



ATAR course sample examination one

Question/Answer booklet

PSYCHOLOGY

Place one of your candidate identification labels in this box.
Ensure the label is straight and within the lines of this box.

WA student number: In figures

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In words

Time allowed for this paper

Reading time before commencing work: ten minutes
Working time: three hours

Number of additional
answer booklets used
(if applicable):

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.



Structure of this paper

Section	Number of questions available	Number of questions to be answered	Suggested working time (minutes)	Marks available	Percentage of examination
Section One Short answer	5	5	120	123	70
Section Two Extended answer					
Part A	1	1	60	23	10
Part B	2	1		33	20
Total					100

Instructions to candidates

- 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.
- Answer the questions according to the following instructions.

Sections One and Two Part A: 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 answer to the line spaces provided.

Section Two Part B: Consists of two questions. You must answer one question. Write your answer in this Question/Answer booklet preferably using a blue/black pen. Do not use erasable or gel pens.
- 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.
- 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.

See next page

Section One: Short Answer**70% (123 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.

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Question 1

(31 marks)

(a) Describe the key difference between sensation and perception.

(2 marks)

Greu is invited to an art show and is particularly interested in one piece of art, a square painting of a tall tree in the middle of a field.

(b) Perceiving a sensation is a six stage process. Complete the table below outlining the **six** stages that Greu experienced when viewing the artwork. (11 marks)

Process	Definition	Application to Greu
	Sensory receptors detect presence of a stimulus	
Transmission	Neural impulses leave sensory organs and travel to the brain	Electrochemical message of light stimulus is sent to the brain
		Greu chooses which parts of the stimuli to pay attention to (e.g. Greu focuses on the art and not the wall)
Organisation		
	Give meaning to sensory stimuli	

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Colin attends a cocktail party and is discussing psychology with Mwarga. He is very interested in the conversation until Mwarga starts talking about her dogs. Colin is not interested in dogs and realises the couple next to them are now talking in Farsi. He begins to wonder how long ago their conversation changed from English and no longer hears what Mwarga is saying as he listens to them.

- (c) Using your understanding of the role of attention in memory, name and outline the **two** types of attention Colin experiences. (4 marks)

One: _____

Two: _____

- (d) Using your understanding of the 'Cocktail party effect' and the example of Colin from part (c), describe what element of this scenario demonstrates the 'Cocktail party effect'. (2 marks)

Question 1 (continued)

In order to conduct research to test the cocktail party effect, Cherry had to select participants. Two possible methods of sampling participants include convenience sampling and random sampling.

- (e) Define convenience sampling and random sampling and state **one** strength **or one** limitation for each type of sampling. (4 marks)

Convenience sampling: _____

Strength or limitation (circle which)

Random sampling: _____

Strength or limitation (circle which)

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A Year 12 classroom teacher wanted her students to explore the phenomenon of the Cocktail party effect.

The teacher randomly allocated her 26 students into one of two groups. Students in each group were required to listen to two different stories simultaneously, read to them in both their left and right ears.

Group 1 were told to listen only to the story in their left ear. Group 2 were told to listen to the stories they heard in their left and right ears.

After the stories were read, the teacher gave each student a memory recall test to measure the amount of information they retained from the stories they heard.

- (f) (i) Identify the independent variable for this experiment. (1 mark)

- (ii) Propose a directional hypothesis for the teacher's experiment. (4 marks)

- (g) Propose **one** participant related extraneous variable that may affect the results and describe how it could affect the results of the experiment. (3 marks)

Variable: _____

Description: _____

Question 2

(20 marks)

A lot has been learnt about the brain through the study of Henry Molaison (HM).

- (a) Identify the type of study performed with patient HM and describe this type of research design. (3 marks)

- (b) Complete the table below stating **two** strengths and **two** limitations to the type of research design identified in part (a). (4 marks)

	Strength	Limitation
One		
Two		

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- (c) Explain the findings from the study of patient HM in regards to the role of the hippocampus in the formation of memories. (3 marks)

Until his death, HM consented to participate in a wide range of research studies.

- (d) State **three** pieces of information needed in order for informed consent to be given. (3 marks)

One: _____

Two: _____

Three: _____

- (e) Apply the ethical guideline of 'withdrawal rights' to HM and the studies he participated in. (3 marks)

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Question 2 (continued)

Darius is a taxi driver in London who suffers damage to his hippocampus.

