

Name: _____

Teacher's name: _____

STUDENT NUMBER

Letter

PSYCHOLOGY

Unit 3 Written examination

2021

Reading time: 10 minutes
Writing time: 1 hour 40 minutes

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	35	35	35
B	6	6	45
			Total 80

- 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 white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer booklet.
- 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 **student number** in the space provided above on this page.
- Check that your **name** on your answer sheet for multiple-choice questions is correct.
- All written responses must be in English.

At the end of the examination

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

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

SECTION A – Multiple-choice questions**Instructions for Section A**

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

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

A correct answer scores 1; an incorrect answer score 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 of the following statements about neurotransmitters is incorrect?

- A. neurotransmitters bind to receptor sites on the post-synaptic neuron
- B. glutamate is the primary excitatory neurotransmitter
- C. neurotransmitters are chemical messengers
- D. neurotransmitters act as the lock in the lock-and-key process

Use the following information to answer Questions 2 and 3.

Georgia was walking towards the pool when she stood barefoot on a sharp object. She immediately pulled her foot away.

Question 2

Which of the following sequences most accurately represents the sequence of information transmission that occurred when Georgia pulled her foot away?

- A. receptors in the sole of her foot → spinal cord → sensory areas of her brain
- B. receptors in the sole of her foot → spinal cord → muscles in her foot and leg
- C. sensory areas of the brain → spinal cord → muscles in her foot and leg
- D. receptors in the sole of her foot → sensory areas in the brain → muscles in her foot and leg

Question 3

What evidence supports the notion that Georgia's response was unconscious?

- A. her response involved awareness
- B. it was a voluntary response
- C. it was an involuntary response
- D. her response was goal directed

Use the following information to answer Questions 4 and 5.

Billy was swimming at the beach when he noticed a shadow approaching. He immediately felt anxious as he was unsure if it was something dangerous.

Question 4

The dominant division of Billy's autonomic nervous system in this scenario is the

- A. central nervous system.
- B. peripheral nervous system.
- C. sympathetic nervous system.
- D. parasympathetic nervous system.

Question 5

Which physiological changes are likely to occur if Billy frantically swims towards the shore?

- A. a relaxed bladder and a slowed heart rate
- B. constricted bronchi and an accelerated heart rate
- C. constricted bronchi and constricted pupils
- D. dilated bronchi and dilated pupils

Question 6

Nick was walking into the shop to pick up a few items when his phone rang – his wife was calling. He answered and said that he would call her back as soon as he was finished shopping. A few moments after he hung up the phone, he ran into a friend; they started talking and decided to get a coffee together. When he returned home over an hour later, his wife was angry that he had not called her back.

According to the Atkinson-Shiffrin multi-store model of memory, the information about calling his wife back entered Nick's _____ memory; but did not pass into his _____ memory.

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

Use the following information to answer Questions 7 and 8.

Tammy was taking notes for her friend who was away from class.

Question 7

When Tammy writes, neural messages are transmitted from her brain to the muscles in her hand. Which of the following correctly lists the types of messages involved?

- A. chemical messages around neurons, as well as chemical messages between neurons
- B. electrical messages within neurons, as well as electrical messages between neurons
- C. electrical messages within neurons, as well as chemical messages between neurons
- D. electrical messages between neurons, as well as chemical messages within neurons

Question 8

In her notes, Tammy was writing down the different roles of each of the structures in a neuron. The role of the dendrite is to

- A. carry information down the neuron.
- B. release neurotransmitters.
- C. store neurotransmitters.
- D. receive neural messages.

Use the following information to answer Questions 9-11.

Amelia is studying for her upcoming maths exam. She needs to learn some algebraic formulas, as she missed a few lessons on algebra.

Question 9

It is likely that the neurotransmitter dominating Amelia's neural pathways as she is learning the new algebraic formulas is

- A. GABA.
- B. glutamate.
- C. cortisol.
- D. adrenaline.

Question 10

Amelia decides to use mind maps to revise the other topics in the exam, which enables her to visually represent the relationships between key concepts. She has found that it is a useful way to help her recall information when completing assessment tasks throughout the term. Amelia likely finds this method of learning to be the most effective due to

- A. reconstructive memory.
- B. maintenance rehearsal.
- C. elaborative rehearsal.
- D. state dependent cues.

Question 11

Amelia realises that some of the formulas she learnt in maths last year are also being tested in the upcoming exam. She finds that she is able to write out a formula she learnt last year more quickly than expected. Which of the following methods of retrieval does Amelia demonstrate?

- A. relearning
- B. reconstruction
- C. cued recall
- D. recognition

Use the following information to answer Questions 12 and 13.

