

Trial Examination 2020

VCE Psychology Units 3&4

Written Examination

Question and Answer Booklet

Reading time: 15 minutes

Writing time: 2 hours 30 minutes

Student's Name: _____

Teacher's Name: _____

Structure of booklet

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

Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.

Students are NOT permitted to bring into the examination room: blank sheets of paper and/or correction fluid/tape.

No calculator is allowed in this examination.

Materials supplied

Question and answer booklet of 32 pages

Answer sheet for multiple-choice questions

Additional space is available at the end of the booklet if you need extra paper to complete an answer.

Instructions

Write your **name** and your **teacher's name** in the space provided above on this page, and on the answer sheet for multiple-choice questions.

All written responses must be in English.

At the end of the examination

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

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

Students are advised that this is a trial examination only and cannot in any way guarantee the content or the format of the 2020 VCE Psychology Units 3&4 Written Examination.

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SECTION A – MULTIPLE-CHOICE QUESTIONS

Instructions for Section A

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1; an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

Question 1

Which major division of the nervous system is responsible for processing information about the body's internal and external environments?

- A. central
- B. somatic
- C. parasympathetic
- D. peripheral

Question 2

A spinal reflex

- A. occurs without any synaptic activity.
- B. occurs with just one synaptic exchange between neurons.
- C. occurs with more than one synaptic exchange between neurons.
- D. can occur with either one or two synaptic exchanges between neurons.

Question 3

As a result of the consolidation of memory, a neuron can grow additional

- A. somas.
- B. axons.
- C. dendrites.
- D. receptor sites on the axon terminals.

Question 4

When an excitatory neurotransmitter binds with a postsynaptic receptor, it

- A. triggers an action potential in the synapse.
- B. triggers an action potential in the axon.
- C. makes the postsynaptic neuron more likely to reach an action potential threshold.
- D. ensures that the postsynaptic neuron reaches an action potential threshold.

Question 5

Which one of the following locations must gamma-amino butyric acid (GABA) first be released from in order for it to have an inhibitory effect on a neuron?

- A. a receptor site
- B. an axon terminal
- C. a soma
- D. the myelin sheath

Use the following information to answer Questions 6–9.

While on a camping trip, Jess and Jun were playing with a frisbee in a remote part of the bush. Jess threw a frisbee that hit a beehive, resulting in thousands of bees swarming towards both Jess and Jun who responded by sprinting towards their tent to escape from the bees. Within a minute, both Jess and Jun were relieved to have escaped the threat of the bees once they found refuge in their secured tents.

Question 6

Which one of the following biological events occurred first in Jess and Jun's responses to the swarming bees?

- A. adrenaline released into the bloodstream
- B. activation of the fight-flight-freeze response
- C. activation of the sympathetic nervous system
- D. cortisol released into the bloodstream

Question 7

Which one of the following biological processes would have been suppressed during the fight-flight-freeze response?

- A. respiration rate
- B. blood pressure
- C. tear gland activity
- D. the release of sugar and fats into the bloodstream

Question 8

After Jess and Jun arrived safely back at their tents, Jun was somewhat embarrassed when he noticed that he had urinated when he was initially shocked by the swarming bees.

This could be explained by the

- A. activation of the bladder via the sympathetic nervous system.
- B. bladder relaxing excessively via the sympathetic nervous system.
- C. activation of the bladder via the parasympathetic nervous system.
- D. bladder relaxing excessively via the parasympathetic nervous system.

Question 9

In terms of the General Adaptation Syndrome, which stage were Jess and Jun most likely experiencing just prior to finding refuge in their tents?

- A. shock
- B. countershock
- C. resistance
- D. exhaustion

Question 10

Parkinson's disease is caused by the degeneration of neurons in the

- A. motor cortex.
- B. cerebellum.
- C. hippocampus.
- D. substantia nigra.

Question 11

Parkinson's disease can be best explained by a lack of messages delivered via

- A. neurotransmitters to the skeletal muscles.
- B. neurotransmitters to the motor centres of the brain.
- C. hormones to the motor centres of the brain.
- D. hormones to the skeletal muscles.

