Semester One

ATAR course examination, 2024

Question/Answer booklet

PSYCHOLOGY - UNIT 3

Student Number: In figures

In words \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Time allowed for this paper

Number of additional answer booklets used (if applicable):

Reading time before commencing work: ten minutes

Working time: three hours

Materials required/recommended for this paper

*To be provided by the supervisor*

This Question/Answer booklet

*To be provided by the candidate*

Standard items: pens (blue/black preferred), pencils (including coloured), sharpener,

correction fluid/tape, eraser, ruler, highlighters

Special items: up to three calculators, which do not have the capacity to create or store programmes or text, are permitted in this ATAR course examination

Important note to candidates

No other items may be taken into the examination room. It is **your** responsibility to ensure that you do not have any unauthorised material. If you have any unauthorised material with you, hand it to the supervisor **before** reading any further.

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**Structure of this paper**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Section | Number of questions available | Number of questions to be answered | Suggested working time  (minutes) | Marks available | Percentage of exam |
| Section One  Short answer | 5 | 5 | 120 | 125 | 70 |
| Section Two:  Extended Answer  Part A  Part B | 1 | 1 | 60 | 20 | 10 |
| 2 | 1 | 33 | 20 |
|  |  |  | **Total** | 178 | 100 |

Instructions to candidates

1. The rules for the conduct of the Western Australian external examinations are detailed in the *Year 12 Information Handbook: Part II Examinations*. Sitting this examination implies that you agree to abide by these rules.
2. Answer the questions according to the following instructions.

Sections One: Write your answers in this Question/Answer booklet preferably using a blue/black pen. Do not use erasable or gel pens. Wherever possible, confine your answers to the line spaces provided.

Section Two: Consists of two parts. Part A with one question, part B with two questions. You must answer one question from each part.

1. You must be careful to confine your answers to the specific questions asked and to follow any instructions that are specific to a particular question.
2. Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

# Section One: Short answer 70% (125 Marks)

This section has **five** questions. Answer **all** questions. Write your answers in the spaces

provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 120 minutes.

# Question 1 (25 marks)

Ollie loves to eat spicy food but dislikes the smell and taste of coriander, a herb used in some spicy dishes. His father convinces him to eat a curry that contains coriander and it has at least 10 other strong flavours. Ollie’s father thinks that the other flavours will make a difference. However, Ollie says that all he can taste and smell is the coriander.

(a) (i) Define the term ‘sensation’. (1 mark)

(ii) Complete the table below to describe the **three** steps in the process involved in sensation applied to Ollie’s sense of smell. (4 marks)

|  |  |
| --- | --- |
| **Step** | **Description** |
| **1: Reception** |  |
| **2:** | **Incoming smell is converted to an electrical signal (action potential).** |
| **3:** |  |

**Question 1** (continued)

(b) (i) Define the term ‘perception’. (1 mark)

(ii) Using the processes of perception, explain how Ollie has perceived the unpleasant taste of the coriander. (3 marks)

Researchers in Western Australia wanted to compare the response times for visual perception in gifted and talented adults. They recruited 30 gifted and talented participants from the first year Psychology students at the WA University, and assigned them to **one** of two groups:

Group 1: Computer screen only

Group 2: Music playing and computer screen

Both groups were asked to click a mouse each time they saw a blue star appear on the computer screen. The computer measured the amount of time in milliseconds between the image appearing and the mouse being tapped.

(c) Identify the population and sample for this study. (2 marks)

(d) Name and describe the method used to select the participants. (2 marks)

(e) Name the type of attention being tested in Group 2 and give a reason for your response. (2 marks)

Data collected showed that the mean time for Group 1 was 1.3 milliseconds and Group 2 was 2.1 milliseconds.

(f) (i) State the calculation for a mean score. (1 mark)

(ii) State **one** disadvantage of using a mean score when processing data. (1 mark)

One month after the initial testing. The researchers contacted the original participants and asked them to recruit two friends outside the University to repeat the research task.

(g) (i) Name the sampling method applied to the second round of the research. (1 mark)

(ii) Outline why this method would be applied to the population for this study. (3 marks)

**Question 1** (continued)

The researchers conducted their study a second and third time within Western Australia. Other groups of researchers located in Indonesia, England and Italy also reproduced the study. The results were published together as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **Location** | **Number of participants** | **Mean score in milliseconds** | |
|  |  | **Group 1** | **Group 2** |
| Western Australia | 30 | 1.3 | 2.1 |
| Western Australia | 50 | 1.4 | 2.0 |
| Western Australia | 20 | 1.3 | 2.2 |
| Indonesia | 10 | 1.2 | 2.1 |
| England | 60 | 1.1 | 2.0 |
| Italy | 30 | 1.3 | 2.2 |

(h) Evaluate the results of this research in terms of reliability. (4 marks)

**Question 2 (26 marks)**

Po is discussing her fear of the dark with her friend, Nat. She describes an occasion when she went into a dark room and her cousin shouted “Boo!” before pushing her over. The cousin used to regularly jump out from dark places and scare her. Even when her cousin is not around, Po is afraid of all dark spaces. Nat states that she had similar experiences with her sister but had not developed a fear of the dark. Nat suggests that this could be because she also had many experiences of being in the dark without something frightening occurring.

