



Trial Examination 2018

VCE Psychology Units 3&4

Written Examination

Question and Answer Booklet

Reading time: 15 minutes
Writing time: 2 hours 30 minutes

Student's Name: _____

Teacher's Name: _____

Structure of booklet

Section	Number of questions	Number of questions to be answered	Number of marks
A	50	50	50
B	9	9	70
			Total 120

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 booklet of 31 pages

Answer sheet for multiple-choice questions

Additional space is available at the end of the booklet if you need extra paper to complete an answer

Instructions

Write your **name** and your **teacher's name** in the space provided above on this page, and on the answer sheet for multiple-choice questions.

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 booklet.

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

Students are advised that this is a trial examination only and cannot in any way guarantee the content or the format of the 2018 VCE Psychology Units 3&4 Written Examination.

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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.

Use the following information to answer Questions 1–3.

Hubert's forearm brushed a rose bush as he was walking along a narrow pathway at home. He felt pain in his forearm and then noticed that there was a thorn stuck in his skin, which he then carefully removed.

Question 1

The sensory receptors in which component of the nervous system were responsible for the initial detection of the thorn?

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

Question 2

Which component of the nervous system was responsible for initiating the movement to remove the thorn?

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

Question 3

Which part of the sensory neuron was specifically responsible for conducting the pain message from the forearm to the spinal cord?

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

Question 4

Parkinson's disease is caused by the degeneration of dopamine-producing neurons in the

- A. motor cortex.
- B. thalamus.
- C. cerebellum.
- D. substantia nigra.

Use the following information to answer Questions 5–7.

Emily is feeling a high level of excitement about planning for her wedding in three months' time, although she is starting to feel run down due to her sustained level of arousal.

Question 5

In this case, planning for the wedding would most likely be classified as a

- A. daily pressure.
- B. life event.
- C. acculturative stress.
- D. a major distress that disrupts a whole community.

Question 6

Emily's excitement is an indication that she has experienced

- A. a fight-flight-freeze response.
- B. distress.
- C. eustress.
- D. acculturative stress.

Question 7

Which of the following would best explain Emily's physiological state when she was experiencing the excitement of planning for her wedding?

- A. The sympathetic nervous system would be totally suppressed.
- B. The parasympathetic nervous system would be totally suppressed.
- C. The sympathetic nervous system would experience a heightened level of activity in comparison to a relaxed state.
- D. The parasympathetic nervous system would experience a heightened level of activity in comparison to a relaxed state.

Question 8

Which of the following memory stores actively processes information received from the environment?

- A. sensory
- B. short-term
- C. long-term
- D. all of the above

Question 9

Alzheimer's disease typically starts in the

- A. hippocampus.
- B. hypothalamus.
- C. cerebellum.
- D. basal ganglia.

Use the following information to answer Questions 10 and 11.

Whilst going for a morning walk around the local park, Maeve was attacked by a vicious pit bull terrier. Her fight-flight-freeze response was activated as she vigorously tried to protect herself from the dog.

Question 10

The neurohormone that would be first released in response to the threat of the dog is

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

Question 11

Which of the following physiological systems would have been suppressed by the activation of Maeve's fight-flight-freeze response?

- A. bowel activity
- B. heart rate
- C. the release of sugar and fats
- D. sweat gland activity

Use the following information to answer Questions 12 and 13.

Max is a homeowner who last year borrowed a considerable amount of money for a planned extension of his house. He paid a significant deposit to his builder, who stated that he would start work on the house immediately after the Easter holiday period.

Two weeks after this period, Max tried to contact his builder and was notified that they have left the country with Max's money, and have no intention of returning to start the extension or to pay the money back. Max was distressed by this news.

Question 12

In terms of Selye's General Adaptation Syndrome, which of the following would be an indicator that Max was experiencing a state of shock during the alarm stage of the model?

- A. his sympathetic nervous system being activated
- B. his heart rate increasing
- C. showing signs of suffering from influenza
- D. his body temperature being reduced

Question 13

After three days of dealing with the stress of trying to contact the builder and negotiate his position with his bank, Max is having difficulty sleeping and has lost his appetite. Despite this, Max's body has adapted to the demands of the original stressor of dealing with the prospect of a large financial loss.

