**Student Name:** _____



# 2017

# PSYCHOLOGY

# WRITTEN EXAMINATION

**Reading time: 15 minutes**

**Writing time: 105 minutes**

# QUESTION AND ANSWER BOOK

**Structure of book**

| Section | Number of questions | Number of questions To be answered | Number of marks |
|---------|---------------------|------------------------------------|-----------------|
| **A** | **40** | **40** | **40** |
| **B** | **18** | **18** | **50** |
| | | | **Total 90** |

- Students are permitted to bring the following items into the examination: pens, pencils, erasers, sharpeners and rulers
- Students are <u>not</u> permitted to bring into the exam: electronic devices such as phones or calculators or liquid paper (or similar) or any paper(s)

**Materials provided**
- Question & answer book of 16 pages & an answer sheet for multiple-choice questions (page 17).

**Instructions**
- Write your name in the space provided on both the question book and multiple-choice response sheet

## SECTION A – Multiple-choice questions

| **Instructions for Section A** |
| --- |
| • Answer all questions in pencil on the answer sheet provided for multiple-choice questions<br>• Choose the response that is correct or that best answers the question.<br>• No marks will be given if more than one answer is completed for any question |

**Question 1**
Exercise is an effective strategy for coping with stress because it
**A.** activates the parasympathetic nervous system.
**B.** increases cortisol levels.
**C.** releases beta endorphins.
**D.** helps individuals focus on their stressors.

*Use the following information to answer questions 2 and 3*

**Question 2**
Parkinson's Disease is caused by an imbalance of neurotransmitters, specifically
**A.** excessive dopamine levels.
**B.** excessive adrenalin levels.
**C.** a lack of glutamate.
**D.** a lack of GABA.

**Question 3**
Which of the following brain structures is responsible for the production of the
neurotransmitters identified in question 2?
**A.** substantia nigra
**B.** cerebral cortex
**C.** striatum
**D.** thalamus

**Question 4**
Sensory information is detected in
**A.** both the central and peripheral nervous systems.
**B.** the central nervous system.
**C.** the peripheral nervous system.
**D.** the autonomic nervous system.

**Question 5**
Relearning is the most sensitive method of retrieval because of the/ it
**A.** presence of cues.
**B.** lack of cues.
**C.** use of the savings score formula.
**D.** enables participants to the select answers from alternatives.

**Question 6**

Eustress is a positive _____response that will activate the _____ nervous system.

**A.** psychological; sympathetic
**B.** physiological; sympathetic
**C.** psychological; parasympathetic
**D.** physiological; parasympathetic

**Question 7**

Whilst running, Drew was attacked and bitten on the calf by a savage dog. During the attack Drew tried to fend off the dog and eventually was able to climb up a tree and call for help. During the attack, Drew's digestion would have been_____ by the _____ nervous system

**A.** active; sympathetic
**B.** suppressed; sympathetic
**C.** active; parasympathetic
**D.** suppressed; parasympathetic

**Question 8**

The release of cortisol into the bloodstream when we encounter stress

**A.** will immediately trigger a decline in our health.
**B.** will assist the person deal with a stressor, but can reduce the effectiveness of the immune system if the hormones linger.
**C.** will hinder the person's ability to deal with stressors.
**D.** will help the person deal with a stressor with no lasting effects.

*Use the following information to answer questions 9 and 10*

On weekday mornings, Andrew gets out of bed first whilst his wife Trish watches 'Sunrise'. Andrew starts the day by grinding coffee beans and then he makes two coffees. After repeating this ritual several times, the mere sound of the coffee grinding causes Trish to salivate in anticipation of a strong coffee.

**Question 9**

The sound of the coffee grinder in this case this is a

**A.** unconditioned stimulus.
**B.** conditioned stimulus.
**C.** conditioned response.
**D.** unconditioned response.

**Question 10**

Trisha's salivation response to the sound of the coffee grinder is triggered by her _____ nervous system

**A.** sympathetic
**B.** parasympathetic
**C.** somatic
**D.** central

**Question 11**

Alzheimer's disease

**A.** has no effect on procedural memory.

**B.** generally affects procedural memory prior to affecting declarative memory.

**C.** progresses gradually and can eventually affect procedural memory.

**D.** has an immediate effect on procedural memory when first diagnosed.

*Use the following information to answer questions 12 and 13*

In terms of the functions of structural components of the neuron: the axon and myelin

**Question 12**

Myelin does all of the following EXCEPT

**A.** covers axons.

**B.** enhances the transmission of electrical impulses.

**C.** protects the axon.

**D.** receives messages from other neurons.

**Question 13**

Axons

**A.** are electrochemical messages.

**B.** receive messages from other neurons.

**C.** conduct electrochemical messages.

**D.** contain a cell's genetic code.

*Use the following information to answer questions 14 and 15*

Zoe has just received a phone call from her daughter's school informing her that she has been expelled for bullying. Zoe initially finds this news distressing.