- (f) Summarise why damage to Darius's hippocampus will cause issues in his chosen occupation. (4 marks)

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Question 3

(26 marks)

- (a) Define the terms 'recall', 'recognition' and 're-learning' in the context of memory. (3 marks)

Recall: _____

Recognition: _____

Re-learning: _____

- (b) State **one** similarity between recall, recognition and re-learning in memory. (1 mark)

In an experiment comparing serial, free and cued recall, 30 participants were presented a word list of 20 words. Five minutes after they had finished reading the word list, 10 participants were asked to use serial recall, 10 were asked to use free recall and 10 were asked to use cued recall to try to remember the word list. The table of the raw data can be seen below.

Participant	Number of words recalled		
	Serial recall	Free recall	Cued recall
1	3	9	15
2	5	11	15
3	4	7	15
4	2	14	17
5	6	11	13
6	5	8	15
7	6	9	16
8	3	7	17
9	4	11	14
10	2	3	16
Median			15

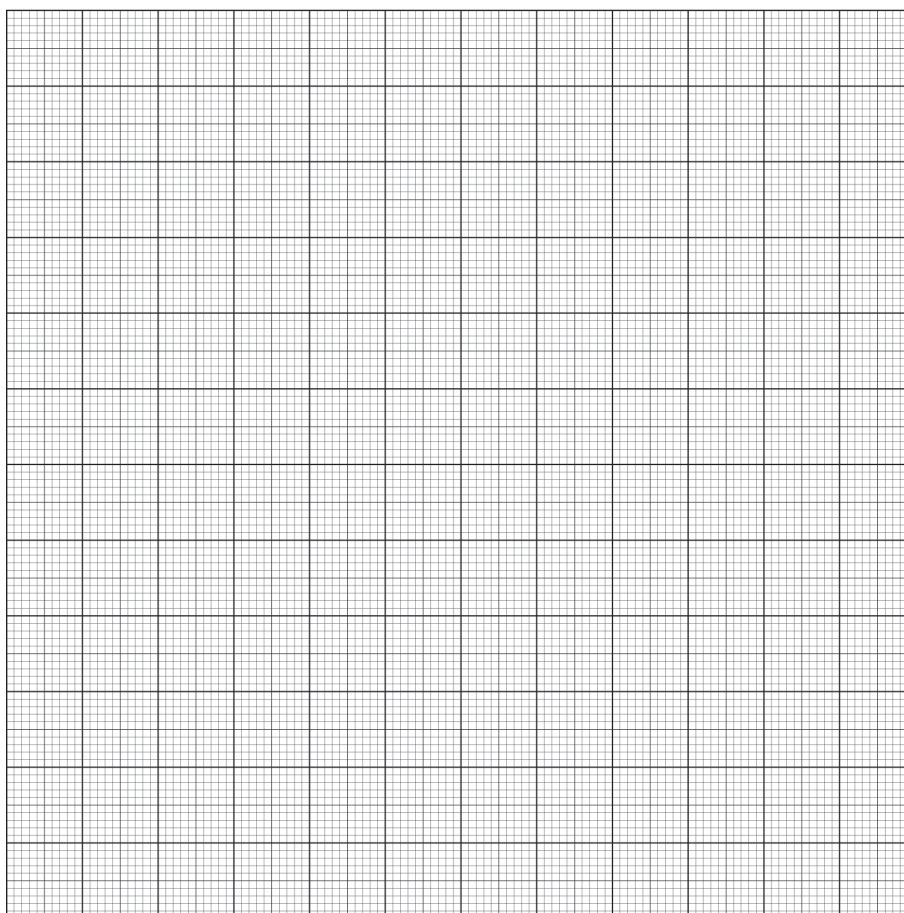
- (c) Calculate the median for the serial and free recall groups, record your answers in the table above. (2 marks)

See next page

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- (d) State why it can be useful to use the median as a measure of central tendency instead of the mean. (1 mark)

- (e) Construct an appropriate graph using the median scores from the completed table on page 12. (5 marks)



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A spare grid is provided at the end of this Question/Answer booklet. If you need to use it, cross out this attempt and indicate that you have redrawn it on the spare page.

Question 3 (continued)

- (f) Using your psychological knowledge and understanding of recall, propose why the cued recall group median is higher than the serial recall group median in the table on page 12. (3 marks)

Craik and Tulving (1975) created a study that aimed to investigate how deep and shallow processing affects memory recall.