John decided to investigate the impact that stress has on memory recall. He thought that stress could be induced by providing a shorter time limit to memorise words.

In the first condition, the participants learnt a list of 20 words (presented on a piece of paper) in 45 seconds; in the second condition, the participants had a different list of 20 words, but they only had 15 seconds to learn the words from the printed list before writing down as many as they could remember. He had informed the participants that the more words they could recall, the higher their pay would be to participate in the study.

The results are shown below:

	Condition 1 (45 seconds)	Condition 2 (15 seconds)
Mean words recalled	11.4	7.1

Question 12

Which neurohormone would likely be detected in higher amounts in Condition 2, compared to Condition 1?

- A. adrenaline
- B. cortisol
- C. glutamate
- D. GABA

Question 13

Rather than stress causing the effect of the result in Condition 2 (with 7.1 words recalled on average), a confounding variable could be

- A. the limited duration of sensory memory.
- B. the limited capacity of short-term memory.
- C. the limited duration of long-term memory.
- D. the limited capacity of long-term memory.

Question 14

With regard to the Atkinson–Shiffrin model of memory, which of the following statements is incorrect?

- A. sensory memory has a greater capacity than short-term memory
- B. sensory memory has a shorter duration than short-term memory
- C. iconic and echoic memory are the only types of sensory memory
- D. sensory memory holds sensory information in its raw form

Use the following information to answer Questions 15 and 16.

Linda was at a dinner party where they served oysters. She loves oysters, so had a few. Afterwards, she felt ill and has never been able to eat an oyster again.

Question 15

Which classical conditioning terms match the following elements from Linda's learning?

	Oysters	Feeling ill
A.	unconditioned stimulus	conditioned stimulus
B.	unconditioned response	conditioned response
C.	neutral stimulus	conditioned stimulus
D.	neutral stimulus	unconditioned response

Question 16

Linda could demonstrate stimulus generalisation if she showed which of the following responses?

- A. feeling nauseated at similar types of seafood
- B. not feeling nauseated at similar types of seafood
- C. feeling nauseated only to oysters
- D. not feeling nauseated to any food

Question 17

David was walking down the road when he witnessed an assault on an elderly person. When the police came, they asked him some questions about the attack. Which of the following could be considered a leading question?

- A. "Where were you when you witnessed the assault?"
- B. "What was worn by the person who assaulted the elderly person?"
- C. "How tall was the young man who assaulted the elderly person?"
- D. "When did the assault occur?"

Use the following information to answer Questions 18 and 19.

Tash is an elite gymnast and is attempting to be accepted into the next Olympic squad. The upcoming trials are causing Tash to feel very stressed as she feels under prepared.

Question 18

If Tash were to use an approach strategy to reduce the stress that she is experiencing, which of the following may be an appropriate example?

- A. speaking to a more experienced gymnast for advice
- B. speaking to her friend about their plans on the weekend
- C. going shopping to buy a new outfit
- D. all of the above

Question 19

Tash would be said to have a high-level of coping flexibility if she displayed which of the following characteristics?

- A. an ability to recognise that her coping strategy is ineffective; to discontinue this ineffective coping strategy; and not implement any other coping strategy
- B. an ability to recognise that her coping strategy is ineffective; to discontinue this ineffective coping strategy; and to then implement an alternative coping strategy
- C. an ability to implement a strategy that she knows has worked in the past
- D. an ability to implement a strategy that meets the demands of the stressor she is currently experiencing

Use the following information to answer Questions 20 and 21.

Sue is studying Year 12 Psychology.

Question 20

Sue was learning about the different types of conditioning in her Psychology class. Sue learnt that vicarious conditioning involves the individual learning by

- A. pairing two stimuli together.
- B. receiving a positive consequence.
- C. receiving a negative or positive consequence.
- D. observing someone else receiving a consequence for their behaviour.

Question 21

After learning about memory in class, Sue has decided that when she sits the Psychology exam at the end of the year, she will take some deep breaths to calm herself down, much in the same way she would normally feel in Psychology class. Sue is attempting to manipulate which influence on memory?

- A. maintenance rehearsal
- B. elaborative rehearsal
- C. context dependent cues
- D. state dependent cues

Use the following information to answer Questions 22 and 23.

Marcus always fights with his younger brother on family weekend trips away. As a result, his parents have had enough and decide to take away his phone for the weekend. On the next family weekend trip, Marcus and his brother do not fight.

Question 22

Marcus has learned to stop fighting with his brother through which type of learning?

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

Question 23

According to this scenario, Marcus would demonstrate extinction if he showed which of the following responses?