According to Selye's General Adaptation Syndrome, Max is most likely experiencing

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

Use the following information to answer Questions 14–17.

Box Hill University was commissioned to investigate the side effects of taking antihistamines, which are used to treat allergies. Some antihistamines are classified as sedatives, and so a well-known side effect of these is that they make patients sleepy.

Question 14

Sedating antihistamines are a type of

- A. placebo.
- B. depressant.
- C. stimulant.
- D. glutamate agonist.

Question 15

In which of the following research options would the university have the most difficulty in controlling the experimental conditions compared with the controlled conditions?

- A. a case study
- B. a matched-participants research design
- C. a repeated-measures research design
- D. an independent-groups research design

Question 16

Placebos were given to half of the participants in the university's research investigation.

This is an example of the use of

- A. standardised procedures.
- B. counterbalancing.
- C. a double-blind procedure.
- D. a single-blind procedure.

Question 17

The university planned to sample adult allergy sufferers from the eastern suburbs of Melbourne. According to a medical database, the ratio of male to female allergy sufferers was 32% : 68%.

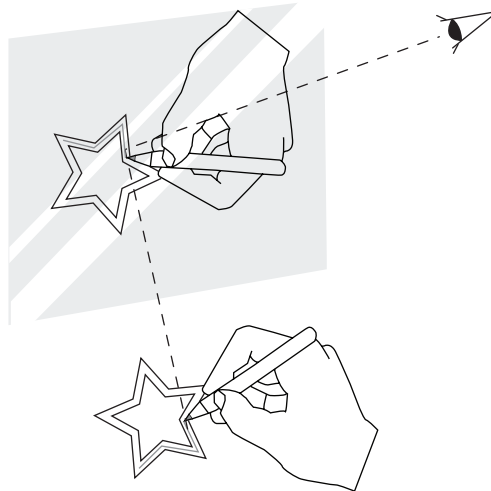
Which sampling method would the university need to use to ensure that the sample proportions matched the gender proportions of the population?

- A. convenience
- B. random
- C. stratified
- D. independence

Use the following information to answer Questions 18–20.

In 1953, Henry Molaison had an area of his brain surgically removed to eliminate the source of life-threatening epileptic seizures. The operation was successful in achieving this, but a significant side effect of the surgery was significant memory impairment. Following the operation, Molaison could not remember conversations that he had earlier in the day or whether he had eaten breakfast that morning.

Further testing of his memory found that Molaison could form memories via repetition, as illustrated by the mirror-drawing task shown in the diagram below. The task required him to draw a star between two outlines of a star whilst only viewing a mirror. Like most people, he struggled with this initially, but through repeated trials over a number of days, he became more proficient with time, despite not remembering any of his past experiences with the task on previous days.



Question 18

Which of Molaison's brain structures had been largely removed during the operation?

- A. hippocampus
- B. hypothalamus
- C. cerebellum
- D. basal ganglia

Question 19

Molaison's inability to recall details of conversations from earlier in the day following his surgery indicated that he was suffering from

- A. retrograde amnesia.
- B. anterograde amnesia.
- C. Alzheimer's disease.
- D. Parkinson's disease.

Question 20

Which of the following memories were largely unaffected by Molaison's surgery, as indicated by his ability to master the mirror-drawing task?

- A. semantic
- B. episodic
- C. implicit
- D. flashback

Question 21

Which of the following is the most used method to generate or present qualitative data?

- A. a bar chart
- B. standard deviation
- C. percentages
- D. self-reports

Question 22

Four years ago Drew, a school teacher, suffered a bad case of the flu during Term 3. As a result, he took up an offer by the school three years ago for a free flu injection at the start of Term 3. Drew did not suffer from the flu that year and has since had an annual flu injection.

Drew's behaviour has been learned via

- A. classical conditioning.
- B. positive reinforcement.
- C. negative reinforcement.
- D. response cost.

