

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



**2017 - 2021**

## **UNITS 3 & 4 PSYCHOLOGY**

### **WRITTEN EXAMINATION**

**Reading time: 15 minutes**

**Writing time: 150 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>
<b>A</b>	<b>50</b>	<b>50</b>	<b>50</b>
<b>B</b>	<b>8</b>	<b>8</b>	<b>70</b>
			<b>Total 120</b>

- 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 23 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**

*Use the following information to answer questions 1 to 3*

Gen is enjoying the feeling of warmth from holding her daughter's hand.

**Question 1**

Which part of her sensory neurons are responsible for conducting afferent signals from the skin in her hand towards her brain?

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

**Question 2**

Which division of the nervous system is responsible for conveying afferent information from the skin on her hand and along her arm?

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

**Question 3**

Which division of the nervous system is responsible for initiating a conscious response of loosening her grip when her hand becomes too warm from the grip?

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

**Question 4**

Walter is currently taking medication to treat Parkinson disease. The medication would most likely function as a

- A. dopamine agonist.
- B. dopamine antagonist.
- C. acetylcholine agonist.
- D. acetylcholine antagonist.

*Use the following information to answer questions 5 to 9*

Seth immigrated with his young family from Sri Lanka earlier in the year to take up a position as an academic at the University of Sydney. Seth is finding it stressful dealing with Australian customs particularly at his workplace. He feels overwhelmed by his workload and lacks the confidence in his ability to competently perform his job. Seth has developed a stress-related illness and has been on stress leave from work for two weeks and during this time has experienced difficulty falling asleep due to his repeatedly thinking about some of the negative events that he experienced at work a few weeks ago.

**Question 5**

As a result of Seth's immigration, he has least likely experienced which of the following sources of stress?

- A. acculturative stress.
- B. daily pressures.
- C. eustress.
- D. distress.

**Question 6**

In terms of the General Adaptation Syndrome, when Seth was on stress leave from work, he was experiencing which of the following stages?

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

**Question 7**

In this scenario it appears, that Seth is demonstrating

- A. an approach coping strategy.
- B. the use of context-specific effectiveness.
- C. poor self-efficacy.
- D. high coping flexibility.

**Question 8**

Seth is experiencing which of the following sleep disorders?

- A. a parasomnia.
- B. a dystonia.
- C. a circadian phase disorder.
- D. all of the above.

**Question 9**

The source of Seth's difficulty in falling asleep (according to the scenario) is largely due to

- A. poor self-efficacy.
- B. stigma.
- C. rumination.
- D. depleted levels of cortisol in his bloodstream caused by stress.

**Question 10**

GABA and glutamate play a key role in

- A. memory.
- B. the regulation of the autonomic nervous system.
- C. suppression of the stress response.
- D. the regulation of the central nervous system.

*Use the following information to answer questions 11 to 14*

Lucy had just learned that she has been accepted to sing on the TV show "You're the Voice". Lucy was initially excited by this news, but she soon became highly anxious at the thought of performing an unfamiliar Nat King Cole song in front of a live audience and on national TV and consequently found it difficult to calm down for the next two days, she then developed an action plan to prepare for the show by practicing for her performance with a microphone on a big stage in order to help her confidently learn and recall the lyrics of the song when singing in a similar environment in which she would perform the song.

**Question 11**

Lucy's initial excitement from the news would have

- A. increased activity in her parasympathetic nervous system.
- B. resulted in the constriction of her pupils.
- C. increased activity in her adrenal gland.
- D. Increased activity in her bladder.

**Question 12**

In terms of the Lazarus & Folkman Transactional Model of Stress and Coping, Lucy's primary appraisal would have most likely been an evaluation that her pending performance was

- A. significant - a challenge.
- B. irrelevant.
- C. a form of eustress.
- D. benign-positive.

**Question 13**

In terms of the Lazarus & Folkman Transactional Model of Stress and Coping, Lucy's action plan would have been developed

- A. prior to her primary appraisal.
- B. during her primary appraisal.
- C. between her primary and secondary appraisals.
- D. during the secondary appraisal.