Use the following information to answer Questions 12–15.

Rani is a VCE English teacher who, on a Thursday afternoon in the early part of third term, tested positive for COVID-19. Initially Rani became highly anxious that she may have spread the virus to several of her students and that her infection could result in a school closure for a significant portion of the third term. The school acted swiftly and had a 24-hour closure on Friday and closely monitored the health of Rani's students in particular. Rani was counselled by one of the members of the leadership team at her school over the weekend and was informed that she would be required to self-isolate for three weeks. Rani expressed her concern that her VCE students would fall behind over this period. Rani was assured that her students would be supported and could complete any work that she set for them and that they could receive on-campus support from the teaching staff. Following Rani's conversation with the member of her leadership team, she became less stressed about the impact of the enforced absence from school on her VCE students.

Question 12

Rani's response to her initial diagnosis of the COVID-19 virus would most likely be classified as which one of the following sources of stress?

- A. eustress
- B. distress
- C. benign
- D. acculturative stress

Question 13

Rani's evaluation of the level of significance of her enforced absence from school following her discussion with the member of the school's leadership team is an example of

- A. a primary appraisal.
- B. a reappraisal.
- C. eustress.
- D. countershock.

Question 14

Rani's high level of anxiety that was triggered by the thought that she had spread the virus to several of her students, which occurred on the Thursday of her initial diagnosis, occurred during

- A. primary appraisal.
- B. reappraisal.
- C. secondary appraisal.
- D. a period of exhaustion.

Question 15

Following the first weekend of her diagnosis, Rani felt relatively 'normal' and started making plans to set work for her class. This started to reduce her level of anxiety, as she felt like she was assisting her VCE students to best manage her absence from their classes.

Which one of the following coping strategies has Rani used in this case?

- A. avoidance
- B. approach
- C. exercise
- D. resistance

Use the following information to answer Questions 16–20.

Isabelle spent her childhood living in Korumburra, a country town in the southeast of Victoria. For her thirteenth birthday she was given a horse, which was a source of great excitement. This was Isabelle's first horse and she had to learn how to safely ride the horse, care for it and satisfy a variety of other demands, which resulted in a positive change in her lifestyle. Five years later Isabelle can still vividly remember the day she received her horse.

Question 16

Which method of retrieval would Isabelle most likely use to remember that she received her horse on her thirteenth birthday?

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

Question 17

Which type of neurotransmitter or neurohormone would have been involved in the encoding of Isabelle's memory of the level of excitement that she experienced when she was given the horse for her birthday?

- A. acetylcholine
- B. adrenaline
- C. melatonin
- D. dopamine

Question 18

Which one of the following best describes Isabelle's situation of being gifted the horse?

- A. a form of distress
- B. a life event
- C. acculturative stress
- D. a daily pressure

Question 19

Isabelle's memory of receiving the horse would be stored in which one of the following brain structures?

- A. amygdala
- B. cerebral cortex
- C. cerebellum
- D. hippocampus

Question 20

Which one of the following brain structures would play a key role in Isabelle retrieving the emotional details, such as the excitement, triggered by receiving the horse for her thirteenth birthday?

- A. amygdala
- B. cerebral cortex
- C. cerebellum
- D. hippocampus

Question 21

In terms of neural plasticity, long-term depression can best be described as a

- A. result of synaptic pruning.
- B. strengthening of neural pathways.
- C. result of a repeatedly lowered level of input to postsynaptic neurons.
- D. result of classical conditioning.

Question 22

Pavlov conducted a classical conditioning experiment that involved conditioning a dog to salivate at the sound of a bell.

In the experiment, the conditioned response was controlled by which one of the following divisions of the nervous system?

- A. the somatic nervous system
- B. the spinal cord
- C. the brain
- D. the autonomic nervous system

Question 23

For classically conditioned responses, stimulus generalisation

- A. always results in adaptive behaviour.
- B. can only result in maladaptive behaviour.
- C. can result in either adaptive or maladaptive behaviour.
- D. results in neither adaptive or maladaptive behaviour.

Use the following information to answer Questions 24–26.

Claudia likes to buy various items on eBay. Her approach to purchasing items is to search for the goods on eBay and when she finds something she likes, she sets a reminder alert on her phone for one hour before the bidding process closes for that item. When Claudia receives her alert, she generally bids 50% more than the current asking price in order to scare off other bidders that may have interest in the item. She has found that this approach works more than half of the time and thus she is often successful with her eBay purchases. Claudia's mother Gemma has closely observed Claudia's buying behaviour and continually warns her against purchasing items from eBay, as Gemma buys the majority of her items from shops where she believes there is less risk of receiving faulty products.

Question 24

The antecedent for Claudia's behaviour one hour before the close of the bidding process is

- A. viewing the item on eBay.
- B. receiving an alert on her phone.
- C. putting a bid on the item.
- D. successfully purchasing the item.

Question 25

For the occasions when Claudia is outbid on an item, her behaviour is

- A. being punished.
- B. being negatively reinforced.
- C. unlikely to change due to the absence of an obvious consequence.
- D. likely to change due to response cost.

Question 26

Despite closely observing Claudia's online purchasing behaviour, Gemma is unlikely to buy items from eBay due to which one of the following stages of observational learning?

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

Use the following information to answer Questions 27–29.

Glutamate is a neurotransmitter that binds with AMPA and NMDA receptors during the formation of memory.

Question 27

Glutamate plays a key role in the formation of which one of the following types of memories?

- A. procedural
- B. sensory
- C. semantic
- D. short-term

Question 28

In this case glutamate will have

- A. an inhibitory effect on a presynaptic neuron when it is released into the synapse.
- B. an excitatory effect on a presynaptic neuron when it is released into the synapse.
- C. an excitatory effect on a postsynaptic neuron when it binds with the AMPA/NMDA receptors.
- D. an inhibitory effect on a postsynaptic neuron when it binds with the AMPA/NMDA receptors.

Question 29

The AMPA and NMDA receptors are located

- A. in the myelin sheath.
- B. on the dendrites.
- C. on the axon terminals.
- D. in the cell body.

Question 30

Observational learning occurs when the learner observes both a model's

- A. conditioned stimulus and conditioned response.
- B. antecedent and consequence.
- C. behaviour and consequence.
- D. antecedent and behaviour.

Use the following information to answer Questions 31 and 32.

During spring, Milo the cat was exploring the backyard when a myna bird from a nearby nest would repeatedly squawk and then swoop him. This startled Milo, and it happened on several occasions. Months later, whenever Milo hears the squawk of a myna bird, he scurries to safety, noticeably shaking.

Question 31

In terms of classical conditioning, the conditioned stimulus is

- A. Milo seeing a myna bird.
- B. Milo hearing the squawk of a myna bird.
- C. Milo's shaking.
- D. Milo exploring the backyard.

Question 32

In terms of classical conditioning, the unconditioned response is

- A. Milo's startled response.
- B. Milo scurrying to shelter.
- C. Milo's shaking.
- D. Milo being swooped by a myna bird.

Use the following information to answer Questions 33 and 34.

Vlad is an 18-year-old university student. He generally has difficulty waking up in the morning on weekdays and tends to be more irritable on school days in comparison to weekends and holidays when he sleeps in. Recently he has been consuming two standard drinks of alcohol on Sunday nights to help relax him before he tries to fall asleep.

Question 33

Vlad's irritability on school days is an example of what type of symptom of sleep deprivation?

- A. cognitive
- B. behavioural
- C. affective
- D. physiological

Question 34

When the effects of the two standard drinks of alcohol have reached his brain, in comparison to his normal level of functioning (with a blood-alcohol concentration of 0.0), Vlad is most likely to experience an enhanced

- A. level of cognition.
- B. level of concentration.
- C. mood.
- D. level of anxiety.

Question 35

Which one of the following stages of sleep will tend to occur the **fewest** number of times over the course of a normal night's sleep for an adolescent?