Question 23

Two years ago, several Year 12 students at Spring Secondary College were banned from end-of-year functions for a variety of illegal activities carried out on their final 'muck-up' day at school. As a result, the Year 12 students from last year behaved themselves at the end of the year to avoid any undesirable consequence.

The behaviour of the Year 12 students from last year had been learned via

- A. negative reinforcement.
- B. positive punishment.
- C. social learning.
- D. classical conditioning.

Question 24

A classically conditioned spinal reflex response is typically stored in the

- A. cerebellum.
- B. hypothalamus.
- C. hippocampus.
- D. substantia nigra.

Question 25

Pau's little brother asked him for his computer password so that he could access a work document stored online. Initially Pau could remember each of the six digits in his password combination, but not in the correct order. Pau then imagined he was using a keyboard to type the numbers and found that he could correctly remember the six digits in the correct order.

Pau's retrieval of his six-digit password is an example of

- A. recognition.
- B. relearning.
- C. free recall.
- D. serial recall.

Question 26

Jacqueline works in an office and has recently complained of a back problem. She saw a chiropractor about her condition who recommended that when Jacqueline is at work, she should set an alarm on her watch to sound every 30 minutes, at which point she should stand up and perform a series of routine back-related stretches for 30 seconds to minimise back stiffness.

In terms of the three-phase model of operant conditioning, the antecedent in this case is

- A. the elimination of back stiffness.
- B. seeing a chiropractor.
- C. the alarm sounding (every 30 minutes).
- D. performing the routine back-related stretches.

Question 27

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

- A. daydreaming
- B. sleep
- C. a hypnotic state
- D. drowsiness

Question 28

Claire is relaxing on the couch watching a singing talent show on television.

An electroencephalograph (EEG) would most likely record which of the following types of brain waves?

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

Question 29

Which of the following brain structures plays a key role in regulating the body's sleep-wake cycle?

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

Use the following information to answer Questions 30–34.

Dr Ginseng wanted to investigate the effects of a sleep-inducing tea, derived from natural herbs such as chamomile, which could potentially be marketed towards adults diagnosed with sleep-onset insomnia.

178 participants (aged 22–66) volunteered to participate in the two-week research investigation. They were recruited via a social media page that was maintained by the sleep clinic that Dr Ginseng represented.

During the first week of the experiment, half of the participants were instructed to maintain a consistent 'sleep hygiene' by endeavouring to maintain regular sleep-wake times. They were also instructed to keep a sleep diary and record estimations of how long it took them to fall sleep, as well as rating their quality of sleep and their daytime attentiveness.

The other half of the participants were given the same instructions, but in addition were instructed to consume a 200 g dosage of the sleep-inducing tea thirty minutes prior to bed.

In the second week of the investigation, the participants in each group swapped around to the alternative condition.

Question 30

What type of research investigation has Dr Ginseng used in this case?

- A. naturalistic observation
- B. an experiment
- C. a case study
- D. a cross-sectional study

Question 31

Dr Ginseng's research investigation would be least effective in eliminating which of the following extraneous variables?

- A. order effect
- B. participant-related variables
- C. a small sample size
- D. placebo effect

Question 32

What was the independent variable in this case?

- A. the duration of sleep
- B. the self-rated quality of sleep
- C. the consumption of the sleep-inducing tea
- D. whether the participants experience sleep-onset insomnia or not

Question 33

What type of data would be the most useful form of comparison between the two weeks of the experiment in order to construct a conclusion of the research investigation?

- A. qualitative
- B. secondary
- C. the mean scores
- D. the standard deviation of the scores

Question 34

What type of sleep phenomena are the patients suffering from?

- A. dyssomnia
- B. parasomnia
- C. a circadian-phase disorder
- D. fatal familial insomnia

Question 35

During a double period of her Visual Communication and Design class, Emma had been busy working on one of her folio pieces but has now drifted off into a daydream.

Emma's daydream is an example of

- A. an altered state of consciousness in which she is experiencing an increase in content limitations.
- B. an altered state of consciousness in which she is experiencing a decrease in content limitations.
- C. a normal waking consciousness in which she is experiencing an increase in content limitations.
- D. a normal waking consciousness in which she is experiencing a decrease in content limitations.

Question 36

An individual is most likely to experience an increase in which of the following types of brain waves when under the influence of a stimulant?

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

Question 37

Which of the following would be classified as an affective symptom of sleep deprivation?

- A. difficulty in performing automatic processes
- B. moodiness
- C. shortened attention span
- D. impaired hand–eye coordination

Question 38

For a middle-aged adult, which of the following stages is least likely to occur in the fourth ultradian sleep cycle rhythm during a normal night's sleep?

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

Question 39

Lou is an adolescent suffering from delayed sleep phase syndrome. His doctor has suggested that Lou try using bright light therapy as a form of treatment for this condition.

Ideally Lou will be exposed to twenty minutes of bright light

- A. early in the morning in order to delay his circadian rhythm.
- B. late in the evening in order to delay his circadian rhythm.
- C. early in the morning in order to advance his circadian rhythm.
- D. late in the evening in order to advance his circadian rhythm.

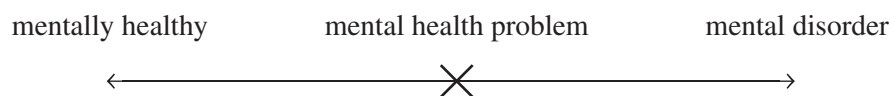
Question 40

In terms of the 4P factor model that contributes to the development of a mental disorder, which of the following factors both increases the occurrence and contributes to the development of a mental condition.

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

Question 41

Bella is a twenty-three-year-old medical student who is finding the demands of her studies, along with financial pressures, to be highly stressful. In terms of the mental health continuum, she would be classified as suffering from a mental health problem, as shown below.



Which of the following factors is most likely to prevent Bella moving from the mental health problem section of the continuum to the mentally healthy section?

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

Use the following information to answer Questions 42–46.

Dr Scollo wants to investigate the effectiveness of the use of Lexapro, a type of benzodiazepine, in the treatment of patients who have been diagnosed with a phobia of specific types of animals.

Question 42

In the treatment of phobias, benzodiazepines such as Lexapro work by

- A. reducing the release of GABA from axon terminals.
- B. increasing the release of GABA from axon terminals.
- C. mimicking the effects of GABA at their receptor sites on postsynaptic dendrites.
- D. blocking the uptake of GABA at their receptor sites on postsynaptic dendrites.

Question 43

Which of the following divisions of the nervous system do benzodiazepines such as Lexapro target?

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

Question 44

Which of the following would be classified as a perpetuating risk factor to the development and progression of a phobic disorder in Dr Scollo's patients?

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

Question 45

An ethics committee would be most likely to grant permission to Dr Scollo to use placebos in her experiment with Lexapro if

- A. the minors who participate in the experiment provide their independent informed consent.
- B. the participants are fully debriefed prior to the commencement of the experiment.
- C. participants are fully aware of their withdrawal rights.
- D. she has demonstrated the placebos will provide some lasting benefits for the patients.

Question 46

Which of the following would be an example of secondary data that Dr Scollo could utilise in reporting her findings?

- A. the results published from other researchers that investigated the effectiveness of alternative benzodiazepines
- B. self-reported data from the participants in her experiment
- C. a comparison of the mean scores of the number of symptoms present in patients before and after the exposure to Lexapro
- D. a bar graph comparing the scores for severity of the symptoms in a placebo group versus a Lexapro group for an independent-groups research design

Question 47

According to the cognitive model in psychology, which of the following is the most likely contributing factor to the development and progression of a phobic disorder?

- A. classical conditioning
- B. operant conditioning
- C. a memory bias
- D. long-term potentiation

Question 48

In order to build resilience, individuals facing adversity are best advised to predominately focus on

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

Question 49

According to the transtheoretical model of behaviour change, which of the following human characteristics has a key influence on an individual's ability to successfully transition from one stage to another?