They discussed their experiences during a Psychology class and the teacher suggested that this was linked to the learning theory ‘classical conditioning’.

(a) (i) Identify the theorist who conducted a study into classical conditioning using dogs. (1 mark)

(ii) Referring to the dog study, identify the unconditioned response and unconditioned stimulus: (2 marks)

|  |  |
| --- | --- |
| **Unconditioned stimulus** |  |
| **Unconditioned response** |  |

(iii) Outline the role of the neutral stimulus in classical conditioning with an example from the dog study. (3 marks)

**Question 2** (continued)

b) Describe the **two** classical conditioning concepts that can explain why Po has become afraid of the dark and Nat has not. (6 marks)

Concept 1:

Concept 2:

Po and Nat continued with Psychology classes and discovered that different parts of the brain play a role in memory associated with classical conditioning. They learned about experiments where the reflex action of blinking was classically conditioned to a puff of air. When experiments damaged the cerebellum of animals, the animals no longer produced a reflex response to a puff of air.

(c) (i) Define implicit memory. (1 mark)

(ii) Explain the role of the cerebellum in the storage of implicit memories. (3 marks)

(iii) Outline the role of the amygdala in the formation of Po’s memory linked to being afraid of the dark. (4 marks)

Nat tells Po about her friend who had a phobia based on fear of the dark. (Nyctophobia). Her friend cannot sleep in a dark room, suffers from extreme anxiety, even when thinking of the dark or watching videos where darkness occurs. Po wonders if she has a phobia because she is frightened of the dark.

(d) Explain the term ‘phobia’. (3 marks)

(e) Outline how systematic desensitisation applies principles of classical conditioning to modify behaviour in relation to fear of the dark. (3 marks)

**Question 3 (22 marks)**

Craik and Lockhart (1972) developed the levels of processing model of memory in terms of the persistence of memory traces.

(a) Explain memory and memory processing in the context of this model. (2 marks)

(b) Outline the **two** processes involved in shallow processing and provide an example to illustrate each process. (6 marks)

Process 1:

Process 2:

(c) Describe how deep processing would be applied to the memory of the concept ‘happiness’. (2 marks)

Craik and Tulving (1975) conducted a study*: Depth of processing and the retention of words in episodic memory to test the levels of processing model*. They conducted 10 different experiments using a general method and manipulating certain conditions for each of the experiments.

(d) Describe ‘episodic memory’. (2 marks)

(e) Outline the general method applied in Craik and Tulving’s study. (5 marks)

(f) Outline the key finding of Craik and Tulving’s (1975) study. (2 marks)

**Question 3** (continued)

(g) Outline free, serial and cued recall in the process of remembering words. (3 marks)

Free recall:

Serial recall:

Cued recall:

**Question 4 (21 marks)**

(a) Describe Albert Bandura’s (1977) social learning theory. (3 marks)

Priti wanted to teach her daughter, Mee, how to change the oil in a car. She decided to apply the process of observational learning to make sure Mee learned the new skill. When she was showing Mee how to do change the oil, Mee’s older male cousin and her favourite aunt commented that they were impressed with Priti’s skills and knowledge of cars.

b) Describe the **first three** elements of the process that must occur for successful observational learning applied to Mee learning how to change oil in the car. (6 marks)

**Question 4** (continued)

(c) Explain how Mee’s older male cousin and favourite aunt have contributed to the likelihood of Mee feeling motivated to learn the new skill. (3 marks)

Bandura, Ross and Ross (1961) conducted a study known as the “Bobo Doll Experiment” to examine the effects of observational learning.

d) Outline **two** limitations of this study. (2 marks)

One:

Two:

Schools in Australia reported increased levels of aggression among girls. Researchers were interested to find out if the behaviour was specific to a single age group or whether it would continue over time. They designed a study that examined the students at different intervals in their lifespan.