**Question 14**

Lucy's plan to practice on stage with a microphone in order to help her with the recall of the song lyrics is an application of the use of

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

**Question 15**

If more glutamate is released from a presynaptic neuron as a result of regular revisitation of a memory then potentially there will be a corresponding increase in the amount of \_\_\_\_\_ receptors which will contribute to \_\_\_\_\_

- A. NMDA; LTD.
- B. NMDA; LTP.
- C. AMPA; LTD.
- D. AMPA; LTP.

**Question 16**

The onset of Alzheimer's disease will tend to have a delayed effect on which of the following types of memory (comparatively)? i.e. which of the following types of memory will be the last affected by the progressive decline of the neurodegenerative disease.

- A. S.T.M
- B. episodic.
- C. semantic.
- D. procedural

*Use the following information to answer questions 17 to 19*

Hamish was a sighted person that was responsible for training a guide dog to work with blind people. Hamish was required to teach the dog to stop (whilst it was on a lead) when confronted with a flight of stairs in order for the blind person to register that there was an obstacle that needed to be navigated with care.

Hamish did this by repeatedly walking with the dog, then pulling on its lead when it came to a set of stairs and then rewarding the dog with a treat if it remained still for a few seconds.

**Question 17**

In terms of the tricomponent model of operant conditioning, the antecedent in this case was the dog

- A. receiving a treat.
- B. ignoring the command.
- C. sitting still.
- D. reaching a flight of stairs.

**Question 18**

Through the repetition of this process, the dog has learned to stop at a set of stairs via

- A. classical conditioning.
- B. LTP.
- C. social learning theory.
- D. LTD.

**Question 19**

After successfully training the dog to stop at a set of stairs, Hamish hoped that \_\_\_\_\_ had occurred and thus the dog would also stop at a kerb, a door, etc.

- A. stimulus discrimination.
- B. stimulus generalisation.
- C. spontaneous recovery.
- D. classical conditioning.

**Question 20**

Observational learning differs from operant conditioning, as for observational learning (unlike operant conditioning)

- A. the learning relies on consequences in order to strengthen or weaken behaviour.
- B. the learning occurs indirectly and may not be demonstrated until long after it has been learned.
- C. the learner's behaviour is voluntary.
- D. the responses are triggered by the central nervous system.

**Question 21**

In terms of the Little Albert experiment, Watson and Rayner repeatedly struck a steel bar that made a loud noise

- A. just before Albert saw the white rat.
- B. at the same time that he first saw the white rat.
- C. as he reached for the white rat.
- D. several seconds after he had been playing with the rat.

*Use the following information to answer questions 22 to 26*

Karl was a neurologist that was interested in measuring the effects of dementia on different facets of memory. Karl conducted a series of memory tests on a convenience sample of dementia sufferers at a local nursing home. The patients had to recall all of the digits that were presented in a series of rows starting with reading across a row with two digits, then covering it up to see if the digits could be retrieved in the correct order, and then following the same procedure for a row of three digits, then four digits and so on.

4 5  
 3 8 3  
 2 0 6 7  
 2 9 6 3 5  
 4 6 8 1 0 3  
 7 6 2 4 0 1 3  
 7 8 2 5 1 0 8 3  
 9 0 1 2 8 5 3 6 4  
 9 1 2 6 4 2 7 8 0 3  
 7 1 4 6 3 9 0 7 4 5 2  
 0 1 7 8 3 4 6 2 6 2 1 5

Following the first test a similar test was conducted on patients using double-digit numbers as follows

14 34  
 15 28 79  
 48 58 92 31  
 81 64 59 20 30  
 89 20 48 67 45 53  
 87 66 24 35 19 28 67  
 27 48 81 83 67 74 50 11

**Question 22**

The neurologists digit span test, was measuring

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

**Question 23**

The neurologist has used an experiment, which

- A. is an in-depth study of an individual or a group of participants.
- B. has observed patients in a natural setting.
- C. has manipulated a variable to test its effect on another variable.
- D. Is generally used to generate qualitative data.

