



VCE Psychology

Written examination – End of year

Sample questions

These sample questions are intended to demonstrate how Units 3 and 4 of VCE Psychology 2023–2027 Study Design may be examined. They do **not** constitute a full examination paper.

SECTION A – Multiple-choice questions

Use the following information to answer Questions 1 and 2.

Last year, Mary-Ellen’s parents brought home a dog. Mary-Ellen was initially excited, but the dog was big and scary. Mary-Ellen froze every time the dog entered the room and she jumped every time the dog barked. Noticing that she feared the dog, Mary-Ellen’s parents put the dog out in the backyard and it is no longer allowed in the house. Now, Mary-Ellen can move around the house but she avoids going near the back door and does not enter the backyard. Mary-Ellen has become more used to the dog but has noticed that she is feeling more tired and has frequent colds.

Question 1

Which of the following represents part of Mary-Ellen’s initial stress response when the dog was brought home?

- A. increased digestion
- B. constricted pupils
- C. decreased cortisol levels
- D. increased muscle tension

Question 2

Which of the following best describes the type of stress, cortisol level and stage of Hans Selye’s General Adaptation Syndrome model that Mary-Ellen is currently experiencing?

	Type of stress	Cortisol levels	Stage of Hans Selye’s General Adaptation Syndrome model
A.	acute	high	alarm
B.	chronic	high	resistance
C.	acute	high	exhaustion
D.	chronic	low	alarm

Question 3

Which one of the following describes a role of the gut microbiota?

- A. regulate immune function
- B. inhibit the release of cortisol
- C. activate the fight-or-flight-or-freeze response
- D. regulate the production of gamma-amino butyric acid (GABA)

Question 4

Which of the following represents a key function of neurotransmitters and neuromodulators?

	Neurotransmitter	Neuromodulator
A.	alters the properties of chemical signals	carries chemical signals from one neuron to another
B.	transfers signals across synapses	regulates the signal transmission between neurons
C.	decreases signal speed	increases signal speed
D.	affects multiple neurons at once	affects one neuron at a time

Question 5

Jason recently started learning how to play the piano. He is still making a lot of mistakes but his skills are improving.

Which of the following accurately describes what is happening in Jason’s brain?

- A. low levels of GABA and pruning of neurons
- B. high levels of GABA and rerouting of neurons
- C. low levels of glutamate and sprouting of neurons
- D. high levels of glutamate and sprouting of neurons

Question 6

Which of the following is an example of negative punishment and its likely effect?

- A. a person taking aspirin to remove a headache, decreasing the pain of the headache
- B. a teacher taking away a student’s mobile phone, decreasing the likelihood of the student texting in class
- C. a parent adding more chores to their child’s responsibilities, decreasing the likelihood of the child misbehaving again
- D. an employer deducting an employee’s pay for bad work performance, increasing the likelihood of their employees performing poorly

Question 7

Which of the following best describes a key role of the neocortex and basal ganglia in memory?

	Neocortex	Basal ganglia
A.	stores emotional associations of long-term memories	involved in the recall of implicit long-term memories
B.	forms initial memories and transfers to other brain areas for storage	assists consolidation of emotionally arousing memories
C.	reorganises memory received from hippocampus for consolidation	enables habit formation
D.	involved in the recall of explicit long-term memories	stores long-term memories indefinitely

Question 8

Which of the following best describes a feature of the method of loci and of Aboriginal peoples' use of songlines?

	Method of loci	Songlines
A.	traces the creation of Country through the actions and travels of ancestors	connect knowledge to physical locations
B.	helps people remember new information in sequential order	connect a large number of significant locations in the landscape
C.	consists of a phrase in which one of the letters in each of the words represents another word	consist of cultural practices that store and transmit knowledge
D.	relies on spatial relationships between locations to arrange and recall memory	contain strategies for encoding information with the sole purpose of making it more memorable

Question 9

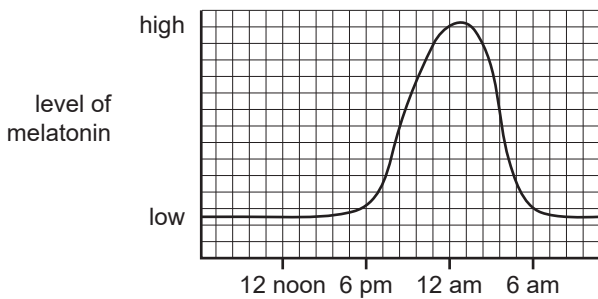
Which of the following options provides an accurate description of delayed sleep phase disorder (DSPD) and advanced sleep phase disorder (ASPD)?