- (g) Name and outline the **two** forms of deep processing. (4 marks)

One: _____

Two: _____

- (h) Recall **one** example of a question used in the method for each of the three levels of processing by Craik and Tulving (1975). (3 marks)

Shallow (structural): _____

Shallow (phenomic): _____

Deep: _____

- (i) Describe **two** limitations or criticisms of Craik and Tulving's (1975) study regarding depth of processing. (4 marks)

One: _____

Two: _____

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Question 4

(17 marks)

Jane was a highly motivated art student who had won several competitions and was proud of her accomplishments. While her family was moving to a new home, Jane lost her valuable art paints. At her new school, she struggled to regain her interest in art. Some days, she did not eat because she would forget to pack her lunchbox and, if she was very hungry, she would jump the school fence to go to the burger shop to buy food. She did not care when she got suspended from school and her parents found it difficult to understand why she was so unmotivated.

- (a) Using the above scenario, identify **two** deficiency needs from Maslow’s Hierarchy of Needs (1954), one from before she moved, and one from after she moved, and outline how each effected Jane’s motivation. (4 marks)

	Need	How it affected Jane’s motivation
Before		
After		

- (b) With reference to the scenario, suggest why Jane began to engage in dangerous activities such as jumping a fence. (2 marks)

Jane has not yet reached self-actualisation.

- (c) Describe what is meant by ‘self-actualisation’. (2 marks)

- (d) List **four** characteristics of a person who has reached self-actualisation according to Maslow (1954). (4 marks)

One: _____

Two: _____

Three: _____

Four: _____

Maslow expanded on the hierarchy of needs in 1970, adding three more needs; cognitive, aesthetic, and transcendence needs.

- (e) Demonstrate the position of cognitive needs in the hierarchy by stating the needs directly above and below it on Maslow's hierarchy. (2 marks)

Above: _____

Below: _____

- (f) Summarise **three** characteristics of an individual who has met their cognitive needs. (3 marks)

One: _____

Two: _____

Three: _____

Question 5

(29 marks)

He et al. (2020) conducted a study looking at the effect of restricting mobile phone use on a number of factors.

- (a) Identify **one** participant variable that was controlled in this study. (1 mark)

To measure mood, He et al. (2020) used the Positive and Negative Affect Schedule (PANAS), which is a 20-item scale for measuring the positive and negative effects of bedtime mobile phone use based on a 5-point Likert scale.

- (b) (i) State whether the data collection method is qualitative or quantitative and provide reasoning for your answer. (2 marks)

- (ii) Outline the difference between subjective and objective data, and state what type of data the PANAS collects. (3 marks)

- (iii) State **one** limitation of using a scale such as the PANAS. (1 mark)

See next page

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One sleep cycle usually repeats every 90 to 110 minutes.

- (c) (i) State what NREM stands for in the sleep cycle. (1 mark)

- (ii) Complete the table below identifying **four** stages of sleep and their characteristics. (8 marks)

Characteristics at stages of sleep			
Stage	Heart rate	Sleep state	Muscle tension
NREM 1	Normal		
NREM 2	Slowed		Relaxed
NREM 3		Deep sleep	Very relaxed, hard to wake

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Question 5 (continued)

Jillian and Habiba are both in Year 12 and are studying Psychology at school. Both feel they are suffering partial sleep deprivation and find the sleep part of the course very interesting. Following their learning, Jillian decides to improve her sleep hygiene while Habiba does not make any changes.

- (d) List **two** psychological and **two** physiological effects both girls may have experienced from partial sleep deprivation. (4 marks)

	Psychological effect	Physiological effect
One		
Two		

- (e) State **three** possible impacts on Habiba if she does not change her sleep behaviour and develops chronic sleep deprivation. (3 marks)

One: _____

Two: _____

Three: _____

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(f) Describe **three** techniques Jillian could utilise to improve her sleep hygiene. (6 marks)

One: _____

Two: _____

Three: _____

End of Section One

See next page

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Section Two: Extended answer**30% (56 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 the 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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See next page

Part A

10% (23 Marks)

This part has **one** compulsory question.

Write your answer to Part A on pages 26 to 30. When you have answered this question turn to pages 32 to 33 to select either Question 7 or Question 8.

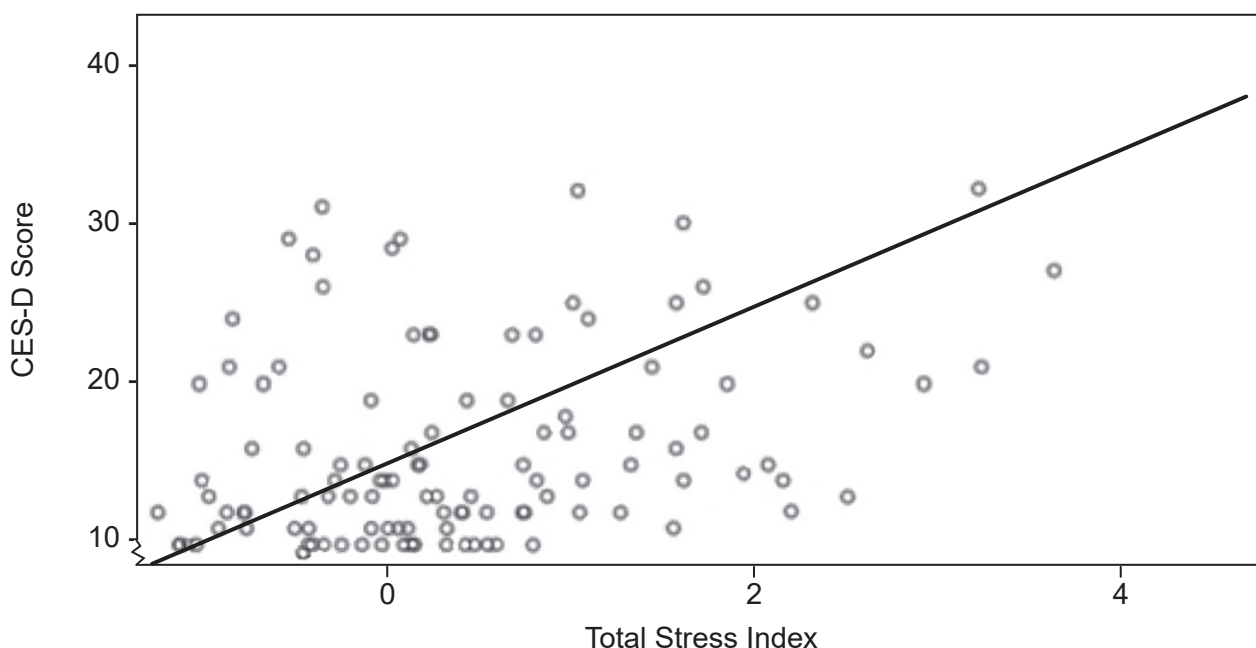
Question 6

(23 marks)

Allison, Mnatsakanova et al. (2019) investigated the relationship between occupational stress and depressive symptoms among police officers. The participants were 464 police officers from Buffalo, New York. The study was approved by the Internal Review Board of the State University of Buffalo.

A total stress index score was calculated for each police officer to measure the level of stress they experience as part of their occupation. The Centre for Epidemiologic Studies Depression (CES-D) scale was used. It contains 20 items that are self-rated on a four point Likert scale according to how often each symptom occurred in the past week. The sum of the scores represents the overall CES-D score between 0 to 60. A score of greater than 16 is considered indicative of depression. The scatterplot below shows the results for this study.

Figure 1: Predicted mean CES-D scores by police stress index



Notes: Adjusted for age, sex, race/ethnicity, alcohol intake and smoking status.

In a series of questionnaires used to gather qualitative data, police officers reported threat of harm (intentional and unintentional), excessive paper work and lack of support from a supervisor as their three main stressors.

See next page

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Write an extended answer that demonstrates Science inquiry and Psychological knowledge and understanding related to applications of psychology to health.

In your answer you must:

- define stress as identified by Selye (1936) and identify **two** types of stressors that police officers experience in their work (4 marks)
- refer to the General Adaptation Syndrome model (Selye, 1936,1983) to list and describe the **three** stages of stress a police officer may experience during a situation where physical harm is likely to occur (9 marks)
- the university's Internal Review Board is an example of an ethics committee. Describe the role of an ethics committee and outline **two** ethical guidelines that this committee would monitor during the study, stating how this would occur (6 marks)
- based on the data illustrated in Figure 1 on page 24, comment on the relationship between stress and depressive symptoms. (4 marks)

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See next page

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 answer on the pages provided following Question 8.

Question 7**(33 marks)**

Ms Kelly teaches a children's dance class. When teaching a new routine, Ms Kelly first demonstrates each of the steps one at a time while the children watch her. She then gets the children to copy her, and calls out the steps as the children put them together in sequence until they have learned the whole routine. This is exactly what she did in her students' first dance lesson.

At dance class the following week, Ms Kelly asked the students to tell her the steps they learned the previous week. None of the children could remember how the dance routine started.