- A. Marcus starts to fight with his brother again
- B. Marcus decides he does not mind if his phone is taken away
- C. Marcus stops talking to his brother
- D. Marcus buys another phone without telling his parents

Question 24

Aurora has watched her older sister play a complex piece on the piano many times, and although she would like to play the piece herself, she feels she does not have the same ability as her older sister. Because of this, she does not attempt to play the piece. With regards to observational learning, Aurora's decision not to play the piece is most influenced by

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

Use the following information to answer Questions 25 and 26.

Alvin was recently involved in a car accident where his car was side-swiped at an intersection. Although he was not severely hurt, Alvin was badly frightened by the incident and keeps having flash-backs every time he gets into a car.

Question 25

Alvin's memory of the accident was consolidated by the

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

Question 26

Which of the following physiological responses would have been suppressed by the activation of Alvin's fight-flight-freeze response at the time of the incident?

- A. heart rate
- B. sweat gland activity
- C. bowel activity
- D. sugar and fat conversion

Use the following information to answer Questions 27 and 28.

Watson and Rayner's work with Little Albert demonstrated that a fear response could be learnt.

Question 27

In the Little Albert study, the fact that the potential risks of the study were probably not fully explained to Little Albert's mother breaches the ethical principle of

- A. informed consent.
- B. withdrawal rights.
- C. confidentiality.
- D. voluntary participation.

Question 28

In the Little Albert study, what was the unconditioned stimulus?

- A. a loud banging noise
- B. fear to the loud banging noise
- C. a white rat
- D. fear to the white rat

Use the following information to answer Questions 29 and 30.

Xavier is trying really hard to remember a series of quotes for his English essay by reciting them over and over again.

Question 29

Which of Xavier's memory stores is least likely to be involved in this process?

- A. short-term memory
- B. declarative memory
- C. episodic memory
- D. semantic memory

Question 30

By reciting the quotes over and over again, Xavier is utilising the process of

- A. maintenance rehearsal.
- B. elaborative rehearsal.
- C. state dependent cues.
- D. context dependent cues.

Use the following information to answer Questions 31-33.

Twin sisters Kristy and Hayley have just found out their mother has been diagnosed with Alzheimer's disease. The sisters both handled the news very badly and worried about how they would be able to look after their mother.

Question 31

Identify the source of stress the twins would have experienced when they found out about their mother's diagnosis.

- A. daily pressure
- B. life event
- C. acculturative stress
- D. catastrophe

Question 32

In terms of primary appraisal within the Transactional Model of Stress and Coping, the twins would likely consider their mother's diagnosis as

- A. positive/benign.
- B. a challenge.
- C. harm/loss.
- D. a threat.

Question 33

Alzheimer's disease is thought to be due to the death of brain-cells, caused by

- A. amyloid plaques
- B. amyloid tangles
- C. tau protein
- D. tau plaque

Question 34

With regards to implicit and explicit memories, which of the following is correct?

	Implicit memory	Explicit memory
A.	stored in the amygdala	formed in the hippocampus
B.	stored in the amygdala	stored in the cerebral cortex
C.	may be formed in the cerebellum	formed in the hippocampus
D.	may be formed in the cerebellum	stored in the hippocampus

Question 35

Paul was walking to the shops late one night when a person with a mask jumped out in front of him, holding a knife. Paul found himself unable to move.

When a person is put under sudden and extreme stress such as this, it is possible that they will show what is known as a

- A.** countershock response.
- B.** fight response.
- C.** flight response.
- D.** freeze response.

SECTION B**Instructions for Section B**

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

Question 1 (7 marks)

Ella was preparing dinner and while chopping carrots, she accidentally cut deeply into her finger. She instantly felt faint and like she was going to pass out. After a few minutes, she calmed down and walked to the bathroom to grab a bandage.

- a.** Describe the shock sub-stage of Selye's General Adaptation Syndrome in relation to Ella. 2 marks

- b.** Describe the changing role of cortisol as Ella progresses through the alarm reaction and resistance stages of Selye's General Adaptation Syndrome. 2 marks

- c. When assessing her cut finger, Ella was astounded, and blinked in disbelief at how much blood there was. 3 marks

Explain how eye-blinking can be both a conscious and an unconscious response, and the type of response Ella has made.

Question 2 (8 marks)

Jenni and Sue are cousins in their late sixties. At family gatherings each month, they love to reminisce about their holidays they had together as kids, particularly about an enjoyable trip to New York which was over 50 years ago. Although they do not remember many of the details, Jenni remembers Sue falling over while ice skating, but Sue insists that it was Jenni who frequently fell over.