In terms of the Lazarus and Folkman Transactional Model of Stress and Coping,

**Question 14**

Which of the following is the most likely Zoe's primary appraisal?

**A.** the news is benign-positive

**B.** the news is significant

**C.** an evaluation of her coping options

**D.** Zoe is in denial about the news

**Question 15**

Which of the following would best describe Zoe's likely secondary appraisal?

**A.** the news is benign-positive

**B.** the news is significant

**C.** an evaluation of her coping options

**D.** Zoe is in denial about the news

**Question 16**

The neurohormone adrenalin plays a key role in which of the following types of memories?

**A.** sensory

**B.** procedural

**C.** semantic

**D.** episodic

**Question 17**
Which of the following types of long-term memories is an example of an implicit memory?
**A.** declarative
**B.** procedural
**C.** semantic
**D.** episodic

**Question 18**
The hippocampus is largely responsible for the consolidation of _____ memory.
**A.** implicit
**B.** semantic
**C.** procedural
**D.** sensory

**Question 19**
According to the Atkinson-Shiffrin multi-store model of memory, information is stored in its raw form whilst it is in which of the following memory stores?
**A.** sensory memory
**B.** STM
**C.** LTM
**D.** all three memory stores

**Question 20**
Which of the following memory stores has the lowest capacity?
**A.** iconic
**B.** echoic
**C.** STM
**D.** LTM

*Use the following information to answer questions 21 to 23*
Earlier in the year, Kevin was fined for driving 60kmh. in a 40kmh. school zone. For the rest of the school year Kevin would always slow down when going through school zones during the designated times. However after the summer school holidays, Kevin sped through the school zones during the designated time.

**Question 21**
According to the three-phase model of operant condition - prior to the school holidays, Kevin slowing down when going through school zones during school times was an example of the
**A.** antecedent.
**B.** behaviour.
**C.** consequence.
**D.** conditioned response.

**Question 22**
Kevin's fine for speeding through the 40kmh. school zone is an example of
**A.** positive punishment.
**B.** response cost.
**C.** negative reinforcement.
**D.** shaping.

**Question 23**
After the holidays, Kevin's speeding behaviour through school zones is an example of
**A.** stimulus generalisation.
**B.** stimulus discrimination.
**C.** shaping.
**D.** spontaneous recovery.

*Use the following information to answer questions 24 to 28*
A group of VCE Psychology students from Xander Secondary College were required to participate in a serial position effect investigation for their ERA SAC.
The teacher read a list of 15 nouns in 2 second intervals. After the 15th noun the teacher instructed students to write down as many African countries they could think of in one minute.
At the end of the minute the students were instructed to recall the 15 nouns in serial order. The percentage recall of the class was determined for each of the 15 nouns based on the order they were presented to determine if there was a primary effect and or a recency effect.

**Question 24**
This investigation is an example of
**A.** a case study.
**B.** an observational study.
**C.** an experiment.
**D.** a correlational study.

**Question 25**
The operationalised DV in this case was
**A.** memory recall.
**B.** the number of words recalled.
**C.** the percentage recall of each of the 15 ordered words.
**D.** the order that the words were presented.

**Question 26**
The data collected in this case is
**A.** qualitative.
**B.** quantitative.
**C.** both quantitative and qualitative.
**D.** neither qualitative nor quantitative.

**Question 27**
In this investigation it would be expected that the results would indicate
**A.** both a primacy and a recency effect.
**B.** just a recency effect.
**C.** just a primacy effect.
**D.** an equally high recall for all 15 words.

**Question 28**
The possible presence of a primacy effect in this case, could <u>best</u> be explained by
**A.** the consolidation theory.
**B.** an elimination of interference.
**C.** context-dependent cues.
**D.** the additional rehearsal of the initial words presented.

**Question 29**
Vanessa's hand inadvertently came in contact with the flame of a candle which triggered a spinal reflex. The information about the heat from the candle flame on her hand would have been initially processed in which of the following components of the nervous system?
**A.** spinal cord
**B.** brain
**C.** somatic nervous system
**D.** autonomic nervous system

**Question 30**
In terms of the 'lock and key' process involved in the transmission of neural information. The 'key' is which of the following?
**A.** dendrites
**B.** soma
**C.** axon terminals
**D.** neurotransmitters

*Use the following information to answer questions 31 to 34*
Xavian is a VCE student has just learned that she has been expelled from school for a committing a criminal offence on campus. In terms of Seyle's research and development of the general adaptation syndrome.