- A. REM
- B. NREM Stage 1
- C. NREM Stage 2
- D. NREM Stage 4

Question 36

An individual's time orientation would be most accurate when the individual is

- A. engaged in a task requiring selective attention.
- B. having a daydream.
- C. having a dream during sleep.
- D. experiencing a meditative state.

Question 37

Which one of the following age groups is likely to experience the least amount of NREM sleep?

- A. infants
- B. adolescents
- C. adults
- D. the elderly

Question 38

Various experiments have explained the role of sleep in the consolidation of procedural memories.

Which type of sleep and which theory of sleep would support this theory?

- A. NREM sleep and the restorative theory of sleep
- B. REM sleep and the restorative theory of sleep
- C. NREM sleep and the evolutionary theory of sleep
- D. REM sleep and the evolutionary theory of sleep

Use the following information to answer Questions 39–42.

The Australian Navy was interested in testing the use of the light-filtering goggles to be used during night shifts while at sea. The goggles were designed to exclude lower level light waves (less than 530 nm). These light waves were thought to suppress melatonin levels and thus make it difficult for crew members to sleep following their night shift. 20 crew members volunteered to participate in the study: 9 males and 11 females aged 21–33.

Sleepiness was measured from 6.30 am to 7.00 am of each shift by both a self-report scale and a continuous performance test that measured attention and interest, in which subjects were shown a series of letters. In the first half of the experiment, the subject had to respond whenever an 'X' was displayed on a screen. In the second half, they had to respond whenever an 'A' followed by a 'Z' was displayed.

The experiment was conducted over six night shifts, in which the participants worked from 11.00 pm to 7.30 am. For the first three night shifts, the participants did not wear the light-filtering goggles. On the fourth to sixth night shifts, the participants wore the light-filtering goggles from 5.00 am to 6.30 am.

Question 39

The independent variable of this experiment is

- A. gender.
- B. the level of sleepiness of the participants.
- C. whether the participants used light-filtering goggles or not during their shift.
- D. the scores on the continuous performance test.

Question 40

Which one of the following would be a potential confounding variable for this experiment?

- A. the gender imbalance
- B. the small sample size used
- C. an order effect
- D. the lack of validity of the data

Question 41

Following the publication of the findings of the experiment, there was some criticism that the use of self-reporting would have been highly subjective and thus an ineffective method of measuring sleepiness for the 20 participants tested.

This criticism specifically relates to

- A. reliability.
- B. validity.
- C. the standard deviation of scores.
- D. the independent variable.

Question 42

Which one of the following best identifies the method of allocation used for this experiment?

- A. The method of allocation was convenience.
- B. The method of allocation was random.
- C. The method of allocation was non-random.
- D. There was no form of allocation to groups given the use of a repeated-measures research design.

Question 43

Which one of the following statements is correct when referring to anxiety?

- A. It can only lead to maladaptive behaviour by the sufferer.
- B. It is a state of tension that exceeds a person's ability to cope.
- C. It involves worrying that an undesirable event is about to happen.
- D. It is an irrational fear of a situation.

Question 44

In terms of informed consent procedures for research of mental disorders, according to the National Statement on Ethical Conduct in Human Research,

- A. it is not possible to conduct an experiment without receiving the informed consent of the patient.
- B. participants should be informed of their withdrawal rights prior to the commencement of the research.
- C. participants must be told if they are part of a control or experimental condition prior to the commencement of the research.
- D. researchers only have to provide details of experimental procedures to the person that gave informed consent and not necessarily to the participant if a legal guardian has provided consent on their behalf.

Question 45

Systematic desensitisation is a

- A. type of cognitive therapy.
- B. type of behavioural therapy.
- C. form of psychoeducation.
- D. transtheoretical approach to the treatment of a phobia.

Question 46

Training the family members of a phobic person to challenge unrealistic thoughts about a phobic stimulus that has contributed to the phobic person's maladaptive behaviour is a key feature of

- A. psychoeducation.
- B. the transtheoretical model of behavioural change.
- C. systematic desensitisation.
- D. behavioural therapy.

Use the following information to answer Questions 47–50.