Ms Kelly wanted to find out whether the use of a clapping strategy would improve her students' memory of dance sequences. She used her three dance classes as her sample. Two of the classes were taught using the clapping strategy and one was taught without it. She measured how many students remembered the sequence in the following lesson and interviewed the students about whether they thought the clapping strategy improved their memory. 100% of students stated that they thought the strategy helped but only 60% of them actually remembered the sequence. Ms Kelly considers advising all dance teachers to use the clapping strategy.

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

In your answer you must:

- discuss how the children will remember the dance sequence by applying Atkinson and Shiffrin's (1968) model for explaining memory (12 marks)
- state why interference occurs and explain how it may have contributed to the children forgetting the steps (4 marks)
- outline decay theory and state how decay could explain why the children forgot the steps (2 marks)
- identify the aim of Ms Kelly's research and develop a research question that would apply to her aim (2 marks)
- comment on how demand characteristics may have influenced the children's response to whether the clapping strategy improved their memory (5 marks)
- referring to the generalisability of the sample to the population, evaluate whether Ms Kelly should advise all dance teachers to use her strategy (5 marks)
- use appropriate psychological terminology. (3 marks)

or

See next page

Question 8

(33 marks)

In 1961, Bandura, Ross and Ross conducted a study to determine how aggressive behaviours developed in children.

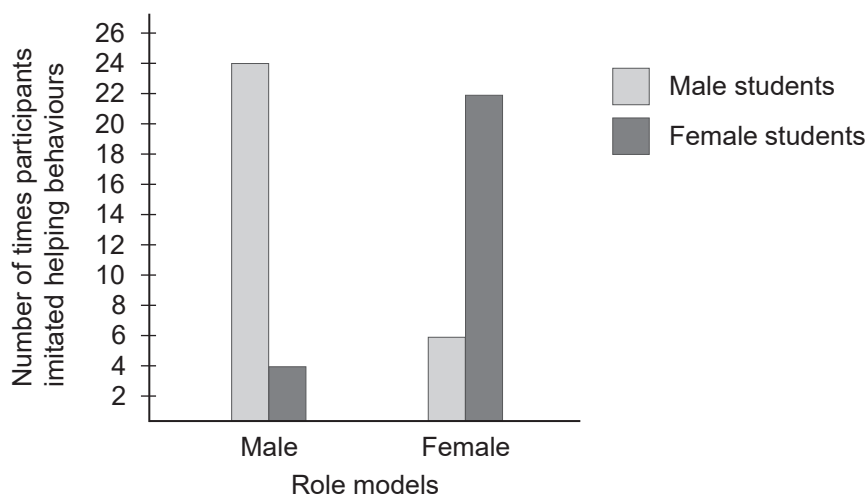
Mr Harrold, a primary school principal who was familiar with Bandura, Ross and Ross's study, wanted to adapt this study to explore the effects of role modelling in mentor relationships between students and teachers. He wanted to explore how he could best pair up students with teachers to build effective mentoring relationships.

He developed an experiment using students from his primary school, consisting of 10 boys and 10 girls. Parental consent was gained for each student.

Both male and female teachers from the primary school volunteered and were used as role models to engage in a variety of physical and verbal helping and non-helping behaviours for students to observe. When the teachers engaged in helping behaviours, Mr Harrold rewarded them for their actions. Other teachers on duty were asked to observe the number of times students would imitate these helping behaviours (physical and verbal) around the school.

The results of Mr Harrold's study are shown in the graph below.

Figure 2: The effects of male and female role models on the imitation of helping behaviours



