

Name: \_\_\_\_\_

Teacher's name: \_\_\_\_\_

STUDENT NUMBER

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## UNIT 3 PSYCHOLOGY

### Written examination

2023

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	5	5	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 correction fluid/tape.
- No calculator is allowed in this examination.

#### Materials supplied

- Question and answer book.
- Answer sheet for multiple-choice questions.
- Additional space is available at the end of the book if you need extra space 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 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 of the following is accurate about the role of glutamate in neural communication?

- A. glutamate is the only excitatory neurotransmitter in the central nervous system
- B. glutamate makes the pre-synaptic neuron more likely to fire
- C. as more glutamate is released, the synaptic connection is strengthened
- D. glutamate is an antagonist which makes the post-synaptic neuron less likely to fire

**Question 2**

Which of the following about neuromodulators is false?

- A. they influence the activity of other neurotransmitters
- B. dopamine and serotonin are neuromodulators
- C. they exert their influence over a shorter time period than neurotransmitters
- D. they do not release their chemical message into a single synapse

*Use the following information to answer Questions 3 and 4.*

Gabe loves to watch horror movies; however, afterwards, it always takes him some time to calm down as he feels 'jittery.'

**Question 3**

Which division of the autonomic nervous system is dominant after the movie as Gabe is calming down?

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

**Question 4**

During the horror movie, which of the following are most likely to be occurring in Gabe's body?

- A. release of glucose from the liver, contracting pupils and increased sweating
- B. decreased salivation, increased heart rate and relaxation of bronchioles
- C. increased digestion, relaxation of bladder, increased breathing rate
- D. intestines relax, adrenaline released, gall bladder releases bile

**Question 5**

Which of the following is true about serotonin?

- A. it only has an excitatory effect on the post-synaptic neuron
- B. too much serotonin is problematic, but insufficient serotonin will not lead to any issues
- C. serotonin plays important roles in mood and sleep
- D. a lack of serotonin is the cause of motor issues in Parkinson's disease

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Use the following information to answer Questions 6 and 7.

Mason was once able to recite the periodic table of elements easily but has not used chemistry knowledge in years. When he tries to help his younger sister with her chemistry work, he finds that he cannot remember much.

**Question 6**

Which of the following neural processes are most likely to be involved in Mason's forgetting?

	Synaptic strength	Change in connections
A.	long-term potentiation	sprouting
B.	long-term depression	rerouting
C.	long-term potentiation	proliferation
D.	long-term depression	pruning

**Question 7**

Mason and his sister turn the first letters of the first nine elements into a silly, nonsensical word (HHeLiBeBCNOF) to help to remember the elements. What technique have they used?

- A. method of loci
- B. an acronym
- C. an acrostic
- D. maintenance rehearsal

Use the following information to answer Questions 8 and 9.

Mai reaches out for the light switch in the dark. Once her fingers find the switch, she turns it on.

**Question 8**

Which divisions of the nervous system are involved in turning the switch on?

- A. the autonomic and somatic nervous systems
- B. the somatic and central nervous systems
- C. the parasympathetic nervous system and the spinal cord
- D. the sympathetic nervous system and the brain

**Question 9**

Which of the following describes the neuronal activity that occurs as soon as Mai's sensory receptors detect the sensation of the switch moving to its 'on' position?

- A. motor neurons detect the message while interneurons relay the message to the brain
- B. sensory neurons relay the message to the brain
- C. efferent neurons relay the message to sensory receptors
- D. afferent neurons relay the message to skeletal muscles

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Use the following information to answer Questions 10 – 12.

Ramon is feeling under pressure as he is very busy at work and his mother needs additional care after having recently broken her wrist. Ramon has been struggling to finish his work in time to leave and visit his mother to cook her dinner and ensure that she has what she needs. Adding to his stress is his worry that his work is not good enough and that he is a bad son.

**Question 10**

Ramon is very tired during the day, especially after several nights of poor sleep. This fatigue could be considered to be a

- A. primary appraisal.
- B. secondary appraisal.
- C. psychological stress response.
- D. physiological stress response.