An in-depth research investigation of three school principals who had suffered stress-related illness was sponsored by a university. A team of personnel was assembled to gather data from the principals via interviews that asked a variety of open-ended questions such as ‘What are the most stressful day-to-day activities in your role as principal?’.

Question 47

What type of research investigation was used?

- A. observational study
- B. case study
- C. experiment
- D. self-report

Question 48

What type of data was generated?

- A. primary; qualitative
- B. primary; quantitative
- C. secondary; qualitative
- D. secondary; quantitative

Question 49

An advantage of the form of data generated is that it

- A. would be easy to summarise.
- B. would be easy to analyse.
- C. could provide ideas for further research.
- D. would be highly reliable.

Question 50

In a response to an interview question, one of the principals stated that she was experiencing a period of temporary stress at the end of year due to the demands of dealing with a scandal at the school that attracted undesirable media attention.

According to the mental health continuum, this principal would most likely be classified as

- A. mentally healthy.
- B. experiencing a mental health problem.
- C. exhausted.
- D. suffering from a mental disorder.

END OF SECTION A

SECTION B**Instructions for Section B**

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

Question 1 (5 marks)

Val has just picked up a hot cup of coffee and has responded by putting the coffee cup down.

- a.** Identify **two** similarities between a conscious response and an unconscious response to the heat of the coffee cup. 2 marks

- b. i.** If Val's response was an unconscious response to the sensory stimuli of holding a hot coffee cup, what is the name of the response? 1 mark

- ii.** Explain why Val may have experienced an unconscious response to the sensory stimuli of the heat from the coffee cup. 2 marks

Question 2 (4 marks)

Describe **two** major differences between Selye’s General Adaptation Syndrome and Lazarus and Folkman’s Transactional Model of Stress and Coping.

Question 3 (2 marks)

Explain how the ethical principle of beneficence was breached by the ‘Little Albert’ experiment.

Question 4 (9 marks)

Molly is fifteen years old and has been playing club football (AFLW) for Ashwood for five years. Molly's kicking for goal has been inconsistent during that period of time. An assistant coach recently filmed a game and noticed a flaw in Molly's ball-drop when preparing to kick for goal. The assistant coach pointed this out to Molly and devised a series of drills at her home ground at Ashwood that would help her ball-drop. The first part of the drill was theoretical and required Molly to state the following:

1. Hold the ball straight.
2. Place the laces of the ball in the intended kicking direction.
3. Spread the fingers evenly apart on the ball.
4. Drop the ball straight towards the ground.

The second part of the drill simulated a game of football in which Molly would regularly gain possession and quickly kick the ball to a target using her newly learned ball-grip/ball-drop technique.

- a.** In terms of plasticity of the brain, explain the role of long-term potentiation in Molly altering her ball-drop technique.

3 marks

- b.** Identify both an implicit memory **and** an explicit memory that Molly will utilise when remembering her ball-drop technique.

4 marks

c. Molly has a football game this Sunday at Malvern.

Explain how she could use context cues to help her remember the key instructions of her ball-grip and ball-drop.

2 marks

Question 5 (9 marks)

A research team from Bendigo University that specialised in research on the effects of dementia on cognition. The team wanted to determine if a series of brain-training exercises could slow down the effects of the progression of symptoms of Alzheimer's disease on individuals that had been diagnosed in the last two years. Many of the brain-training exercises were designed to increase the capacity of short-term memory.

The researchers used a matched-participants research design that matched the participants on the severity of their dementia via a series of cognitive tests. The participants were then randomly allocated to either the experimental group or a control group.

The experimental group were exposed to a 30-minute daily brain-training regime (over a 30-day period) involving a computer that measured the speed and accuracy of cognition, which the control group were not exposed to. At the end of the 30-day period, both groups were exposed to a series of tests designed to evaluate the capacity of short-term memory. The participants were exposed to a sheet of 25 images for 30 seconds. At the end of the exposure time, they were required to write down the names of as many of the images as possible.

- a.** Name **and** outline a key symptom of the early stages of Alzheimer's Disease. 2 marks

- b.** Describe the importance of the researchers establishing a control group in the experiment. 2 marks

- c.** Evaluate the validity of the method of data collection. 2 marks

d. Write a research hypothesis for this experiment.