**Question 31**
When Xavian's body adapted to the stressor, by activating the parasympathetic nervous system which reduced her heart rate and other biological processes she had reached which of the following stages?
**A.** alarm-countershock
**B.** alarm-shock
**C.** exhaustion
**D.** resistance

**Question 32**
Xavian initially experienced a 'freeze' like response which is indicative of which of the following stages?
**A.** alarm-countershock
**B.** alarm-shock
**C.** exhaustion
**D.** resistance

**Question 33**
Adrenaline would have been first released into Xavian's bloodstream (to help her body respond to the stressor) when her body had reached which of the following stages?
**A.** alarm-countershock
**B.** alarm-shock
**C.** exhaustion
**D.** resistance

**Question 34**

If the stress of the expulsion had not been resolved over an extended period of time, Xavian's body may have shown some early signs of illness as result of the effects of her sustained response to the stressor during which of the following stages?

**A.** alarm-countershock

**B.** alarm-shock

**C.** exhaustion

**D.** resistance

**Question 35**

The GAS can be best described as a _____ model for dealing with stress.

**A.** biological

**B.** cognitive

**C.** psychological

**D.** biopsychosocial

**Question 36**

In neural terms: Long term depression can best be described by which of the following statements?

**A.** the lock and key process involved in memory formation

**B.** the increased tendency of a group of neurons firing together after the stimulation of a neural pathway

**C.** the weakening of synaptic pathways

**D.** the inhibitory effect of a neurotransmitter

**Question 37**

Which of the following learning theories puts the most emphasis on cognition in the learning process?

**A.** classical conditioning

**B.** observational learning

**C.** operant conditioning

**D.** all three theories put equal emphasis on cognition

*Use the following information to answer questions 38 to 40*

In order to test out the principles of classical conditioning that Emma has learned in class, she has decided to condition her little brother to flinch when she turns out his bedroom light. Over the period of one week, at night time Emma occasionally sneaks into her brother's bedroom when he has his back turned to the door and proceeds to turn out his light and then follow this with a loud blow of her tuba which causes him to flinch in an alarmed state. She repeats this process several times and then at the end of the week tests the conditioning by simply turning out the lights and his brother then flinches in anticipation of the loud tube sound.

**Question 38**

The neutral stimulus in this case is the

**A.** flinching in response to the tuba.

**B.** flinching in anticipation of the tuba.

**C.** act of blowing a loud note on the tuba.

**D.** act of turning the lights out in his bedroom.

**Question 39**
The unconditioned stimulus in this case is the
**A.** flinching in response to the tuba.
**B.** flinching in anticipation of the tuba.
**C.** act of blowing a loud note on the tuba.
**D.** act of turning the lights out in his bedroom.

**Question 40**
The conditioned response in this case is the
**A.** flinching in response to the tuba
**B.** flinching in anticipation of the tuba
**C.** act of blowing a loud note on the tuba
**D.** act of turning the lights out in his bedroom

# SECTION B – Short-answer questions

| **Instructions for Section B** |
| --- |
| Answer all questions in the spaces provided. Write using black or blue pen |

**Question 1 (3 marks)**
Jack and Jill's grandfather is planning to go back to New Zealand for his 60 year school
reunion. Jack asks grandpa to name his First 15 Rugby team mates (none of whom he has
seen since he left school). Jill finds a photo with all the students from the school and she asks
Grandpa to pick out his team mates from the first 15 Rugby team.
In terms of the methods of retrieval, explain whether Grandpa would be able to name more
players or identify more players from the photo.

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**Question 2 (2 marks)**
Describe how taking a Panadol can be a form of negative reinforcement.

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**Question 3 (4 marks)**
Hannah is demonstrating to her daughter Tara how to change a tyre on a car. When Tara attempts to change the tyre, she is unable to do it.
Referring to each of the first 4 stages of Observational Learning, explain why Tara may have failed to change the tyre.

1$^{st}$ stage:

_____

_____

2$^{nd}$ stage:

_____

_____

3$^{rd}$ stage:

_____

_____

4$^{th}$ stage:

_____

_____

**Question 4 (2 marks)**
Explain how the ethical principle of informed consent could have been complied within the Watson & Rayner Little Albert experiment.

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**Question 5 (2 marks)**
Describe two benefits of using a double blind procedure for psychological research.

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**Question 6 (3 marks)**
Describe the role of the autonomic nervous system in activating and terminating the fight-flight-freeze response. Update solution to include the f-f-freeze response.

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**Question 7 (2 marks)**
Explain the fundamental principles behind the Lazarus and Folkman Transactional Model of Stress and Coping including why individuals interpret stressors in different ways.

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**Question 8 (2 marks)**
Explain the role of LTP (Long Term Potentiation) in memory.

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**Question 9 (3 marks)**
Explain how leading questions can lead to false memory in eyewitness testimony according the reconstructive nature of memory theory reported by Loftus.

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**Question 10 (2 marks)**
Using an example, explain how a neurotransmitter can have an excitatory effect

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**Question 11 (4 marks)**
With the aid of examples, provide one difference and one similarity between a conscious response to sensory stimuli and a spinal reflex

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**Question 12 (2 marks)**
With the aid of an example, describe how a life event can be a source of stress

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**Question 13 (2 marks)**
Describe how the interference to the nervous system can result in Parkinson's Disease.

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**Question 14 (2 marks)**
Describe the role of both the synapse and neurotransmitters in signal transmission and reception

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**Question 15 (2 marks)**
What role does glutamate play in memory and learning

_____

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_____

**Question 16 (2 marks)**
Charlotte recently had brain surgery, describe the potential impact of brain surgery on her memory

_____

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_____

**Question 17 (1 mark)**
What is meant by an approach strategy for dealing with stress

_____

_____

**Question 18 (10 marks)**
- Dr.Tee aimed to investigate the effectiveness of a drug 'receptor enhancer' that is claimed to enhance learning by targeting NMDA receptors on post synaptic neurons involved in learning, which will affect the uptake of glutamate.
- 30 Psychology undergraduate students from Island University volunteered to participate in the study, each student was randomly allocated to one of two groups.
- Each group of students was exposed to a series of 3 dimensional (3D) virtual mazes which required the students to navigate their way through the maze via a mouse pad on a mac computer. The participants completed the maze once and then again a week later to determine if they had developed a cognitive map of the layout of the 3D maze between trials.

- Half of the subjects were given the 'receptor enhancer' drug just prior to the commencement of the initial trial in order to enhance the learning, the other half were given a placebo.
- The performance of the students was determined by the time taken to complete the maze on each of the 2 occasions, with a comparison made of the improvement made by the 2 groups. See below.
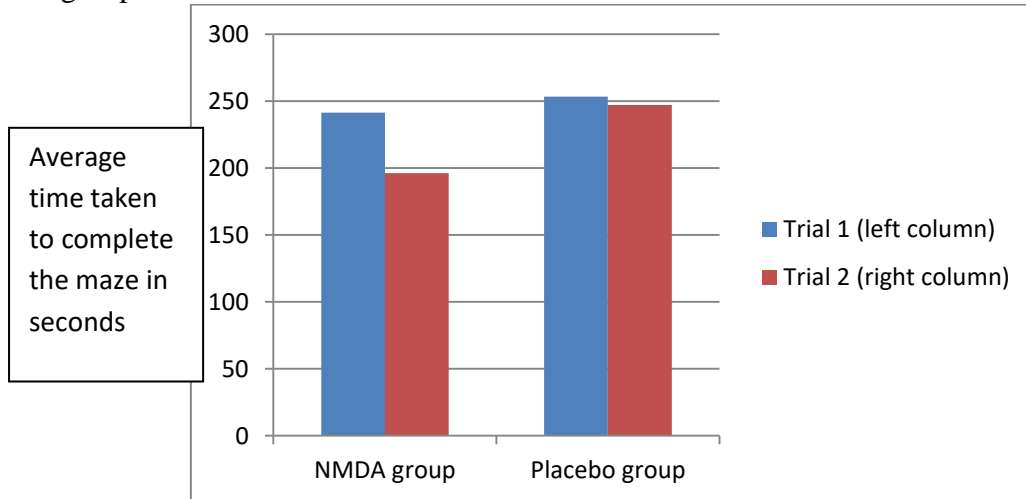


Based on the results obtained, Dr Tee concluded that the 'receptor enhancers enhance learning of the sample of the students tested

**Required**
**Write a partial report including the following**
- An explanation of the role that Glutamate and NMDA plays in learning
- A Research hypothesis
- A conclusion based on the hypothesis
- The implications of the findings
- An evaluation of the research design

*Extra space for responses: Clearly number all responses in this space*

**Student Name:** _____



**MULTIPLE-CHOICE – Response sheet**

**Please record one response per question in the space provided (to the right of question)**

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