8 years old

12 years old

20 years old

16 years old

**Time**

(e) (i) Name the research design being applied to the study. (1 mark)

(ii) Describe this research design applied to the study of aggression. (3 marks)

The researchers collected data and calculated the relationship between age and aggression, represented by Pearson’s correlation coefficient (r) in the table below.

|  |  |
| --- | --- |
| Age | R-value |
| 8 | 0.31 |
| 12 | 0.42 |
| 16 | 0.75 |
| 20 | -0.22 |

(f) Compare the relationship between being aged 16 and 20 and aggression represented in the table above. (3 marks)

**Question 5 (31 marks)**

Winkens et al. (2019) conducted research in The Netherlands into whether using a specific behaviour management technique applied to patients with acquired brain injury improved their antisocial behaviour.

The nurses were trained in using an ABC method that identifies Antecedent events, target Behaviours and Consequences. Observations of the patients were conducted based on these elements of the three-phase model during interactions in the hospital cafeteria.

(a) (i) Identify the learning theory applied to this study. (1 mark)

(ii) Describe the components of the three-phase model and provide an example to illustrate each component based on aggressive behaviour related to a patient pushing into a long queue for their favourite food at the cafeteria. (6 marks)

|  |  |  |
| --- | --- | --- |
| **Component** | **Description** | **Example** |
| **Antecedent** |  |  |
| **Behaviour** |  |  |
| **Consequence** |  |  |

56 patients participated in the study. The inclusion criteria for participants was being over the age of 18 and fluent in Dutch language (the study was conducted in The Netherlands). Patients who were minimally conscious or suffering from post-traumatic amnesia (memory loss) were excluded from the study.

There were many differences between the participants including different injuries, living conditions and ages. The researchers decided not to conduct the study using an experimental design with random allocation.

(b) (i) Identify **one** participant variable that was controlled in the study. (1 mark)

(ii) Outline how **one** of the uncontrolled participant variables might impact the study. (3 marks)

(iii) Identify the **two** groups present in experimental design. (2 marks)

(iv) Define ‘random allocation’. (1 mark)

**Question 5** (continued)

(v) Explain the purpose of applying random allocation in experimental research. (3 marks)

Each patient was approached with written and oral information about the study. Those who were unable to read or understand the information had a legal representative appointed to provide consent.

(c) (i) Name the ethical consideration illustrated by appointment of a legal representative. (1 mark)

(ii) List **three** pieces of information that must be communicated to participants for informed consent to occur. (3 marks)

(iii) State how privacy would be protected for all participants in the study. (1 mark)

In a follow up study in Australia, nurses (n=62) reported on how effective the ABC method was based on a survey that recorded scores ranging from 1 (totally disagree) to 5 (totally agree). Nurses were asked to apply these ratings to the following statements:

* The ABC method was effective for improving patient antisocial behaviour.
* The ABC method was easy to use.
* Team Cooperation improved when using the ABC method.

The mean scores were as follows.

|  |  |  |
| --- | --- | --- |
| Effectiveness of ABC | Use of ABC | Team cooperation using ABC |
| 2.1 | 3.01 | 2.50 |

(d) (i) Name the method of data collection applied to the nurses and measurement tool used. (2 marks)

|  |  |
| --- | --- |
| **Method** |  |
| **Measurement tool** |  |

(ii) Outline **one** strength and **one** limitation of using this method of data collection. (2 marks)

Strength:

Limitation:

(iii) Identify whether the data collected is subjective or objective and provide a reason for your response. (2 marks)

**Question 5** (continued)

(iv) With reference to the feedback scores from the nurses, draw a conclusion for the effectiveness of ABC in the Australian research. (3 marks)

**End of Section One**

# Section Two: Extended answers 30% (53 Marks)

This section has **two** parts.

**Part A:** This part has **one** compulsory question. Write your answer in the space provided.

**Part B:** Answer **one** question from a choice of **two**. Write your answer in the space provided.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you use these pages to continue an answer, indicate at the original answer where the answer is continued, i.e. give the page number.

Recommended working time for this section is 60 minutes.

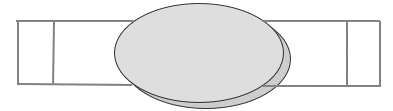
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**Part A**

This part has **one** compulsory question. Write your answer to Part A Question 6 on pages 22-26. When you have answered this question, turn to pages 27 to 28 to select either Question 7 or Question 8.

**Question 6 (20 marks)**

The original working memory model developed by Baddeley and Hitch (1974) is illustrated below:



**A**

**B**

**C**

As part of development of the model, Baddeley and Hitch conducted a range of experiments where they required participants to continually rehearse out loud a sequence of numbers while they also performed simple reasoning tasks.