- A. rumination
- B. self-efficacy
- C. stigma
- D. attachment

Question 50

Chris has been suffering from the symptoms of an anxiety disorder for several years. He lives by himself and is socially isolated. After receiving some encouragement from a family member at a recent Christmas function, Chris is ready to change his behaviour. This is reflected in his plan to become more socially active by volunteering to help out at the local football club, as well as to seek assistance in gaining employment in the new year period. He has communicated this to his family.

According to the transtheoretical model of behaviour change, Chris has reached which of the following stages?

- A. action
- B. maintenance
- C. precontemplation
- D. preparation

END OF SECTION A

SECTION B**Instructions for Section B**

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

Question 1 (10 marks)

Don, an American university student, has recently come to Australia to study for a year. As soon as he arrived he leased a car, but initially had great difficulty interpreting his speedometer – which measured driving speed in kilometres per hour (kph) – as he had been driving in American cars for the previous five years, which measure speed in miles per hour (mph). Don regularly rehearsed a few conversions; for instance, 40 mph = 64 kph.

- a.** Explain the role of long-term potentiation in Don's learning of the speed conversions. 2 marks

- b.** Explain the role of glutamate in terms of the lock-and-key process that enabled Don to learn the conversions. 3 marks

- c.** Describe the role of rehearsal in forming the memory of the conversions. 2 marks

- d.** Using psychological terms, explain why Don may find it easier to recall the conversion rule whilst he is in a car as opposed to at home. 3 marks

Question 2 (13 marks)

Charlotte was accused of cheating on a Psychology SAC by one of the two supervising teachers on duty. She is scheduled for a meeting with her parents, the school principal, the two supervising teachers and the VCE coordinator on Monday.

- a.** In terms of Lazarus and Folkman's Transactional Model of Stress and Coping, describe **two** different primary appraisals that Charlotte may make. 4 marks

- b.** In terms of Lazarus and Folkman's Transactional Model of Stress and Coping, explain why Charlotte may need to make a secondary appraisal. 2 marks

c. On Monday, Charlotte chose an avoidant coping strategy.

- i. Describe what is meant by the term ‘avoidant coping strategy’, including an example of how Charlotte may have responded on the Monday of the meeting. 2 marks

- ii. Describe **one** advantage of avoidant coping strategies. 1 mark

- iii. Describe **one** limitation of avoidant coping strategies. 1 mark

d. One of the supervising teachers, Mr Harrington, initially claimed he was unaware of any cheating on the SAC. He was then asked a series of questions by the other supervising teacher immediately after the incident. When he was later interviewed by the VCE coordinator in the meeting, he recalled some additional information that was evidence of Charlotte cheating.

Using psychological terms, explain how Mr Harrington’s memory of the cheating incident may have changed between his initial memory and his memory of the incident one week later.

3 marks

Question 3 (3 marks)

Distinguish between the role of the cerebral cortex and the hippocampus in memory. In your answer, be specific about the types of memory involved.

Question 4 (2 marks)

Explain **two** key findings of Watson and Rayner's experiment with 'Little Albert'.

Question 5 (5 marks)

Vera is a young adult who had a difficult upbringing and now suffers from an anxiety disorder. Despite her condition, she is a competitive long-distance runner who maintains a good diet and enjoys training on a daily basis with a large squad of other runners.

- a.** Describe how a disorganised attachment could have contributed to Vera's condition. 2 marks

- b.** Explain the role of cumulative risk in Vera's condition. 3 marks

Question 6 (7 marks)

Zahara has recently been promoted to night-manager for a large hotel in the city. She will be required to work from 11:00 pm to 7:00 am five days a week, and has been warned about the potential for sleep deprivation to affect her general wellbeing.

- a.** Explain how night-shift work could disrupt Zahara's body's circadian rhythm. 3 marks

- b.** Identify a potential behavioural symptom of sleep deprivation caused by night-shift work that could affect Zahara's ability to perform her new role at the hotel. 2 marks

- c.** In terms of the restorative theory of sleep, explain the importance of both REM and NREM sleep that will help Zahara cope with the demands of her new job. 2 marks

Question 7 (8 marks)

Professor Emilie Brady was interested in investigating the effects of sustained phone use, including social media activity, on attention and short-term memory.