**Question 11**

Ramon organises for his mother to have a meal delivery service, allowing his mother to eat on time without Ramon having to leave work early. He can then visit and make sure his mother has all that she needs. This is an example of

- A. context-specific effectiveness.
- B. shock to the stressor.
- C. avoidance coping.
- D. eustress.

**Question 12**

Which of the following appropriately describes the sources of stress for Ramon?

	Internal stressor	External stressor
A.	tasks at work	needing to cook
B.	worry about his work	caring for his mother
C.	guilt for being a bad son	help from other family members
D.	worry about his mother	worry about being a good employee

Use the following information to answer Questions 13 – 15.

Eric has an upcoming work trip to Sydney where he must present a progress update on a big project that he has been working on.

During a weekend indoor soccer match, he slipped and broke his ankle. Eric is now very worried about how he will manage to fly up to Sydney with his crutches and whether he will perform well in his presentation.

**Question 13**

Which of the following is a primary appraisal that Eric might make about doing the presentation after he breaks his ankle?

- A. it is stressful and a threat as he is worried about whether he will perform well
- B. it is a loss as he has already hurt his chances at presenting well
- C. it is a challenge and harm/loss as there is the opportunity to prove what he can do
- D. it is benign-positive as he does not necessarily need to stand for the presentation

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**Question 14**

Which is the most likely secondary appraisal for Eric?

- A. that he should use avoidance strategies
- B. that he has the resources to cope
- C. that he does not have the resources to cope
- D. that he should use approach strategies

**Question 15**

Eric phones the airline and ensures that they can help him with his bags and getting on and off the plane. He also emails a colleague in Sydney to ask them to help set up the presentation. Eric is demonstrating

- A. approach strategies.
- B. avoidance strategies.
- C. emotion focused coping.
- D. repression.

*Use the following information to answer Questions 16 and 17.*

Hannah, who is four, attended her older sister's basketball match. She does not like loud noises and flinches every time the whistle blows. Since then, Hannah dislikes basketballs and flinches every time her sister walks into the room holding her basketball.

**Question 16**

Which of the following statements most correctly summarises the acquisition phase for Hannah's learnt response?

- A. the repeated presentation of the loud whistle just before the basketball has led to flinching
- B. the repeated presentation of the basketball immediately followed by the loud whistle has led to flinching
- C. the repeated association of her sister and the basketball has led to flinching
- D. the continuous presentation of the loud whistle and her sister has created a flinching response

**Question 17**

Which of the below accurately summarises the elements for Hannah's learning?

	Neutral stimulus	Unconditioned stimulus	Conditioned response
A.	the loud whistle	flinching from loud whistle	the basketball
B.	the basketball	the loud whistle	flinching upon hearing the loud whistle
C.	the basketball	the loud whistle	flinching upon seeing the basketball
D.	the loud whistle	the basketball	running away

**Question 18**

Which of the following is correct about classical conditioning?

- A. it always involves a voluntary response
- B. it always requires repeated exposure to conditioned stimuli
- C. the learner is passive in the learning process
- D. the learnt response is permanent

DO NOT WRITE IN THIS AREA

*Use the following information to answer Questions 19 and 20.*

Ita is learning to play the cello. She finds her teacher to be a lot of fun; she always starts the lesson with funny stories about cellos and, when teaching, demonstrates her technique, stopping regularly to check that Ita has understood. Ita enjoys her lessons, but her fingers cannot yet move quickly enough to form all of the positions that are needed. Her teacher tells Ita not to worry because, as she grows, she will be able to do more.

**Question 19**

As per observational learning, the teacher being a lot of fun and beginning with a funny story are helpful for Ita's learning in terms of

- A. negative reinforcement.
- B. attention.
- C. reproduction.
- D. pruning.

**Question 20**

Which of the following stages of observational learning is not evident for Ita when her fingers do not yet move sufficiently quickly to form all of the positions that are needed?

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

*Use the following information to answer Questions 21 – 23.*

Dania is learning her lines for the play that she will be performing by carefully reading over them. Then, Dania thinks about times that she has experienced something similar and links the lines of the play to those experiences. After a week, Dania finds that she has effectively learnt the lines and can recite them with ease.

**Question 21**

In relation to the Atkinson-Shiffrin multi-store model of memory, which of the following is correct?

- A. the lines are held in her iconic memory for 0.2 – 0.4 seconds until she pays attention to them
- B. the lines are held in her echoic memory for three to four seconds until she rehearses them
- C. the lines are stored in her short-term memory for 12 – 30 seconds before she pays attention to them
- D. the lines are held in her sensory memory for an infinite amount of time before she pays attention to them

**Question 22**

When Dania thinks about the times that she has experienced something similar and links the lines to those experiences, she is undergoing

- A. maintenance rehearsal.
- B. context specific cues.
- C. memory retrieval.
- D. elaborative rehearsal.

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**Question 23**

When Dania recalls her lines, she is

- A. retrieving them from short-term memory for their use in her sensory memory.
- B. reconstructing her memory of the play in her short-term memory.
- C. simultaneously re-encoding them into her long-term memory.
- D. retrieving them from long-term memory for their use in her short-term memory.

**Question 24**

Aboriginal and Torres Strait Islander peoples' ways of knowing are least likely to view the process of learning as

- A. independent of relationships within the community.
- B. patterned on Country.
- C. occurring through multiple modalities.
- D. being embedded in relationships.

*Use the following information to answer Questions 25 and 26.*

Simon can remember his first day of high school clearly. He remembers his nervousness and the excitement of the day and how he first met his friends in the school canteen at recess. He can also remember the top five countries by population that he learnt in geography class that year.

**Question 25**

Simon's memory of his first day of high school is what type of memory?

- A. explicit emotional memory
- B. implicit semantic memory
- C. implicit long-term memory
- D. explicit episodic memory

**Question 26**

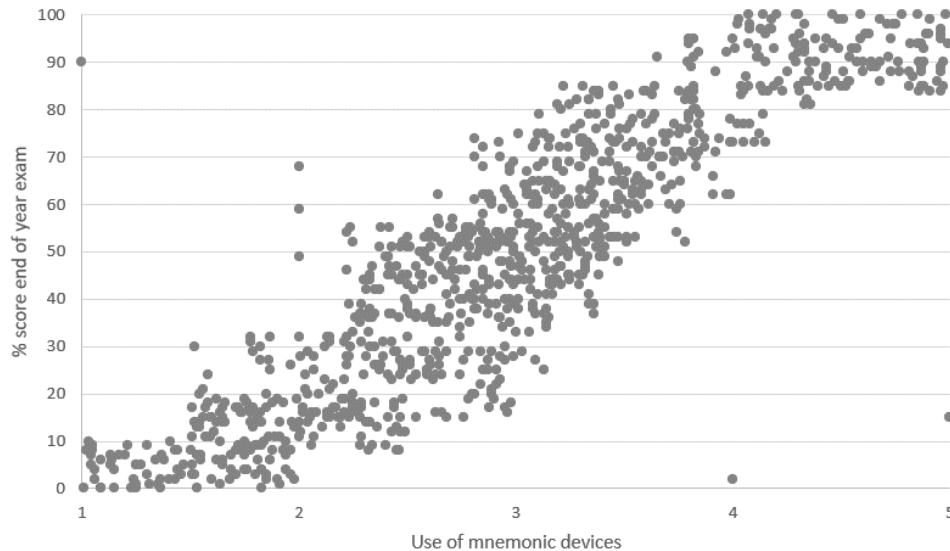
Simon's memory of the top five countries by population is an example of

- A. procedural memory.
- B. semantic memory.
- C. implicit memory.
- D. episodic memory.

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Use the following information to answer Questions 27 – 29.

Atkinson University wishes to investigate the relationship between the use of mnemonic devices and academic success. They ask 1000 first-year uni students how much they make use of a variety of mnemonic devices (using a 10-item scale of 1-5, where 1 indicates that they have 'never used the mnemonic technique' and 5 indicates that they 'always use the mnemonic technique'). This data was then plotted in the below graph against the students' scores for their end-of-year exams.



### Question 27

What type of study is being conducted?

- A. a controlled experiment
- B. a mixed design
- C. a correlational study
- D. modelling

### Question 28

This approach to studying variables allows the researcher to

- A. establish a cause-and-effect relationship between the variables.
- B. describe the degree of a relationship between two variables.
- C. collect rich and detailed data over an extended period.
- D. prove that one variable leads to a certain outcome.

### Question 29

What can be concluded from the graph above?

- A. a weak cause-and-effect relationship between the use of mnemonic devices and the percentage score on the end of year exam.
- B. a strong cause-and-effect relationship between the use of mnemonic devices and the percentage score on the end of year exam.
- C. a negative correlation between the use of mnemonic devices and the percentage score on the end of year exam.
- D. a positive correlation between the use of mnemonic devices and the percentage score on the end of year exam.

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**Question 30**

Sammy has recently started learning the piano. In order to remember the notes, his teacher uses some acrostics. Which of the following could be an acrostic Sammy uses?

- A. Every Good Boy Deserves Fruit
- B. FACE
- C. a jingle created about faces, in order to remember FACE
- D. picturing an E drawn on the floor, picturing a G on the pedals of the piano, picturing a B on the keys of the piano, picturing a D on the music stand, picturing an F on the top of the piano

**Question 31**

A researcher wishes to investigate the relationship between heart rate and stress. They expose participants to a stress test and measure their heart rate by manually taking their pulses (by using a stopwatch and holding fingers over participants' pulses) before and after the stress test. Which of the following correctly identifies examples of repeatability and reproducibility for a subsequent study?

	<b>Repeatability</b>	<b>Reproducibility</b>
A.	similar increases in heart rate found in response to the same stress test	similar increases in heart rate as measured with a heart rate monitor in response to the same stress test
B.	differing changes in heart rate as measured with a heart rate monitor in response to a different stress test	differing changes in heart rate found in response to the same stress test
C.	similar increases in heart rate in response to a novel stressful situation	similar increases in heart rate found in response to the same stress test
D.	similar increases in heart rate as measured with a heart rate monitor in response to the same stress test	similar increases in breathing rate in response to a different stress test

**Question 32**

Brain imaging studies in people with early-stage Alzheimer's disease show a loss of hippocampal volume. During later stages of the illness, the damage spreads to the pre-frontal cortex and other areas of the neocortex. Which of the following correctly shows the likely symptoms for a person suffering with Alzheimer's disease due to damage in the respective areas?

	<b>Hippocampus</b>	<b>Neocortex</b>
A.	not remembering who they are	forgetting how to tie shoelaces
B.	not recognising their childhood friend	forgetting that the water is running
C.	not remembering the new doctor who they met yesterday	forgetting the name of one of their colleagues
D.	forgetting their wedding	forgetting where they live

**Question 33**

Which of the following best describes autobiographical memory?

- A. memory that stores knowledge of how to complete tasks
- B. memory that stores emotional responses to stimuli
- C. memory that stores knowledge of personally experienced events
- D. memory that enables performance of a series of movements

**Question 34**

Which of the following statements about autobiographical memory is false?

- A. it includes episodic components
- B. the nature of this type of memory can change over the lifespan
- C. all individuals show a similar capacity for autobiographical memory
- D. it involves the hippocampus

**Question 35**

Which of the following is correct in distinguishing between the investigation methodologies of classification and identification?

- A. classification is the process of recognising items as belonging to particular sets, whereas identification is the grouping of items into manageable sets
- B. classification utilises a within subjects design, whereas identification utilises a between subjects design
- C. classification involves the construction of a process, whereas identification involves the design of a model
- D. classification is the grouping of items into manageable sets, whereas identification is the process of recognising items as belonging to particular sets

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**SECTION B**

**Instructions for Section B**

Answer **all** questions in the spaces provided.

**Question 1** (11 marks)

Evie is in Year 10 and food technology is her favourite subject. She is one of the most competent students in the class and really enjoys cooking as well as creating new recipes. This wasn't always the case though; when she first started the classes, she couldn't chop an apple, but she can now chop like an expert.

Evie can remember her first lesson in Year 7 when she burnt her fingers on the boiling water while they were cooking pasta. The water splashed onto her hand and, before she knew what had happened, she had dropped the saucepan into the sink and the pasta went everywhere. She remembers that day so clearly as she felt very embarrassed.