Write an extended response that must include the following:

* List the **three** components of Baddeley and Hitch’s original working memory model. (3 marks)
* Outline the function of C in the model above. (3 marks)
* Describe the fourth feature added to the model in 2000. (6 marks)
* Explain the reason Baddeley and Hitch developed a model of working memory instead of relying on Atkinson and Shiffrin’s (1968) multi-store model to explain short term memory. (2 marks)
* State **two** reasons that researchers would choose to apply an experimental research design. (2 marks)
* Explain why it is important to control extraneous variables in experimental research. (4 marks)

# Part B 20% (33 marks)

# Answer one question from a choice of two.

# Indicate the question you will answer by ticking the box next to the question. Write your answers on pages 29-34,

# Question 7 (33 marks)

BF Skinner created an experiment to study behaviour known as “The Skinner Box”. There has been a great deal of research into behaviour, and the principles Skinner identified are applied in a range of contexts.

Tran is a young footballer who has noticed a serious decline in his memory. When he visits the doctor, he is asked a series of questions about his football career, especially about any heavy contact to his head. The doctor explains that there can be serious consequences from playing contact sports and there had been several studies linking changes in behaviour and emotion as a result of participation.

Dr Miya wanted to see if the principles related to the Skinner’s Box experiment could improve footballers’ recovery from memory loss. Her participants were 40 male football players between the ages of 20 and 25 diagnosed with memory loss. She gave one group of footballers a reward for each correct answer on a memory task and the other group did not receive any awards.

Dr Miya wanted to access government funding to support her new treatment. During the research, Dr Miya developed a positive relationship with the footballers who received the rewards. She gave them extra assistance with their cognitive tasks, and they achieved higher scores those in the other group.

Write an extended answer that demonstrates Science inquiry and Psychological understanding in relation to the scenario above.

In your answer you must:

* Outline the method used in the ‘Skinner Box’ experiments. (6 marks)
* State **two** findings from Skinner’s experiment. (2 marks)
* Evaluate the ethics of Skinner’s experiment in terms of the use of animals in research. (2 marks)
* Describe **two** ethical considerations modern researchers would be required to make for any study using animals. (6 marks)
* Based on your knowledge of the findings of the Skinner Box experiment, propose a directional hypothesis for Dr Miya’s study. (5 marks)
* Explain the ‘experimenter effect’ with reference to Dr Miya’s study. (4 marks)
* Name the cause of memory loss related to trauma. (1 mark)
* List **two** emotional effects associated with this condition. (2 marks)
* Describe the cause of memory loss associated with Alzheimer’s disease. (2 marks)
* Use appropriate psychological terminology (3 marks)

**or**

# Question 8 (33 marks)

Elio is struggling to pass Science tests at school, even though he loves the subject. His parents think his memory loss is because he spends too much time on social media and does not concentrate very well. They fine him $5 every time they see him using social media, which he finds very annoying. They tell him they will remove his household chores if he uses his social media for no more than one hour a day.

Elio is worried that he cannot meet their goal as he is on social media for a minimum of 5 hours per day. His psychologist proposes that they apply Skinner’s learning principles to help Elio spend less time on social media.

The psychologist suggests that they start using a fixed interval schedule of reinforcement for a period of one month. He is surprised at how positive Elio is. Elio says he was expecting to be punished every time he used social media.

Following one month of applying the schedule, Elio says he is definitely spending less time on social media. However, he is still struggling to remember the information he needs to pass his Science tests; especially when he is studying for a test that requires him to recall information from the previous term. Elio also informs the psychologist that he is happier now that he is using social media for less time per day.

The psychologist describes some research into Happiness and Social Media Use that collected data from students in Year 12 asking them to rate their happiness on a scale of 1–50 and then followed up with focus group interviews. The results showed that Year 12 students felt happier when using social media for fewer hours per day.

The psychologist commented that it is easier to control variables in an experiment as demand characteristics are easier to be minimised.

Write an extended answer that demonstrates Science inquiry and Psychological knowledge and understanding in relation to the scenario above

In your answer you must:

* Describe the role of reinforcers in learning in the context of Elio’s use of social media. (6 marks)
* Define the concept: ‘fixed interval schedule of reinforcement’ (2 marks)
* Explain how a fixed interval schedule could be applied to help Elio learn to spend less time on social media. (2 marks)
* Outline the role of the fine as a punishment imposed by Elio’s parents to change behaviour. (4 marks)
* Explain how proactive and retroactive interference could explain why Elio is forgetting the information he needs for his Science tests. (4 marks)
* Outline the method of data collection used to research Happiness and Social Media use. (3 marks)
* Describe how a focus group would be applied in this study. (4 marks)
* Explain the concept of ‘demand characteristics’ applied to this study. (3 marks)
* Describe how a ‘single blind procedure’ minimises the impact of demand characteristics. (2 marks)
* Use appropriate psychological terminology. (3 marks)

**End of question**

Supplementary page

Question number: