13	17	18	12	10	6	2	0.5	4.3

This question required students to explain the sleep-wake shift that can occur in adolescence and how bright light therapy (BLT) and cognitive behavioural therapy (CBT) can reduce the impact of the sleep-wake cycle shift in adolescence. The students' task was to also evaluate the contribution of BLT and CBT to the improved sleeping habits of the teenage participants in the study.

This question was marked holistically. The evaluation may have included:

- a description of the sleep-wake shift in adolescence and an explanation of why it occurs
- an outline of how the sleep-wake shift impacts adolescents (sleeping habits and functioning)
- a description of how BLT and CBT operate to affect sleeping habits
- a description of the impact of BLT and CBT (both alone and together) on the sleeping habits of the teenage participants
- an evaluation of the relative contribution of BLT and CBT to improve sleeping habits.

One of the following descriptions of the sleep-wake shift in adolescence with an explanation of why it occurs needed to be included.

- Circadian rhythms are biological rhythms that operate on a 24-hour cycle such as the sleep-wake cycle.
- The sleep-wake cycle is synchronised by the brain (suprachiasmatic nucleus), which is influenced by environmental cues, especially light and dark conditions.

- When the environmental conditions become dark in the evening, the eye takes in reduced light and sends signals to the brain (suprachiasmatic nucleus) which in turn signals to the pineal gland to release melatonin, making one feel drowsy and promoting sleep.
- Sleep-wake shift or delayed sleep-wake phase disorder is a circadian rhythm sleep disorder which occurs during the teenage years.
- Sleep patterns tend to shift back (are delayed) 2 hours – largely due to internal (biological, endogenous) factors.
- Melatonin is released later in teenagers than in children or in adults so that teens often don't feel sleepy until late at night (they are biologically driven to fall asleep later).
- Social influences such as homework and electronic device use may make teenagers less inclined to go to bed earlier (and prevent the release of melatonin). Psychologically teenagers may also be less ready to accept sleep deadlines set by others. This can exacerbate the impact on the sleep-wake shift.

An outline of how the sleep-wake shift impacts on adolescents (sleeping habits and functioning) was required. Such examples include:

- Due to the later release of melatonin and other pressures to stay up late, teenagers go to bed later. As they have school and other commitments in the morning, this means they have to get up before they can achieve the required amount of sleep and as such can become sleep deprived.
- On average they require 9–10 hours sleep a night but many get less.
- The weekend rarely provides enough opportunity for them to catch up on their sleep debt and if it does it can lead to further sleep delays as the body clock syncs to a 'late to bed and late to rise' cycle, making resetting the sleep pattern harder once the weekend is over.
- The effects of sleep deprivation can be affective, cognitive and behavioural. Teenagers might experience amplified emotional responses such as increased moodiness, cognitive effects such as lack of concentration and careless errors, and behavioural responses such as clumsiness.

An accurate description of how BLT and CBT operate to affect sleeping habits needed to be mentioned:

- BLT is used to treat circadian phase disorders to reset the sleep-wake pattern. It is used to advance or delay sleep by sending signals to the brain (suprachiasmatic nucleus) that it is daylight (effectively acting as a zeitgeber). In turn, the brain (suprachiasmatic nucleus) can adjust the body clock in keeping with the external cues. To reset the circadian rhythm of teenagers, it would be administered in the last few hours of sleep (early morning) to reset the clock backwards so that teenagers become tired earlier.
- CBT aims to change the way that teenagers think about sleep and sleep routines, and also to improve the behaviours associated with bedtimes so that teenagers can get the appropriate amount of sleep. For example, the teenagers could be asked to think about areas of their life that would improve with more sleep (doing well at school, physical appearance, athletic performance, not feeling tired) and these would be used to help motivate the teenagers. CBT could also include giving them information about the body clock, sleep hygiene and strategies for waking up earlier on weekends. The information would provide the basis for developing habits (behaviour) that will impact on sleep, such as setting a bedtime, and engaging in sleep promoting behaviours and avoiding those that prevent sleep.

A description of the effect of BLT and CBT alone and together on the sleeping habits of the teenage participants:

- It is evident from the information provided and the results of the study that these interventions both have an impact on the sleep habits of teenagers. BLT, by altering the timing of the release of melatonin, resulted in participants feeling tired earlier but it did not result in going to bed earlier and getting more sleep.
- Previous studies had shown that CBT on its own can have a modest effect on sleeping habits.
- However, if the two therapies were combined, both the sleeping habits (more consistent and earlier bedtimes) and the amount of time slept improved by 43 minutes, better than CBT on its own.

Evaluation of the relative contribution of BLT and CBT to improved sleeping habits:

- Students needed to note that BLT **does not** have any impact on teenagers' sleeping habits, and that the CBT condition alone does positively impact on teenager's sleeping habits. Together the two treatments are more successful in increasing the amount of sleep teenagers have, and by implication reducing the amount of sleep deprivation and its impacts.
- Participants who undertook BLT felt tired earlier, in comparison to those who received the control (light therapy); however, this feeling of tiredness did not lead to earlier bedtime or an increase in hours slept. Therefore, BLT alone did not have any impact on improving teenagers' sleeping habits.
- A previous study that looked at the impacts of CBT alone to help teenagers improve sleeping habits had shown it helped them get to sleep 10–15 minutes earlier than usual. So CBT alone did impact on the improvement of teenager's sleeping habits.
- The combination of CBT and BLT had the biggest improvement in teenagers' sleeping habits.
- In terms of increase in time spent asleep, they slept for 43 minutes more each night, and also went to bed 50 minutes earlier than those who used CBT with the fake light therapy. They were also six times more successful at maintaining consistent bedtimes compared to CBT and fake light therapy.

Students did not need to provide an implication of the research study as part of their evaluation, but the highest-scoring responses needed to reference the analysis of results to all conditions mentioned to evaluate that CBT + BLT together are more effective, compared to CBT alone, which was effective but not as effective as both, and BLT alone, which had no impact on the improvement of teenagers' sleep habits.

The highest-scoring responses included the following:

- Insightful, detailed and relevant evaluation that clearly explained the sleep-wake shift in adolescence and its impact, and how BLT and CBT operate to improve the sleep of teenagers as demonstrated by the study's results
- a mention (may be brief) of results of BLT (versus fake light therapy) study not having any impact on the improvement of teenagers' sleep, with the results of previous studies referring to CBT alone having some improvement on teenager's sleep
- accurate and detailed description of how BLT and CBT work to change the sleep habits of teenagers. Cognitive and behavioural interactions in CBT likely to be noted or at least implied
- discussion of the role of melatonin and BLT in helping students reset their body clock may be included.
- demonstration of thorough knowledge of relevant psychological concepts and use of appropriate terminology.