**Question 24**

The participants would have had the opportunity to rehearse the digits as they entered their

- A. iconic memory.
- B. short-term memory.
- C. echoic memory.
- D. long term memory.

**Question 25**

This experiment has used/generated

- A. qualitative data.
- B. a cross-sectional study.
- C. secondary data.
- D. primary data.

**Question 26**

In terms of likely findings of the experiment, if a double-digit number was counted as two digits, then it would be expected that the participants

- A. would not be able to remember any of the digits.
- B. would recall an equal number of digits from both lists.
- C. would recall more digits from the single-digit list.
- D. would recall more digits from the double-digit list.

**Question 27**

According to the findings of the research completed by Loftus on the fallibility of memory reconstruction, memories can be altered by

- A. flaws in the encoding process.
- B. source confusion during the reconstruction process.
- C. the limitations of the capacity of memory.
- D. the lack of context-dependent cues.

**Question 28**

After witnessing a violent assault on a train, Josie was questioned by police. Which of the following brain structures is the least likely to be involved in the reconstruction of the memory of a traumatic event when questioned by police?

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

**Question 29**

Sleepwalking episodes tend to

- A. last for an hour or so.
- B. be well understood by researchers in terms of the cause of the sleepwalking episodes.
- C. involve complex controlled processes such as completing homework tasks.
- D. be forgotten by the sleepwalker.

**Question 30**

Which of the following types of consciousness would be expected to result in the lowest level of content limitations?

- A. selective attention.
- B. divided attention.
- C. a meditative state.
- D. a REM dream.

**Question 31**

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

- A. daydreaming
- B. a meditative state
- C. a drowsy state
- D. sleep

**Question 32**

Which of the following activities would be expected to have the highest level of amplitude on an EEG?

- A. daydreaming
- B. drowsiness
- C. ordinary wakefulness
- D. slow-wave sleep

**Question 33**

Luke and Beth are twins that are both sitting a University exam today. Luke stayed up all night (and thus had not slept for 24 hours) to study, whereas Beth had a few drinks last night to help calm her nerves and has woken up with a BAC of 0.045. In terms of their cognition, which of the following would be the most consistent outcome in comparison with past research on the effects of sleep deprivation vs. a legal BAC?

- A. they would both experience a similar reduction in their level of cognition
- B. Beth's cognition would be more affected than Luke's cognition.
- C. Luke's cognition would be more affected than Beth's cognition.
- D. neither Luke or Beth's cognition would be affected due to the arousing effects of the stress of completing a University exam.

**Question 34**

Which of the following age groups spends the highest proportion of their sleep in stages 3 & 4 of NREM sleep?

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

**Question 35**

Xander is socially active with his mates from school, but is experiencing occasional stress due to a high VCE workload. According to the mental health continuum, Xander would most likely be classified as

- A. mental healthy
- B. experiencing a mental health problem
- C. suffering from mental illness
- D. suffering from anxiety

*Use the following to answer the questions 36 to 41*

Elise is a highly anxious adolescent who regularly 'refuses' school and spends the majority of these days in her pajamas, in her bedroom, on her phone as she has a hostile relationship with her parents as a result of a disorganised attachment. She has become increasingly withdrawn (socially), her sleep-wake cycles are erratic and she suffers from insomnia and frequently wakes up during the night. Elise regularly hyperventilates when she becomes anxious

She has been referred to a mental health clinician who is trying to determine which form of treatment would be most effective for Elise, one strategy that was suggested initially was to employ a regular exercise routine.

**Question 36**

Elise is currently experiencing cumulative risk which

- A. will be eliminated if she utilises breathing retraining
- B. will be eliminated if she utilises a variety of protective factors
- C. can be partially offset by the use of protective factors
- D. means that she has developed a mental disorder according to the mental health continuum

**Question 37**

Which of the following would be most effective in dealing with the source of her anxiety, rather than the symptoms?

