

Student Name: _____



2017

UNITS 3 & 4 PSYCHOLOGY

WRITTEN EXAMINATION

Reading time: 15 minutes

Writing time: 120 minutes

QUESTION AND ANSWER BOOK

Structure of book

<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	19	19	70
			Total 120

- Students are permitted to bring the following items into the examination: pens, pencils, erasers, sharpeners and rulers
- Students are not 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 and answer booklet of 26 pages & an answer sheet for multiple-choice questions

Instructions

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

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SECTION A: Multiple-choice questions**Question 1**

Which of the following brain structures is responsible for forming the memory of motor skills such as the ability to shoot a layup in a basketball game?

- A. amygdala
- B. cerebellum
- C. hippocampus
- D. hypothalamus

Question 2

Which part of the neuron stores neurotransmitters such as GABA?

- A. dendrites
- B. soma
- C. axon terminals
- D. myelin sheath

Question 3

Kevin is using sandpaper to smooth the weatherboards on the side of his house, before painting them he checks the texture of the wood with his hand. Which division of the nervous system is responsible for the initial detection of the texture of the wood?

- A. autonomic
- B. central
- C. somatic
- D. sympathetic

Question 4

Anterograde amnesia will have the least effect on a victim's ability to form which of the following types of memories?

- A. explicit
- B. semantic
- C. episodic
- D. procedural

Question 5

Which of the following sleep disorders is an example of a type of dyssomnia?

- A. insomnia
- B. sleep-walking
- C. delayed sleep-phase onset
- D. parasomnia

Use the following information to answer questions 6 to 9

Pete was charged with domestic assault last year. He has admitted that he has a mental disorder and blames this on poor sleep and his drug dependency (substance abuse). Lately he has become increasingly socially isolated and has been unable to hold a steady job for more than three months over the last couple of years. He wants to change his behaviour but is not sure how to start this process.

Question 6

In this case, Pete's substance abuse is a _____ risk factor that may contribute to the development and progression of a mental disorder

- A. protective
- B. perpetuating
- C. predisposing
- D. precipitating

Question 7

In terms of the transtheoretical model of behavioural change, Pete is currently experiencing which of the following stages?

- A. termination
- B. preparation
- C. contemplation
- D. pre-contemplation

Question 8

Pete, with the help of some social support, has made plans to change his behaviour and has started taking small steps towards this process. In terms of the transtheoretical model of behavioural change, Pete has reached which of the following stages?

- A. termination
- B. preparation
- C. contemplation
- D. pre-contemplation

Question 9

Which of the following contributing factors would be classified as a psychological risk factor that may have contributed to Pete's mental condition?

- A. stress
- B. poor sleep
- C. disorganised attachment
- D. substance abuse

Use the following information to answer questions 10 to 12

Uncle Harry has recently been diagnosed with Alzheimer's disease.

Question 10

Alzheimer's disease typically starts in which of the following brain structures?

- A. amygdala
- B. cerebellum
- C. hippocampus
- D. hypothalamus

Question 11

An early symptom of Alzheimer's disease is

- A. a lack of control over facial expressions
- B. the inability to recall implicit memories
- C. anterograde amnesia
- D. tremor

Question 12

Victims of Alzheimer's disease are most likely to experience low levels of which of the following neurotransmitters that explains their impaired memory?

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

Question 13

Which division of the nervous system is responsible for triggering changes in unconscious functions such as heart rate or pupil size?

- A. somatic
- B. autonomic
- C. central
- D. spinal cord

Question 14

Which of the following is an example of an induced altered state of consciousness?

- A. daydreaming
- B. sleep
- C. meditation
- D. relaxing

Question 15

When under the influence of a stimulant, an EEG would typically report which of the following types of brain waves?

- A. alpha
- B. beta
- C. delta
- D. theta

Question 16

The effects of a legal blood-alcohol content are most likely to increase or enhance which of the following?

- A. brain wave frequency
- B. cognition
- C. mood
- D. concentration

Question 17

Emma completed the 'Round the Bay' cycling event as part of charity fundraising initiative for her school. This required her to ride a bicycle for more than ten hours in one day around Port Phillip Bay which she found exhausting.

In terms of the restorative theory of sleep that night Emma would be expected to have significantly more _____ sleep to assist with her physical recovery.