	Delayed sleep phase disorder (DSPD)	Advanced sleep phase disorder (ASPD)
A.	involves early sleep onset and waking	involves late sleep onset and waking
B.	treatment most likely to involve bright light therapy	treatment most likely to involve cognitive behaviour therapy
C.	increased prevalence in younger age groups	increased prevalence in older age groups
D.	melatonin is released later than typically expected	no changes in melatonin release pattern

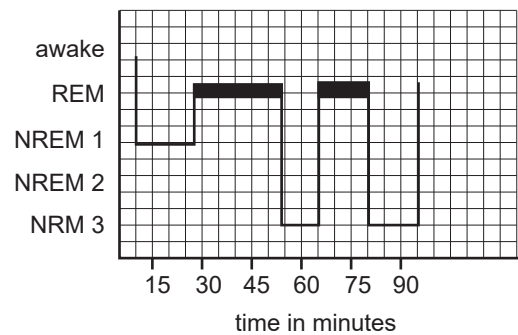
Question 10

Which of the following best represents an ultradian rhythm of a healthy adult?

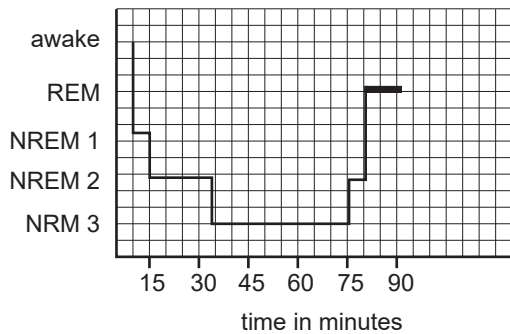
A.



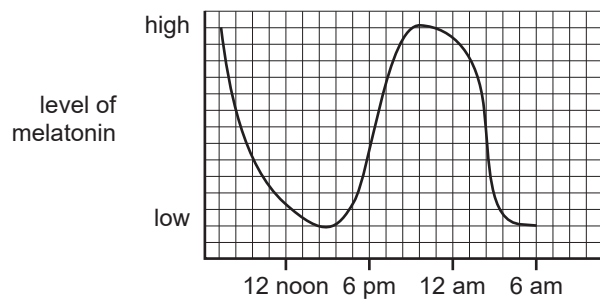
B.



C.



D.



Use the following information to answer Questions 11–13.

A researcher investigated the effect of glasses that filter blue light on the sleep quality of VCE students.

For the duration of the study, the participants wore, on their non-dominant hand, a device that automatically measured and recorded their sleep–wake onset times. They were also asked to fill in a sleep diary, recording their hours of sleep, periods of wakefulness during the night and the quality of their sleep.

For weeks 1 and 2, the participants wore glasses with clear lenses and without light-filtering qualities from 7 pm until they went to bed to sleep.

For weeks 3 and 4, the participants wore glasses that filter blue light from 7 pm until they went to bed to sleep.

Participants were encouraged to go about their normal nightly activities.

Question 11

A controlled variable in this study is

- A. sleep quality.
- B. the type of glasses worn.
- C. the hand on which the device was worn.
- D. the device recordings and the sleep diary.

Question 12

The type of investigation used is

- A. fieldwork.
- B. a correlational study.
- C. a controlled experiment using a within-subjects design.
- D. a controlled experiment using a between-subjects design.

Question 13

When analysing the results, the researcher noticed that some of the data was inconsistent. In several instances, participants reported periods of wakefulness during the night in their sleep diaries, whereas the device recorded no awakenings. There were also inconsistencies in wake onset times between the sleep diaries and the device.

The difference in the data is likely due to

- A. systematic errors and this affects the true value being measured.
- B. random errors and this affects the internal validity of the investigation.
- C. systematic errors and this affects the internal validity of the investigation.
- D. an issue of repeatability and this affects the external validity of the investigation.

Question 14

In summertime at Scott Base camp in Antarctica, there are months of 24-hour sunlight because the sun never sets.

With regard to zeitgebers, which of the following would be most useful in adjusting to these conditions and maintaining a typical sleep–wake cycle?

- A. minimising exposure to bright light during the day
- B. using melatonin supplement tablets in the evening
- C. eating warming foods in the evening to increase body temperature
- D. adjusting light exposure by wearing sunglasses during the evening

Question 15

Dr Smith is one of 10 doctors who work at Bayview Lodge Medical Clinic. He wanted to investigate the effect of a new brand of benzodiazepine on the progression of a specific phobia in patients at the clinic. Fifty patients volunteered to take part in the study. Dr Smith randomly divided the participants into two groups and gave Group A a treatment consisting of the new brand of benzodiazepine and Group B a sugar tablet. The participants did not know whether they were receiving the treatment or a sugar tablet. The participants completed a self-report phobic anxiety scale both before and after the treatment.

Which of the following would be a suitable independent variable and dependent variable for this study?

	Independent variable		Dependent variable
	Experimental group	Control group	
A.	25 g sugar tablet	25 g benzodiazepine	the difference in pre- and post-test scores on the self-report phobic anxiety scale
B.	25 g benzodiazepine	25 g sugar tablet	score on self-report phobic anxiety scale
C.	25 g benzodiazepine	25 g sugar tablet	the difference in pre- and post-test scores on the self-report phobic anxiety scale
D.	25 g sugar tablet	25 g benzodiazepine	score on self-report phobic anxiety scale

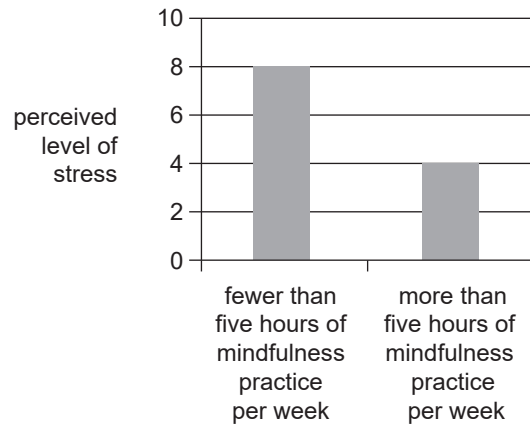
Question 16

Donal was encouraged by his medical practitioner to use mindfulness meditation to manage his anxiety. Mindfulness meditation is likely to reduce Donal’s anxiety by

- A. getting him to accept the sources of his anxiety.
- B. stopping the racing thoughts that interrupt his focus and concentration.
- C. allowing his mind to notice sensations and feelings and challenge them.
- D. focusing his mind on the present moment rather than on future concerns.

Question 17

Perceived level of stress reported by participants



Which one of the following statements represents an appropriate conclusion for the results of the controlled experiment shown in the graph above?

- A. The perceived level of stress was greater for those who practised mindfulness more than five hours per week than for those who practised mindfulness fewer than five hours per week.
- B. The perceived level of stress was greater for those who practised mindfulness fewer than five hours per week than for those who practised mindfulness more than five hours per week.
- C. People with a higher perceived level of stress did more hours of mindfulness practice per week than those who had a lower perceived level of stress.
- D. People with a lower perceived level of stress did fewer hours of mindfulness practice per week than those who had a higher perceived level of stress.

Use the following information to answer Questions 18 and 19.

As part of her VCE Psychology practical investigation, Tanya is planning a controlled experiment to investigate the effect of room temperature on sleep quality. The following is an excerpt from her logbook:

22 June – How do I measure room temperature? I have read that digital thermometers are the most accurate measurement devices. There are two different digital thermometers that I can purchase with the funding available. I should test them to determine the most accurate thermometer to use in the study.

28 June – Results from my digital thermometer tests. All tests were taken in the same room on the same evening.

Time	9.30 pm	9.40 pm	9.50 pm
Thermometer 1	18 °C	17 °C	19 °C
Thermometer 2	20 °C	20 °C	20 °C

Question 18

If the true value of the room temperature was 18 °C across all three testing times, which of the following best describes the test Tanya undertook and the results of her test?