- A. CBT
- B. systematic desensitisation
- C. exercise
- D. breathing retraining

**Question 38**

Which of the following would be most effective in dealing with the effects of her hyperventilation?

- A. CBT
- B. systematic desensitisation
- C. exercise
- D. breathing retraining

**Question 39**

The source of Elise's disorganised attachment stem from

- A. her genetics
- B. insomnia
- C. unresolved conflicts from infancy
- D. unresolved conflicts from her early adolescence

**Question 40**

The use of exercise by Elise should enhance Elise's

- A. rumination
- B. stigma
- C. resilience
- D. attachment

**Question 41**

Elise's sleep disturbances are disruptive

- A. Just to her circadian rhythm
- B. Just to her ultradian rhythms
- C. to both her circadian and ultradian rhythms
- D. to neither of her circadian or ultradian rhythms

**Question 42**

Aiming to influence the families of mental health patients, in terms of the importance of challenging their unrealistic thoughts is a key objective of

- A. psychoeducation
- B. CBT
- C. the mental health continuum
- D. systematic desensitisation

*Use the following to answer the questions 43 to 47*

Zara is a successful 25-year-old academic who suffers from a phobic disorder and is in the middle of a six-month prescription of Intermezzo (a type of benzodiazepine). She has agreed to participate in a research investigation into the use of Zalephon (an alternative type of benzodiazepine).

The researchers informed the participants recruited for the study that half of them would consume a placebo drug for the duration of the experiment.

The research investigation ran for 12 weeks and required Zara to cease taking her existing medication and substitute it with the drug (Zalephon) for the duration of the study.

Zara (unknowingly) was part of the group that consumed Zalephon.

**Question 43**

Which of the following statements represented the most likely potential breach of Zara's informed consent in terms of her involvement in the experiment?

- A. It is unethical to use placebos on sufferers of a mental disorder
- B. Zara's legal guardian had not consented on her behalf
- C. Zara's lack of awareness of the type of drug she was consuming (placebo or Zalephon) for the duration of the experiment
- D. Zara's lack of awareness of the potential risks of ceasing her existing medication for the duration of the experiment

**Question 44**

Which of the following represents a perpetuating factor that may have contributed to the development and progression of Zara's phobic condition over the 12-week experiment?

- A. a poor response to medication
- B. stigma
- C. a disorganised attachment
- D. a balanced diet

**Question 45**

One of the symptoms of Zara's anxiety disorder is migraines induced by stiff neck muscles. The researchers were interested in determining if the Intermezzo would reduce muscle tension.

Which of the following methods would have most accurately measured changes in muscle tension due to the consumption of the drug?

- A. EEG
- B. EMG
- C. EOG
- D. a video monitor

**Question 46**

In this experiment, Zara was a member of

- A. the control group
- B. the experimental group
- C. both the control and experimental groups
- D. neither the experimental or control groups

**Question 47**

The use of placebos in this experiment are intended to control which of the following variables

- A. independent
- B. dependent
- C. confounding
- D. participant-related

**Question 48**

Whilst hiking through a bush trail, Xavian sighted a snake and experienced a 'freeze' response, during her freeze state her

- A. sympathetic nervous system would be highly active
- B. cortisol would have flooded into her bloodstream
- C. body would have briefly acted as if it was injured
- D. her immune system would have been activated

**Question 49**

According to hypnograms, elderly people spend the most amount of time in which of the following stages of sleep?

- A. REM sleep
- B. NREM sleep stage 2
- C. NREM sleep stage 3
- D. NREM sleep stage 4

**Question 50**

According to behaviorist's Phobias are typically perpetuated via

- A. classical conditioning
- B. negative reinforcement
- C. social learning
- D. GABA dysfunction

**SECTION B: SHORT-ANSWER QUESTIONS**

**Question 1 (5 marks)**

Whilst watching his daughter’s cricket game, a wasp landed on Theo’s left forearm. Before he realised what had landed on him, his right hand flicked the wasp away.

a. Identify the type of response that Theo’s flicking of the wasp represented

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1 mark

b. Describe the role of both Theo’s Central and Peripheral nervous systems in his response