- a.** With regard to the reconstructive nature of memory, suggest why Jenni and Sue's memories are different. 3 marks

- b.** Late in their New York trip, the cousins witnessed a shooting in the street. Sue was terrified and did not want to leave the hotel after the incident; however, it did not seem to bother Jenni. 2 marks

With reference to the Lazarus and Folkman Transactional Model of Stress and Coping, distinguish between the primary appraisals of Jenni and Sue.

- c. Even though Sue is now 67-years-old, she still remembers many details about the traumatic shooting event. In terms of a neurohormone and brain regions, explain why Sue would have an enhanced consolidation of this event, compared to other parts of her trip.

3 marks

Question 3 (11 marks)

Kelly has recently moved out of home and has a new job. She decides to go and see her doctor as she has been experiencing high levels of stress and is finding it difficult to sleep at night. The doctor says that he can give her some medication to help her feel calmer and less stressed.

- a.** With reference to the lock-and-key process, describe how medication that produces neurotransmitters that imitate GABA may help Kelly reduce the high level of activation of her nervous system once an action potential reaches the axon terminal. 4 marks

- b.** Explain the difference between life events and daily pressures. Which of these did Kelly experience? 3 marks

- c.** Kelly continues to take the medication whenever she feels stressed. Identify the three phases of operant conditioning as they relate to this scenario, using key terms to describe the reason for Kelly's continued use of the medication. 4 marks

Question 4 (5 marks)

A neuropsychologist performed several memory tests to assess whether a patient who had sustained a brain injury in a cycling accident was suffering from amnesia.

- a.** Describe the likely effect of damage to the hippocampus on both implicit and explicit memories that were formed before and after the accident. 3 marks

- b.** One of the tests carried out involved 20 different flash cards with different shapes and colours on them. The neuropsychologist showed the patient the cards in a set order and then shuffled them before asking the patient to put them back in the original order. 2 marks

Identify and describe the method of retrieval that the neuropsychologist was testing.

Question 5 (4 marks)

Five years ago, Jarrad learnt to play the guitar. Back then, he used to enjoy playing in a band with a group of school friends in his garage each weekend, and after a lot of practice, he was able to play a range of songs on his guitar effortlessly. At a recent weekend away with his old school friends, he picks up a guitar but has trouble remembering how to play the songs that he used to play in the band.

- a.** Describe the role of both long-term potentiation (LTP) and long-term depression (LTD) in Jarrad being able to play a range of songs on his guitar effortlessly, and then many years later, being unable to remember how to play the songs that he had learnt. 2 marks

- b.** Jarrad wanted to relearn the songs he used to play in the band, so he approached a guitar teacher to help him regain his skill. 2 marks

His teacher suggests that he practises in his garage, where Jarrad originally learnt the band songs.

Explain how practising in his garage may assist Jarrad in retrieving the memory of the songs that he used to play in the band.

Question 6 (10 marks)

Harry thinks his mother is in the early stages of Parkinson's disease. She is 67-years-old, and over the past few months, Harry has begun to notice some small hand tremors and slowness in her movement.

Harry searches for a pamphlet that explains the symptoms of Parkinson's disease, as well as its neurological basis and possible treatments. He hopes that this will encourage his mother to approach their family doctor.

Write a section of an information pamphlet that explains the chronic changes to the functioning of the nervous system as a result of Parkinson's disease.

Include explanations of the interference to neurotransmitter function, symptoms, risk factors, and possible treatments and help to support people with Parkinson's disease.

Also, assess the accuracy of Harry's belief that his mother has the early stages of Parkinson's disease.

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Clearly number all responses in this space.

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VCE PSYCHOLOGY
Written Examination
ANSWER SHEET – 2021

**STUDENT
NAME:**

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

1	A	B	C	D	19	A	B	C	D
2	A	B	C	D	20	A	B	C	D
3	A	B	C	D	21	A	B	C	D
4	A	B	C	D	22	A	B	C	D
5	A	B	C	D	23	A	B	C	D
6	A	B	C	D	24	A	B	C	D
7	A	B	C	D	25	A	B	C	D
8	A	B	C	D	26	A	B	C	D
9	A	B	C	D	27	A	B	C	D
10	A	B	C	D	28	A	B	C	D
11	A	B	C	D	29	A	B	C	D
12	A	B	C	D	30	A	B	C	D
13	A	B	C	D	31	A	B	C	D
14	A	B	C	D	32	A	B	C	D
15	A	B	C	D	33	A	B	C	D
16	A	B	C	D	34	A	B	C	D
17	A	B	C	D	35	A	B	C	D
18	A	B	C	D					