Professor Brady aimed to recruit approximately 100 children aged 11–12 years who had minimal exposure to phone use (and social media) and pre-test these children in terms of their attention spans, as well as have them complete a series of age-appropriate short-term memory experiments to determine their short-term memory capacity and duration.

She then planned to re-test the participants once every two years to see how potential exposure to mobile phone use and social media activity may affect their attention as well as their short-term memory capacity and duration. Professor Brady wished to publish her findings via journal articles and online platforms after each two-year period.

- a.** Explain how Professor Brady could employ a convenience sample for her research proposal. 2 marks

- b.** Describe a test that could be used to measure short-term memory capacity. 2 marks

- c.** Explain how both the mean and standard deviations would be useful statistics to calculate in this case. 4 marks

Question 8 (12 marks)

Frank is an adolescent who suffers from a phobia of roads and vehicles, particularly cars. This has recently prevented him from leaving the house at times.

- a.** In terms of the mental health continuum, provide **two** indicators that Frank's phobic condition is an example of him merely experiencing a mental health problem as opposed to a mental illness. 2 marks

- b.** Define the term 'phobia'. 2 marks

- c.** In terms of the behavioural model, identify and describe a precipitating factor that could have contributed to the development of Frank's phobia. 3 marks

- d.** Explain how cognitive behavioural therapy could be used as a form of treatment for Frank.

3 marks

- e.** Identify and describe an indicator that would demonstrate Frank is mentally healthy following successful treatment of his condition.

2 marks

Question 9 (10 marks)

Dr Deighton aimed to investigate and compare the impact of alcohol and sleep deprivation on the accident rate of drivers.

210 drivers aged 21–50 years old who had been convicted of negligent driving causing a traffic accident in the last two years were invited to participate via the Transport Accident Commission (TAC) database, which mailed out the details of the experimental procedure. 88 participants agreed to participate in the three-phase experiment.

Phase one, 1st October 2017: All drivers were instructed to attempt to have between 6.5–8.5 hours of sleep and ensure that they had not consumed any alcohol for the 24 hours prior to the test. All drivers reported to the Grand Prix Driver Simulation. There were two types of tests conducted – routine and non-routine.

Routine tests included simulated driving on a relatively straight road, which required occasional stopping for red lights, slowing or stopping for give-way signs and roundabouts and obeying speed limit signs (such as changing from 60 kph to 40 kph when entering a school zone). Driver performance was based on the percentage of correct decisions that were made; for example, stopping prior to entering the intersection when a red light was signalled.

Non-routine tests included driving in a simulated suburban or retail area and then being exposed to a series of unexpected events, such as a car suddenly stopping in the middle of a road or a bike rider falling off her bike in the path of the driver (a few seconds ahead). Driver performance was based on the percentage of safely executed evasive measures employed by the driver.

Phase two, 8th October 2017: All drivers were required to attend an all-night activity at Deakin University (which involved no alcohol) in which they played a series of board and card games that were designed to keep them awake all night. The participants were then transported to the same testing facility and performed the same tests as in phase one of the experiment.

Phase three, 15th October 2017: All drivers reported to the testing facility after 6.5–8.5 hours of sleep and were required to consume approximately five standard drinks. They were then required to complete the same tests as they did in phases one and two of the experiment once they had recorded a blood alcohol concentration (BAC) of approximately 0.05.

A summary of the results is shown below.

	Phase one (1 October)	Phase two (8 October)	Phase 3 (15 October)
Driver simulation performance on routine tests (%)	93.1	66.2	67.4
Driver simulation performance on non-routine tests (%)	71.2	70.1	50.1

Assess Dr Deighton's investigation by:

- evaluating the results of the experiment
- discussing the findings of the experiment using psychological terms
- discussing the validity and reliability of the method of data collection
- evaluating the research design used

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