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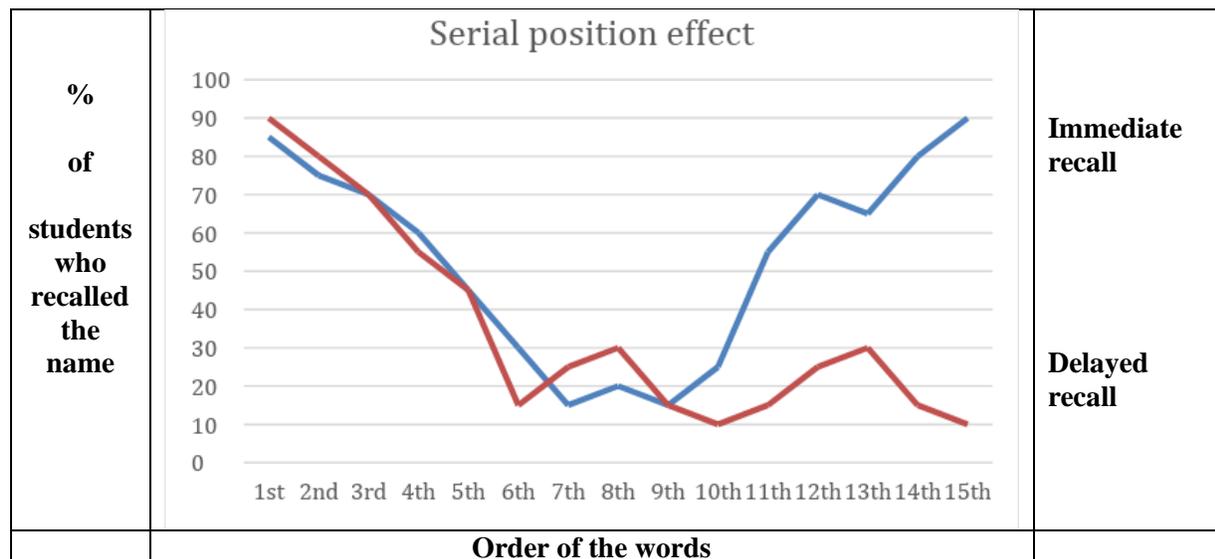
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4 marks

**Question 2 (12 marks)**

Two VCE Psychology classes were involved in a Serial Position Experiment.

- The teacher of each class read out 15 four-letter names e.g. Jane, Theo, Fred, Lisa, etc. at two-second intervals and both classes were to retrieve as many names as they could (in any order).
- Class A were able to retrieve the names immediately
- Class B used a delayed method of retrieval, i.e. after the final name was read out, they were required to write down as many African countries as they could in one minute and then (after the one minute) they were asked to recall as many of the 15 names as they could.
- The results of the experiment can be seen from the graph below.



**a.** Identify and describe the method of retrieval used by both groups

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2 marks

**b.** In terms of rehearsal and the multi-store model of memory, explain why there are similarities and differences in the results for the two classes.

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4 marks

**c.** Describe the impact of the use of names on the validity of the experiment

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2 marks

**d.** Explain how the reliability of the experiment could be determined

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2 marks

**e.** Identify and describe the method of allocation used in this experiment

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2 marks

**Question 3 (3 marks)**

After experiencing a prolonged period of stress due to a difficult marital break-up, Seth is 'exhausted'. In terms of the General Adaptation Syndrome, describe the factors that have contributed to Seth reaching the exhaustion stage

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**Question 4 (8 marks)**

Maeve is a 21-year-old university graduate who recently started a job as a paramedic that involved shiftwork.

In her first week of work, her work-shifts started at 11.00pm and finished at 7.30am. During this week, Maeve experienced sleep disturbances.

**a.** Describe Maeve's daily sleep requirements in terms of her REM/NREM sleep

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2 marks

**b.** Explain how Maeve's shift work could have contributed to a circadian-phase sleep disorder

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2 marks

**c.** Identify and explain a possible cognitive symptom that would affect her performance at work, as a result of the circadian phase disorder identified in part b.