- A. REM sleep
- B. NREM stage 1
- C. NREM stage 2
- D. NREM stage 3

Question 18

In terms of changes in sleep patterns across the lifespan, which of the following age groups would typically spend the most amount of time in deep sleep?

- A. children
- B. adolescents
- C. adults
- D. elderly people

Use the following information to answer questions 19 to 22

Xander and his family lives in regional Victoria. As a result of torrential rain, he was woken early one morning by one of his children and informed that 'downstairs is flooded'. Xander was initially in shock, but after inspecting the damage, he realised that the house was not safe and he needed to evacuate the family to a town emergency centre. After several hours, Xander was informed that all of the residents in his street were not to return to their house and they would have to live temporarily in the high school gym until further notice.

According to Selye's GAS (General Adaptation Syndrome).

Question 19

Xander's body temperature would have temporarily fallen below its normal level as he was experiencing which of the following stages of the GAS?

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

Question 20

Xander's resistance to the stressor will first rise above his normal level of resistance when he reaches which of the following stages of the GAS?

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

Question 21

Xander's parasympathetic nervous system will be activated as his body attempts to adapt to the stressor during which of the following stages?

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

Question 22

A strength of the GAS model is that

- A. the experiments were carried out using humans in the development of the model.
- B. the model caters for individual differences in terms of the variations in the manner in which humans respond to stress.
- C. the model highlights the relationship between prolonged stress and impairments in health.
- D. it focusses on the psychological processes involved in the appraisal of a stressor.

Question 23

Which of the following memory stores has the lowest capacity?

- A. sensory
- B. short-term
- C. long-term
- D. all of the above (have the same capacity)

Question 24

Which of the following is an example of a neurohormone (that can be released into the bloodstream or the brain)?

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

Question 25

Bright light therapy would be a treatment best used to overcome the effects of which of the following conditions?

- A. nightmares
- B. sleep-walking
- C. circadian phase disorders
- D. hypnagogia

Question 26

A disorganised attachment is categorised as a _____ contributing factor to the development of a mental disorder.

- A. social
- B. psychological
- C. biological
- D. cumulative

Question 27

Xavian was 5 years old when she went shopping with her dad. When they walked past an ice cream shop she asked for an ice-cream. Her dad said 'no', and Xavian then threw a loud tantrum in the middle of the shopping centre. Her father pleaded with Xavian to stop her tantrum as she continued to scream and yell. Eventually he said 'OK, I will buy you an ice cream' and Xavian's tantrum stopped almost immediately. In this case the father's action of buying the ice-cream has been (from his point of view)

- A. positively punished
- B. negatively punished
- C. positively reinforced
- D. negatively reinforced

Question 28

An EEG that is used to record consciousness will record high frequency brain waves

- A. only during a normal waking consciousness.
- B. only when experiencing an altered state of consciousness.
- C. either during a normal consciousness or an altered state of consciousness.
- D. only when a person experiences a state of focussed attention.

Question 29

Which of the following is an example of a cognitive (as opposed to behavioural or affective) symptom of sleep deprivation?

- A. irritability
- B. a loss of self-control
- C. a higher likelihood of risk taking behaviour
- D. difficulty concentrating

Use the following information to answer questions 30 to 34

When Zach was a young child a bird flew through an open window into his house and he flew around the room trying to find a way out and Zach believed that the bird was attacking him. As a result of this unresolved conflict he has a phobia of feathers that prevents him from going outside due to the threat of exposure to birds and feathers.

Question 30

Which part of Zach's brain was responsible for processing his fear response to the flying bird in his house?

- A. amygdala
- B. hippocampus
- C. hypothalamus
- D. cerebellum

Question 31

Operant conditioning would have most likely been a _____ factor that would have contributed to the development or progression of Zach's specific phobia of feathers.

- A. protective
- B. perpetuating
- C. predisposing
- D. precipitating

Question 32

Which of the following was the unconditioned stimulus in Zach's case?

- A. the sight of a feather
- B. being attacked by the bird when he was a child
- C. his terror whilst being attacked by the bird
- D. a fear response when seeing a feather or a bird

Question 33

Which of the following was the conditioned stimulus in Zach's case?

- A. the sight of a feather
- B. being attacked by the bird when he was a child
- C. his terror whilst being attacked by the bird
- D. a fear response when seeing a feather or a bird

Question 34

Benzodiazepines can be used to treat Zach's condition. They have an

_____ affect by _____ the effects of GABA on the post synaptic neuron.

- A. agonistic; blocking
- B. antagonistic; blocking
- C. agonistic; mimicking
- D. antagonistic; mimicking

Question 35

Maintenance rehearsal is most likely to increase which of the following?

- A. the capacity of STM
- B. the duration of STM
- C. the capacity of LTM
- D. the duration of LTM

Question 36

Bright light therapy is a treatment best used for which of the following sleep disorders?

- A. delayed sleep-wake phase disorder during adolescence
- B. insomnia
- C. sleep walking
- D. nightmares

Question 37

In order for an ethics committee to grant approval to a researcher to use placebos in testing the effectiveness of medication on the treatment of a mental disorders, the researcher will need to adhere to all of the following EXCEPT -

- A. informing the participants of the nature of the study.
- B. informing the participants as to whether they are in the control or experimental group during the experiment.
- C. ensuring debriefing procedures are in place at the conclusion of the experiment.
- D. informing the participants of their rights prior to the commencement of the experiment.

Use the following information to answer questions 38 and 39

In terms of evidence of the neural basis of learning

Question 38

Long-term depression is a result of a

- A. weak low-frequency stimulation of the presynaptic axon-terminal
- B. strong high-frequency stimulation of the presynaptic axon terminal
- C. weak low-frequency stimulation of the postsynaptic axon-terminal
- D. strong high-frequency stimulation of the postsynaptic axon terminal

Question 39

A highly emotional event will trigger the release of _____ which will strengthen the consolidation of the memory.

- A. a high amount of GABA
- B. a high amount of adrenaline
- C. a low amount of dopamine
- D. a low amount of acetylcholine

Use the following information to answer questions 40 and 41

Scott teaches French at a regional secondary school. Towards the end of the school year he was unexpectedly informed that his contract would not be renewed at the end of the year due to declining student numbers in language subjects at the school.

Scott was devastated by this news as he enjoyed working at the school.

Question 40

Which of the sources of stress best explains Scott's response to the termination of his work contract?

- A. eustress
- B. acculturative stress
- C. a life event
- D. daily pressures

Question 41

According to the Lazarus and Folkman Transactional model of stress and coping, which of the following provides the best example of a primary appraisal by Scott?

- A. determining a coping option for dealing with his bad news
- B. an evaluation of the significance of his contract termination
- C. checking the internet for alternative teaching jobs for the following academic year
- D. planning on going out with friends to help him calm down

Question 42

The Lazarus and Folkman Transactional model of stress and coping, can best be described as a _____ model

- A. biological
- B. psychological
- C. social
- D. biopsychosocial

Question 43

According to the mental health continuum, which of the following statements best describes the characteristics of a person with mental health problems (as opposed to a mentally healthy person or one with a mental illness)?

- A. a person that experiences occasional stress, but suffers no impairment in their daily functioning.
- B. a person that experiences mild to moderate stress as well as temporary impairment in their daily functioning.
- C. a person that experiences mild to moderate stress as well as a chronic level of disabling impairment in their daily functioning.
- D. a person that experiences severe stress as well as a chronic level of disabling impairment in their daily functioning.

Question 44

The sleep-wake cycle is mainly regulated by

- A. biological factors.
- B. environmental factors.
- C. dopamine levels.
- D. glutamate levels.

Question 45

In contrast to a normal waking consciousness, a person that is dreaming during REM sleep will

- A. experience no change in their content limitations.
- B. have an increase in content limitations.
- C. experience reduced content limitations.
- D. experience no content in their dreams.

Use the following information to answer questions 46 to 49

- Professor Dann from SHU (Surrey Hills University) wanted to investigate the use of breathing retraining in the treatment of a phobia.
- Professor Dann contacted ten mental health clinics in the south eastern suburbs of Melbourne and asked for access to patients who had been diagnosed with specific phobia to participate in the study.
- 34 people (29 male, 5 female) aged from 24 to 55 agreed to participate.
- Each participant was interviewed and tested to determine the severity of their phobic condition.
- A score of 100 was determined based on a combination of their physiological, psychological and behavioural responses to the presence of their phobic stimulus.
- The participants were then required to attend ten weekly clinical sessions which concentrated on breathing retraining.
- Each participant was instructed to practice their breathing retraining at home on a daily basis following an online simulation in between each of the weekly sessions.

At the end of the ten week program, the participants were once again tested and scored out of 100 in the same manner as they were prior to the commencement of the program.

The results can be summarised as follows.

Average pre-test score out of 100 for extent of the patient's phobia	Average post-test score out of 100 for extent of the patient's phobia	Average change in the extent of the patients' phobia (score out of 100)
66.2	44.3	-19.1

Question 46

This research investigation used which of the following research designs & sampling methods respectively

- A. independent-groups; convenience
- B. independent-groups; random
- C. repeated-measures; convenience
- D. repeated-measures; random

Question 47

The independent variable in this case is which of the following?

- A. whether the patient's phobia had been successfully treated or not.
- B. whether the participant's phobia was being treated or not.
- C. the use of breathing retraining for treating a specific phobia.
- D. the change in the extent of the participant's phobic response after a 10 week breathing retraining program (change in score out of 100).

Question 48

The operationalised dependent variable in this case is which of the following?

- A. whether the patient's phobia had been successfully treated or not.
- B. whether the participant's phobia was being treated or not.
- C. the use of breathing retraining for treating a specific phobia.
- D. the change in the extent of the participant's phobic response after a 10 week breathing retraining program (change in score out of 100).

Question 49

The research investigation used in this case was a/an

- A. case study
- B. naturalistic observation
- C. self-report
- D. experiment

Question 50

A person who experiences a high level of anxiety in response to their phobic stimulus tends to _____. Breathing retraining is used to help the patient _____ their breathing to a more adaptive level and thus lower their anxiety.

- A. underbreathe; slow
- B. underbreathe; speed up
- C. overbreathe; slow
- D. overbreathe speed up

SECTION B – short-answer questions**Question 1 (2 marks)**

Describe the role of dopamine in Parkinson's disease.

Question 2 (4 marks)

Describe two differences between social learning theory and operant conditioning.

Question 3 (4 marks)

In terms of the role of resilience in the maintenance of mental health

a. Define resilience (in terms of mental health)

1 mark

b. Identify a biological, psychological and social protective factor

Biological

Psychological

Social

3 marks

Question 4 (5 marks)

In terms of the evolutionary (circadian) theory of sleep.

a. Explain the purpose of sleep according to the evolutionary theory.

2 marks

b. Identify two forms of evidence of the theory.

2 marks

c. Identify one limitation.

1 mark

Question 5 (3 marks)

Trish has been experiencing work related stress and could use either an approach or avoidance strategy to manage her stress

a. Describe a benefit of using an avoidance strategy.

1 mark

b. Describe a limitation of using an avoidance strategy.

1 mark

c. Describe how Trish could use an approach strategy for dealing with her stress.

1 mark

Question 6 (2 marks)

Describe how cumulative risk can affect an adolescent's mental health.

Question 7 (4 marks)

Using examples, distinguish between neurotransmitters that have an inhibitory effect versus an excitatory effect.

Question 8 (3 marks)

On a hot day, Vanessa leaned her arm against a hot metal pole; she reflexively moved her arm away from the pole.

Explain the role of the central and peripheral nervous system in her spinal reflex.

Question 9 (3 marks)

Helena was the sole witness to an assault of an elderly person on public transport. She was asked a series of questions about the assault by the police.

What influence could a leading question have on the accuracy of her memory of the assault?

Question 10 (2 marks)

With the aid of examples, distinguish between a circadian rhythm and an ultradian rhythm

Question 11 (2 marks)

Jules recently has been forced to change the password on her phone. Initially she had difficulty recalling the phone number, however, after several occasions in which she has correctly retrieved the password from memory she can now recall the password with minimal mental effort.

Explain how LTP (long-term potentiation) has occurred in this case.

Question 12 (5 marks)

Dr Zee is conducting an experiment on the effectiveness of the drug ‘Prosom’ (a type of Benzodiazepine) to reduce the symptoms of sufferers of a phobic disorder.

Dr Zee recruits 80 patients who have been diagnosed with a phobic disorder and employs a counterbalanced repeated-measures research design.

Prior to the commencement of the experiment all participants complete a self-report which evaluates the severity of their phobic disorder.

Phase One of the experiment: Half of the participants are required to take a daily dose of Prosom for 6 weeks, the other half of the participants are required to take a daily dose of the placebo for the same 6-week period. The participants then complete a similar self-report to the one they completed at the commencement of the experiment.

Phase Two of the experiment: The participants have their medication swapped over to either the Prosom or placebo and complete the same process as was carried out in Phase One. They also complete a final self-report in order to provide some descriptive statistics to compare the effectiveness of Prosom vs. the placebo.

a. Write a research hypothesis

2 marks

b. Describe the ethical implications in terms of informed consent for the use of placebo treatment in Dr Zee’s experiment

3 marks

Question 13 (5 marks)

A VCE psychology teacher conducted a serial position experiment in a Unit 3 Psychology class.

15 four-letter nouns were read out by the teacher at two second intervals. Immediately after the last word was read, the control group recalled as many words as they could, whilst the experimental group were required to write down as many prime numbers as they could for one minute. At the end of the minute, the experimental group were then required to recall as many of the words as possible.

- a. In terms of both the primacy and recency effects, justify any similarities or differences in the expected results from the two groups tested.

3 marks

- b. After all of the participants have completed the task the teacher calculates both the mean and the standard deviation for the two groups.

Explain the benefit of calculating both of these statistics.

2 marks

Question 14 (1 mark)

What role does myelin play in signal transmission?

Question 15 (2 marks)

Identify and describe two biological factors that could contribute to the development and progression of a mental disorder.

Question 16 (4 marks)

Emily was going for a trail run in a country town whilst on holiday when a Pitbull dog attacked her and triggered her fight-flight-freeze response.

Emily initially freezes

a. Define the fight-flight-freeze response.

2 marks

b. Identify one physiological change during Emily's freeze response that is distinctly different from a physiological change experienced when her body goes into 'fight' or 'flight' mode.

1 mark

c. Why is Emily's freeze response potentially an 'adaptive response'?

1 mark

Question 17 (7 marks)

Vern is completing research on the effects of caffeine on alertness.

- a.** Explain why caffeine is considered a stimulant.

1 mark

- b.** Explain the effects of caffeine on alertness as measured by an EEG.

2 marks

- c.** Using examples, distinguish between primary and secondary data related to changes in alertness due to the effects of caffeine.

2 marks

- d.** Identify one advantage and one disadvantage of conducting an experiment on the effects of caffeine on alertness in comparison to other types of research investigations.

2 marks

Question 18 (2 marks)

Sally attends her child's school trivia night fundraiser and is having difficulty answering the following question.

'Name any of the past five "Australian's of the Year"?

Despite feeling confident that she could name all five of the "Australian's of the year" if she was shown their photos, Sally cannot name any of the five before the time limit for answering the question has elapsed.

In terms of methods of retrieval, explain why Sally is unable to name any of the "Australian's of the Year" during the trivia competition.

Question 19 (10 marks)

Dr Pollocks was interested in testing the effectiveness of Cognitive Behavioural Therapy (CBT) in treating elderly people who suffer from insomnia.

Dr Pollocks called for volunteers between the ages of 65 and 80 who have consistently experienced difficulty falling asleep from 50 nursing homes located in the Eastern suburbs of Melbourne.

Volunteers were screened for a variety of neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease, any individuals who experienced symptoms of these diseases were not recruited for the study.

160 participants were accepted and then matched according to their age and gender, before being randomly allocated to either the control or experimental group.

The control group completed a two-week self-report that recorded details that may affect their sleep patterns.

The experimental group were placed into groups of 4 and provided with a daily one hour CBT session for one week.

After completion of the one week CBT program they were then required to complete the same two-week self-report to the control group.

A summary of the differences can be seen in the table below.

	Control group	Experimental group
Mean estimation of time taken to fall asleep (per night)	36 minutes	15 minutes
Mean estimation of total duration of sleep (per night)	6 hrs 45 minutes	7 hrs 06 minutes
Mean estimated rating of quality of sleep out of a score of 5 (5 = excellent sleep, 0 = poor, disruptive sleep)	2.5	3.5

Required

Analyse the findings of Dr Pollocks' investigation of the effectiveness of using CBT for treating insomnia of elderly patients. Support your analysis with reference to the following concepts

- An explanation of insomnia.
- A description of how CBT is used to treat insomnia.
- An evaluation of the use of self-reports as a method data collection.
- A conclusion that could be drawn based on the results of the experiment.

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