3 marks

Question 6 (11 marks)

Zahara was working a night shift as a shelf-stacker at a supermarket. She and her colleague Jason were stacking the top shelf of the breakfast cereal section when Jason fell from a ladder, resulting in a severe spinal injury. Shortly after the incident, Zahara was asked several questions by the management team in order to investigate the cause of the accident. A month later, Zahara was called in to give an additional statement to WorkCover, a government insurer for workplace safety.

Zahara claimed that the accident was caused by the workplace negligence of the management team responsible for his duty of care. Representatives of the supermarket argued that the two workers were suffering from the effects of sleep deprivation as they were not able to manage their sleep hygiene effectively.

- a.** Outline the role of both Zahara's short-term memory and long-term memory when she is reconstructing her memory of the incident when questioned by WorkCover. 2 marks

- b.** Explain why Zahara's reconstruction of the memory may **not** be accurate. 2 marks

- c.** Identify a cognitive **and** a behavioural effect of sleep deprivation that may have contributed to Jason's accident. 2 marks

Cognitive effect _____

Behavioural effect _____

- d.** Explain how shift work can contribute to a circadian phase disorder. 2 marks

- e. A report produced by WorkCover provided a recommendation that workplace accidents for shift workers that are attributed to the effects of sleep deprivation could be reduced by bright light therapy to treat their circadian phase disorder.

Explain how bright light therapy can help shift workers to manage their sleep-wake cycles.

3 marks

Question 7 (12 marks)

A researcher was interested in testing the effects of guided meditation prior to a class on classroom attentiveness for university students. An advertisement was placed at Edith Cowan University calling for volunteers to participate in the study. The participants were screened for any mental disorders or a history of drug abuse and consequently 36 participants were selected (20 female and 16 male).

Stage one of the study required the participants to attend a one-hour virtual lecture in which the students had an electroencephalograph (EEG) strapped to the scalp while in a private room. They were required to watch and take notes from a video-recorded lecture, which served as a baseline condition. This was repeated the following week.

In stage two of the study, the participants were required to attend a guided 30-minute meditation session on campus, which finished 5 minutes before the start of another one-hour virtual lecture. This was also repeated the following week.

The EEG determined the average frequency of the participant’s brain waves during the lecture, which was divided into 4 × 15-minute periods with the scores being averaged over the two trials. The results are summarised in the table below.

	Average Hz (frequency) 0–15 minutes	Average Hz (frequency) 16–30 minutes	Average Hz (frequency) 31–45 minutes	Average Hz (frequency) 46–60 minutes
Baseline condition	20.2 Hz	18.2 Hz	16.8 Hz	16.2 Hz
Post-mediation scores	25.1 Hz	20.1 Hz	16.9 Hz	13.9 Hz

- a.

Describe **one** advantage of using an EEG to measure consciousness in comparison to a self-report.

2 marks

- b.

Explain why the participant’s consciousness is a psychological construct during the 30-minute periods of guided meditation.

2 marks

- c.

Explain the effects of a meditative state on time orientation.

2 marks

- d.** Identify the experimental design used and describe **one** advantage of its use in this case. 3 marks

- e.** Identify the sampling procedure used and describe **one** advantage and **one** disadvantage of its use. 3 marks

Question 8 (8 marks)

A recent workplace report produced by a regional healthcare provider emphasised the vulnerability of the mental health of healthcare workers such as doctors and nurses, largely due to the demands of their job.

- a.** What is the benefit of using a mental health continuum to evaluate the mental health of the healthcare workers? 2 marks

- b.** Identify **and** describe a characteristic that would indicate that a healthcare worker is mentally healthy, despite the demands of their job. 2 marks

- c.** Identify **and** describe a biological protective factor that could be implemented to maintain the resilience of a healthcare worker. 2 marks

- d.** Explain how and why healthcare workers may use avoidant coping to deal with the demands of their jobs. 2 marks

[illegible]

END OF QUESTION AND ANSWER BOOKLET