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2 marks

- d. Explain how bright-light therapy could be used to treat Maeve’s circadian phase disorder identified in part b.

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2 marks

**Question 5 (9 marks)**

Chris is a passionate and driven secondary teacher who is struggling to keep on top of the demands of his schoolwork during a busy time of the year. Recently his third child was born and he regularly experiences interrupted sleep due to the needs of his infant child and his other two children, who are 18 months and 4 years old respectively. Chris never consumes alcohol or drugs and is sociable at work, but despite this, some of his close colleagues are concerned about his well-being.

- a. Identify two distinct internal factors that could affect Chris’s mental health

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2 marks

- b. Provide two indicators that he is maintaining social wellbeing

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2 marks

- c. Identify a biological, psychological and social protective factor that Chris may utilise (clearly indicate which factor is biological, psychological or social) to help him maintain his well-being.

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3 marks

- d. Chris has stated that he is experiencing stress, but he is not showing signs of anxiety. Distinguish between stress and anxiety

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2 marks

**Question 6 (7 marks)**

Shelly works as a laborer with a team of six other workers. The leader of the team regularly harasses Shelly at work. Shelly needs the work because she is a single-mother with two school-aged children. She has become increasingly aggressive at home with her children, yelling and belittling them for seemingly no reason. She relies on a nightly consumption of alcohol to calm herself down before she goes to sleep. After a visit from her sister who is a psychologist, she has been encouraged to drastically change her behavior for the sake of her children and her own wellbeing.

- a. In terms of the Transtheoretical model of behavioural change, provide a description that would indicate Shelly’s progression through each of the first four stages.

**Precontemplation**

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**Contemplation**

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**Preparation**

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**Action**

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4 marks

- b. Identify and describe the coping strategy that Shelly appears to be using in this case

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3 marks

**Question 7 (16 marks)**

Dr. Kain investigated the effects of Benzodiazepine consumption on the driver performance of patients who have been prescribed various forms of Benzodiazepines, given one of the known side-effects of these drugs is the potential for short-term impairment in cognition.

Using a repeated-measures research design, Dr. Kain recruited 20 volunteers aged between 25 and 65, who are currently on a daily dosage of a Benzodiazepine prescription for a mental condition, to participate in the study. These patients were all recruited via five mental health clinics in the Eastern Suburbs of Melbourne.

The patients all reported to a driver simulation room at Deakin University (which was equipped with 20 driver simulation machines). The patients were all required to complete their first driver simulation test at 4.00pm – 4.30pm and then they were required to consume their Benzodiazepine at 5.30pm. Following this they were required to complete additional 3 x 30-minute drivers simulation tests that were staggered over the following time frames in order to determine the short-term effects of the medication at different time intervals.

6.00pm - 6.30pm

8.00pm - 8.30pm

10.00pm - 10.30pm

Participants were required to avoid consumption of a benzodiazepine 24 hours prior to the commencement of the experiment.

The driver's simulation machine calculated a score out of 100 based on the adherence to traffic signals and their ability to exercise caution and respond to unexpected events e.g. a jogger dangerously running in front of them on a quiet road.

The results were summarised as follows.

	4.00pm - 4.30pm	6.00pm - 6.30pm	8.00pm - 8.30pm	10.00pm - 10.30pm
Mean driver's simulation performance scores out of 100	79.3	64.5	75.8	68.1
Standard deviation	9.5	9.2	8.2	19.2

a. Explain the theoretical effects of a depressant (the benzodiazepines) on cognition

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3 marks

**b.** Explain how Benzodiazepines are used as a biological intervention strategy for mental conditions

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3 marks

**c.** Write an evidence-based conclusion in terms of the effects of Benzodiazepines over time

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4 marks

**d.** Evaluate the use of the two forms of descriptive statistics (for central tendency and the spread of scores) used in the research investigation.

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3 marks

**e.** Describe how an order effect may have acted as a confounding variable in this experiment.

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3 marks