	Measure of agreement used by Tanya	Thermometer that shows the most precision	Thermometer that shows the most accuracy
A.	repeatability	Thermometer 2	Thermometer 1
B.	reproducibility	Thermometer 1	Thermometer 2
C.	repeatability	Thermometer 1	Thermometer 2
D.	reproducibility	Thermometer 2	Thermometer 1

Question 19

Which one of the following supports authentication of Tanya's generated primary data?

- A. The data is accurate and precise.
- B. The student's ethical considerations are outlined.
- C. The student's logbook contains both qualitative and quantitative data.
- D. The student's logbook documents each stage of her project with dated entries.

Question 20

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

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

SECTION B

Question 1 (8 marks)

Dr Sharma is investigating the impact of sleep deprivation on high-school students' affective and cognitive functioning. She has carried out a literature review on the topic that she is investigating and she is now seeking ethics approval to complete a controlled experiment with a sample of willing high-school students. In stage 1 of the study, the participants will spend as much time in bed as they like and sleep as normal for one week. In stage 2, they will have their time in bed restricted to a total of four hours per night and will be told not to sleep in any other location for one week. After each stage, the participants will complete a series of cognitive and affective tests.

- a. Outline **two** purposes of the literature review carried out by Dr Sharma. 2 marks

- b. Explain why Dr Sharma's planned investigation would be best classified as a controlled experiment rather than as a correlational study. 3 marks

- c. Considering the ethical concept of beneficence, would an ethics committee be likely to approve Dr Sharma's study? Justify your response. 2 marks

- d. Identify a possible quantitative cognitive test that could be used to measure the impacts of sleep deprivation. 1 mark

Question 2 (12 marks)

Ivaan was conducting their student-designed scientific investigation.

The following are extracts from their scientific poster.

Independent variable (IV): Memory technique used

Dependent variable (DV): The 500-word passage

Method:

- One non-VCE psychology class at Moondown High School was selected and split into three groups.
- Group 1 was taught how to use acronyms.
- Group 2 was taught how to use acrostics.
- Group 3 was instructed to use traditional study skills (e.g., note taking, identifying main ideas).
- After the teaching session, all groups studied a 500-word passage over the next week.
- At the end of the study period, students were asked to recall the content of the passage.

Results:

Students who were taught the acronym and acrostics methods recalled twice as much content of the passage as students who were taught traditional study skills.

a. What is **one** difference between acronyms and acrostics?

1 mark

b. What is a possible aim for Ivaan’s investigation?

1 mark

c. Is Ivaan’s identification of the dependent variable correct? Justify your response.

2 marks

- d. With respect to Ivaan’s investigation, explain what is meant by ‘internal validity’ and ‘external validity’. 4 marks

Internal validity _____

External validity _____

- e. What term would be used to describe the results of Ivaan’s investigation if the results were similar but the investigation had been carried out under slightly different conditions? 1 mark

- f. Based on the initial results, Ivaan decides to modify the method and complete the investigation again.

Suggest **one** way in which Ivaan could modify their method to improve the internal validity of their investigation. 3 marks

CONTINUES OVER PAGE

Question 4 (14 marks)

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

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

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

The psychologists advertised on social media for volunteers aged 22 and over, and who hold a current full driver’s licence, to participate in the investigation. Eight hundred eligible volunteers were allocated to groups based on the following age ranges.

Age range of group	22–29	30–39	40–49	50–59	60–69	70–79	80+
---------------------------	-------	-------	-------	-------	-------	-------	-----

The psychologists randomly selected 50 volunteers from each group to participate in the investigation, giving a total of 350 participants.