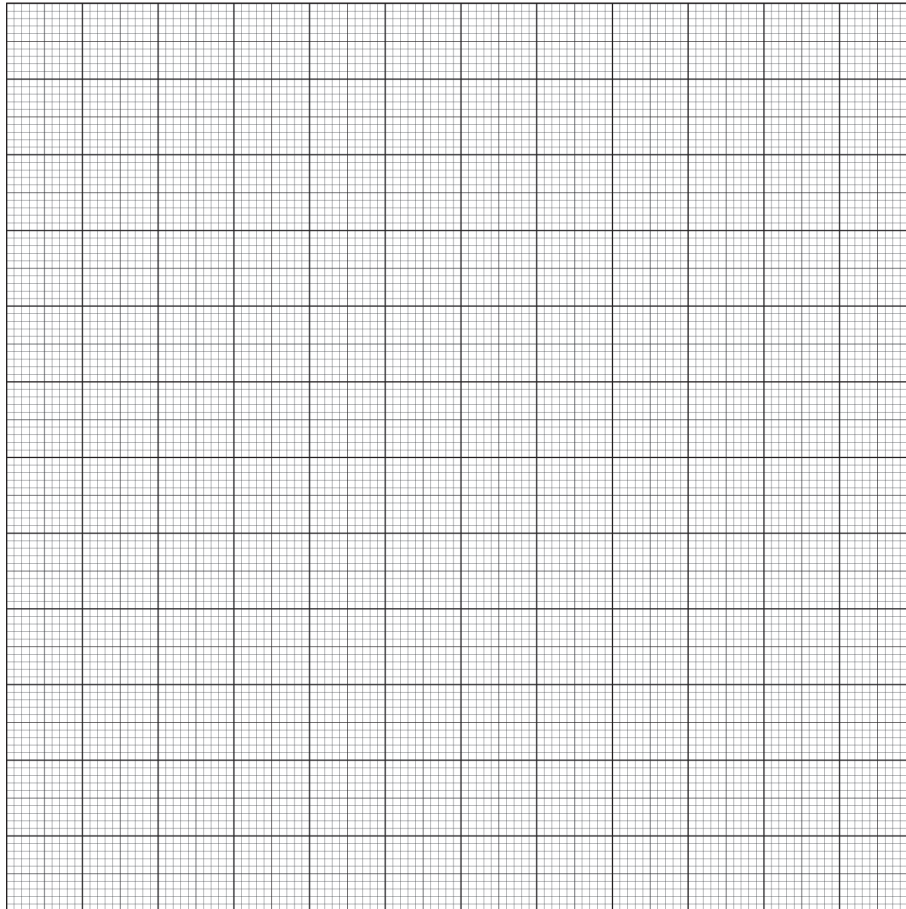
Write an extended answer that demonstrates Science inquiry and Psychological knowledge and understanding in relation to the scenario above.

In your answer you must:

- define the process of observational learning and describe **two** key processes necessary for observational learning to occur (5 marks)
- state the hypothesis for the 'Bobo doll' study conducted by Bandura, Ross and Ross (1961) and describe **two** key findings from this research (6 marks)
- compare the number of imitative behaviours in Mr Harrold's study for males observing a male role model to males observing a female role model (3 marks)
- outline the role of positive and negative reinforcers in operant conditioning (4 marks)
- propose how vicarious reinforcement could be used to increase the incidence of helping behaviors for all students (3 marks)
- state what a token economy is and evaluate the application of this method from the Principal by referring to **one** advantage and **one** disadvantage of its use (5 marks)
- describe how a token economy could be applied by the Principal to improve kind behaviour (4 marks)
- use appropriate psychological terminology. (3 marks)

End of questions

Spare grid for question 3(e)



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ACKNOWLEDGEMENTS

- Question 2(a)** Adapted from: OpenStax. (n.d.). [Diagram of cross section of brain]. *Parts of the Brain Involved with Memory*. Retrieved May, 2023, from https://pressbooks-dev.oer.hawaii.edu/psychology/wp-content/uploads/sites/30/2017/09/CNX_Psych_08_02_Brain.jpg
Used under Creative Commons Attribution 4.0 International licence.
- Question 5** Paragraphs 1 and 2 information from: He, J., Tu, Z., Xiao, L., et al. (2020, February). Effect of Restricting Bedtime Mobile Phone use on Sleep, Arousal, Mood, and Working Memory: A Randomized Pilot Trial. *PLoS One*, 15(2). Retrieved February, 2023, from <https://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0228756>
- Question 6** Paragraphs 1 and 2 used with permission of Emerald Publishing Limited, adapted from: Allison, P., Mnatsakanova, A., McCanlies, E., et al. (2019, November). Police Stress and Depressive Symptoms: Role of Coping and Hardiness. *Policing*, 43(2), pp. 247–261; permission conveyed through Copyright Clearance Center, Inc.
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Paragraph 3 information from: Allison, P., Mnatsakanova, A., McCanlies, E., et al. (2019, November). Police Stress and Depressive Symptoms: Role of Coping and Hardiness. *Policing*, 43(2), pp. 247–261. Retrieved February, 2023, from <https://pubmed.ncbi.nlm.nih.gov/32714068/>
- Question 7** Table information from: Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of Aggression Through Imitation of Aggressive Models. *Journal of Abnormal and Social Psychology*, 63(3), 575–582. Retrieved February, 2023, from <https://psychclassics.yorku.ca/Bandura/bobo.htm>

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