- a. Name and describe the nervous system response involved when Evie dropped the saucepan. 4 marks

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- b. With reference to the type of responses involved, explain why Evie dropped the saucepan 'before she knew what had happened.' 2 marks

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**c.** Describe how long-term potentiation is involved in Evie learning how to chop food expertly. 3 marks

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**d.** With reference to two brain areas that are involved, explain why Evie remembers the first food technology lesson so well. 2 marks

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**Question 2** (8 marks)

Greta and Imi enjoy attending yoga classes together. They have been going for months, but, more recently, Imi has started making excuses so as not to attend. When Greta asks Imi about this, she admits that she hasn't enjoyed the classes since the instructor started beginning and ending the classes with visualisation exercises. She says these types of exercises are incredibly frustrating as she is unable to visualise anything in her mind, even though she tries.

- a. Name the condition that Imi is describing. 1 mark

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- b. Identify and explain the type of coping strategy that Imi is using. 2 marks

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- c. How could Imi demonstrate coping flexibility in dealing with the problem involving the yoga class? 3 marks

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- d. List two key brain areas that are involved in the implicit memory of the yoga movements. 2 marks

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**Question 3** (10 marks)

Skinner University is conducting research on the role of reinforcement in the speed of learning responses. They asked 100 university students to participate as part of their coursework who were then randomly allocated to one of two groups:

- Group A receives reinforcement in the form of a shopping voucher each time that they improved their time performing the task.
- Group B does not receive any reinforcement.

In both groups, participants are asked to type a 200-word excerpt of a university textbook using an old typewriter machine. Any participants with experience in using a typewriter are excluded from the study. Each participant completes the task four times, with the time that they take to complete the task recorded for each attempt. Below is a table of the mean results from each group.

	Trial 1	Trial 2	Trial 3	Trial 4
Group A	5.2 minutes	4.4 minutes	3.8 minutes	1.9 minutes
Group B	5.1 minutes	4.8 minutes	4.7 minutes	4.8 minutes

- a. Using the three-phase model of operant conditioning, outline the process of learning for Group A. 4 marks

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- b. Provide three reasons why this research can be considered a controlled experiment. 3 marks

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- c. Identify the experimental design that has been used in this study, and justify your answer. 3 marks

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**Question 4** (6 marks)

- a.** Caitlin is revising the multi-store model of memory. She plans to use the method of loci to memorise the three stores alongside their duration and capacity. 3 marks

With the use of an example, describe how Caitlin can use the method of loci to help her remember the multi-store model of memory.

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- b.** Outline three differences between the method of loci and Aboriginal peoples' use of songlines. 3 marks

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**Question 5 (10 marks)**

Happy Children Childcare Centre is partnering with a local university to conduct research on the impact of stress on their educators. They are particularly concerned about the increased amount of sick leave that their educators have needed over the past 12 months. They believe that the amount of stress that the workers have been experiencing is contributing to how often they fall sick. One of the factors that the centre's management believes to be contributing to the level of stress is the shortage of educators to cover shifts, which contributes to educators not taking sufficient meal breaks and time off.

The university interviews the educators and find some consistent concerns about how their work increases their stress levels. The following is a list of some of these factors:

- Shortening meal breaks to cover when other educators are unwell and, therefore, not eating proper meals.
- Not taking the usual amount of time off to recover when they have been unwell.
- Postponing their holiday leave as they understand the impacts it would have on their colleagues.

Analyse the type of stressors that are present and how these may be impacting staff health and wellbeing.

With reference to a biological model of stress, explain the relationship between stress and illness and suggest how this may be affecting the educators.

With reference to the gut-brain axis, describe a possible relationship between educators not eating proper meals and the stress that they are experiencing.

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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
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D

13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
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20	A	B	C	D
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24	A	B	C	D

25	A	B	C	D
26	A	B	C	D
27	A	B	C	D
28	A	B	C	D
29	A	B	C	D
30	A	B	C	D
31	A	B	C	D
32	A	B	C	D
33	A	B	C	D
34	A	B	C	D
35	A	B	C	D