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

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

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

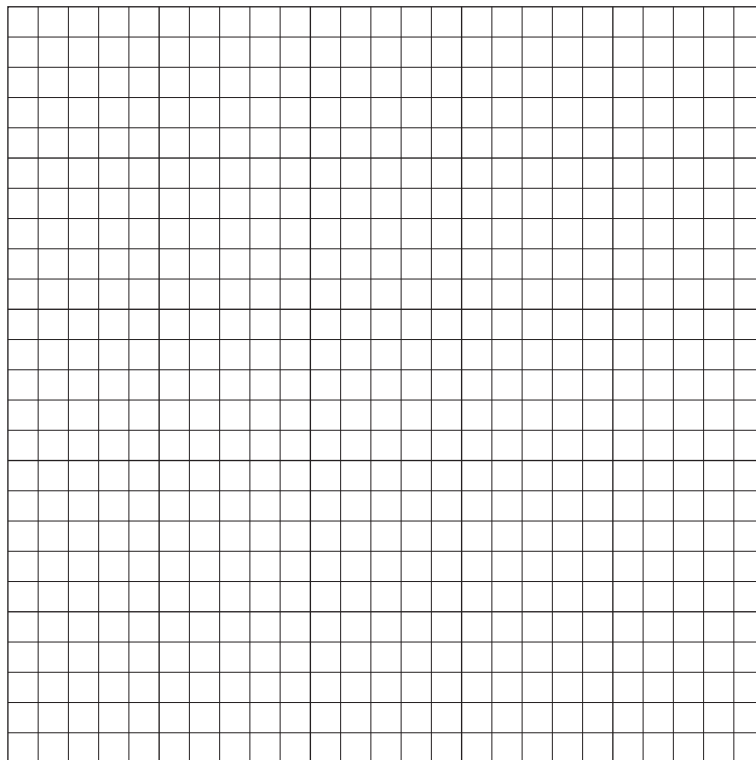
Day	Mean number of driving errors for all age groups
1	5.2
2	22.3
3	21.7

a. Write a hypothesis for the investigation.

3 marks

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

3 marks

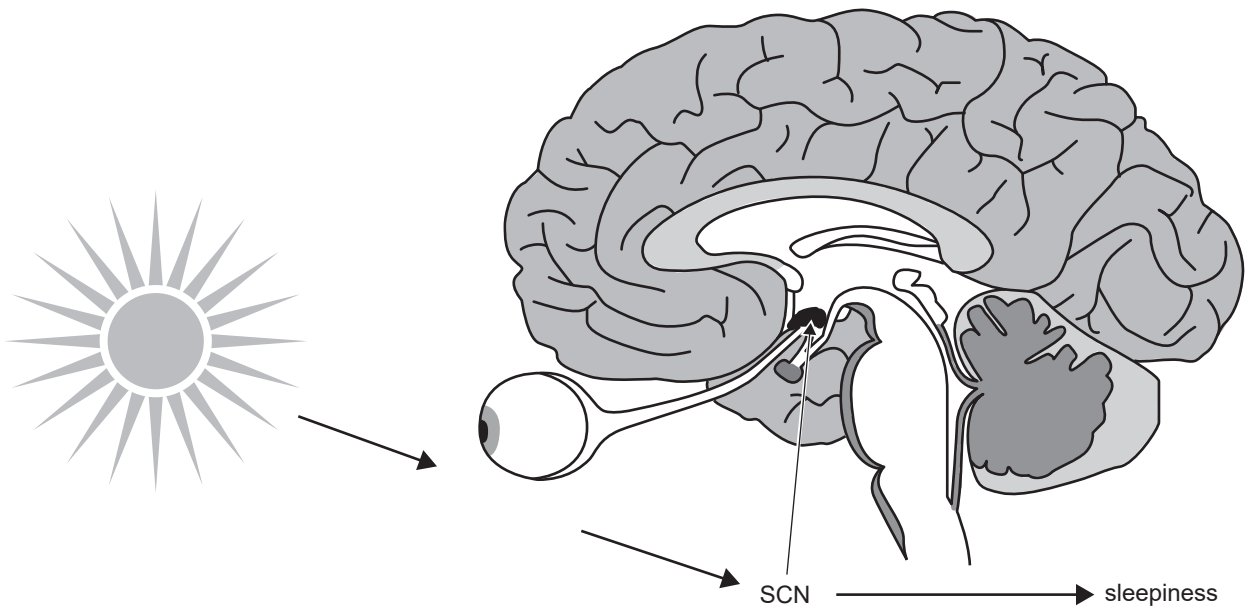


c. Identify and outline **one** ethical concept that should be applied in this research.

2 marks

Question 5 (5 marks)

Annotate the diagram below to explain the link between exposure to sunlight and the internal biological mechanisms of melatonin levels and sleepiness.



Source: E Gil Ponce, 'Ambulatory assessment of human circadian phase and related sleep disorders from heart rate variability and other non-invasive physiological measurements'. Doctoral dissertation, University of Groningen, 2017, <www.researchgate.net/figure/The-suprachiasmatic-nuclei-SCN-located-in-the-anterior-hypothalamus-is-the-master_fig1_328788788>

Question 6 (6 marks)

The following infographic was posted on social media.

Tips for a good night's sleep



1. Play a game on your phone until you fall asleep

2. Avoid eating late-night snacks

3. Make sure you stay super warm all evening

Sources (clockwise from top left): mentalmind/Shutterstock.com;
Olly Kava/Shutterstock.com; Julia Kutsaeva/Shutterstock.com

PSYCHOLOGY (SAMPLE)

Referring to the infographic on page 18, critically evaluate **two** of the claims by considering psychological information, theories and/or models.

Claim number _____

Critical evaluation of the claim _____

Claim number _____

Critical evaluation of the claim _____

Question 8 (10 marks)

Aboriginal and Torres Strait Islander peoples view social and emotional wellbeing from a multidimensional and holistic framework.

Source 1

In 2017, the Australian Government Department of Health led an extensive consultation process (*My Life My Lead*) across Australia to listen to Aboriginal and Torres Strait Islander people share their stories and experiences.

The following two quotations come from this consultation.

‘The cultural determinants of health encompass the cultural factors that promote resilience, foster a sense of identity and support good mental and physical health and wellbeing for individuals, families and communities.’

‘The importance of culture underpins the value that Aboriginal and Torres Strait Islander people place on continuing to practise ways of knowing and being, which are embodied in Country, family, ancestors, language, art, dance, songs and ceremony.’

Source: adapted from *My Life My Lead – Opportunities for strengthening approaches to the social determinants and cultural determinants of Indigenous health: Report on the national consultations*, December 2017, Commonwealth of Australia as represented by the Department of Health, 2017, pp. 4, 7 and 9

Source 2

Korin Korin Balit-Djak: Aboriginal health, wellbeing and safety strategic plan 2017–2027 provides an overarching framework for action to improve the health, wellbeing and safety of Aboriginal Victorians now and over the next 10 years.

The following quotations come from this strategic plan.

‘The history of Aboriginal Victoria tells the story of Aboriginal communities’ struggle for the right to self-determine their lives to ensure that their future generations survive and thrive. It is acknowledged that there is no single approach to achieving self-determination and that the requirements of each Victorian Aboriginal community are unique.’

‘Australian and international evidence demonstrates that self-determination is the only policy approach that has produced effective and sustainable outcomes for Indigenous peoples.’

Source: adapted from *Korin Korin Balit-Djak: Aboriginal health, wellbeing and safety strategic plan 2017–2027*, State of Victoria, Australia, Department of Health and Human Services, 2017, pp. 8, 19 and 21

Source 3

The Victorian Aboriginal Community Controlled Health Organisation (VACCHO) is the peak body for Aboriginal and Torres Strait Islander health and wellbeing in Victoria.

On Tuesday 17 May 2022, VACCHO launched the Balit Durn Durn Centre of Excellence in Social and Emotional Wellbeing.

The following quotations are from the online launch advertisement.

‘We are launching the Victorian Aboriginal Centre of Excellence in Social and Emotional Wellbeing, an initiative designed to foster innovation and improvement in social and emotional wellbeing practice, policy and research.’

‘The launch is a historic moment for Community and the Centre will play a major role in improving the social and emotional wellbeing of Aboriginal people across Victoria. The Centre is currently being established by VACCHO in partnership with Aboriginal peoples and Communities across Victoria. It is a Centre for Aboriginal people, managed by Aboriginal people.’

Source: adapted from VACCHO website, ‘About Us’, ‘Launch Event: Aboriginal Centre of Excellence in Social and Emotional Wellbeing’, <www.vaccho.org.au>

Answers to multiple-choice questions

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