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**Psychology**

**UNIT 3**

**EXAMINATION**

**2021**

**INSERT SCHOOL LOGO**

**Name:**

**Teacher**:

Time allowed for this paper

Reading/planning time before commencing work: ten minutes

Working time for paper: three hours

Material required/recommended for this paper

To be provided by the supervisor

This Question/Answer Booklet

To be provided by the candidate

Standard materials:pens (blue/black preferred), pencils (including coloured), sharpener, eraser, correction fluid/tape, ruler, and highlighters

Special items: non-programmable calculators approved for use in the WACE examinations

Important note to candidates

No other materials may be taken into the examination room. It is your responsibility to ensure that you do not have any unauthorised notes or other items of a non-personal nature in the examination room. 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  Research Methods | 2 | 2 | 30 | 33 | 20 |
| Section Two  Short Answer | 8 | 8 | 90 | 93 | 55 |
| Section Three  Extended Answer | 2 | 2 | 60 | 49 | 25 |
|  |  |  | Total | 175 | 100 |

# Instructions to candidates

1. The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2021.* Sitting this examination implies that you agree to abide by these rules.
2. Write your answers in this Question/Answer Booklet preferably using a blue/black pen. Do not use erasable or gel pens.
3. Answer the questions according to the following instructions.

Sections One and Two: Write your answers in this Question/Answer booklet. Wherever possible, confine your answer to the line spaces provided.

Section Three: Consists of two questions. You must answer both questions.

1. You must be careful to confine your responses to the specific questions asked and to follow any instructions that are specific to a particular question.

1. Supplementary pages for planning/continuing your answer to a question 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: Research Methods 20% (35 marks)

This section has two 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, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 30 minutes

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Question 1 (20 marks)

Forgetfulness and cognitive decline is often associated with ageing. A group of scientists from Stanford University conducted a clinical study to test the effect of taking low doses of donepezil (a drug that is used to delay memory loss in patients with Alzheimer’s disease) to help improve cognitive abilities of healthy elderly individuals without Alzheimer’s disease and minimize the impact of normal ageing on memory. The clinical study enlisted 186 healthy participants between 60 to 75 years old. All participants did not have any psychological nor physical impairments that could affect their memory.

a) Describe **two** key characteristics of the sample. (2 marks)

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Half of the participants were randomly selected to take a pill containing 5-mg of donepezil once daily for 1 year while the other half were provided with a placebo. Different memory tests were given to all participants to measure the effect on their cognitive abilities.

b) State **one** reason for randomly selecting participants who will receive the drug or placebo. (1 mark)

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c) Using a placebo to measure the placebo effect is a key element of the standard protocol for testing experimental drugs or treatments.

i. Describe the ‘placebo effect’ (2 marks)

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ii. Briefly explain why it is important to measure the placebo effect in a clinical study such as the one described above. (1 mark)

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iii. Identify the participant’s right that is breached when testing for the placebo effect.

(1 mark)

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iv. State how the researchers can compensate for this breach to meet ethical standards. (1 mark)

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d) Write an operational hypothesis for this clinical study. (4 marks)

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e) Outline a method for minimizing errors due to both experimenter and participant bias in the described clinical study. (2 marks)

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f) Standard protocol for measuring the effectiveness of a drug requires clinical monitoring up to at least 1 year after the start of treatment. The data collected by the donepezil clinical study described above are outlined in Table 1.

Table 1. Monitored outcomes assessing the effectiveness of donepezil tablets used in the clinical study.

|  |  |
| --- | --- |
| **Type of Data collected** | **When data was collected** |
| Participant description of their reaction to the drug (questionnaire responses and personal assessment) | Weekly journal entries from day 1 until week 54 |
| Test Scores from:   * Word list Recall * Name-face Recall * Everyday Problem Solving Test for functional abilities | Prior to start of treatment;  at 14 weeks and 52 weeks after start of treatment |
| Clinical assessment of number and severity of adverse psychological and physiological reactions such as insomnia, loss of appetite, irregular heart rate, high blood pressure | Weekly from week 1 to week 54 |

i. Give **one** example of an objective data collected by the clinical study.

(1 mark)

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ii. State **one** strength of using objective data in clinical studies. (1 mark)

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iii. Give **one** example of qualitative data collected by the clinical study and explain why this data is important. (2 marks)

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g) Beneficence is a key principle in the code of ethics. It requires researchers and practitioners to ensure that the risks participants are exposed to be given greater importance than the benefits that science or society gains from the study or treatment.

Describe **two** ways that the researchers could use to ensure that beneficence is practiced in this clinical study. (2 marks)

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Question 2 (13 marks)

In December 2020, a group of researchers from the University of Pennsylvania conducted a survey of America’s public attitude towards compulsory Covid-19 vaccination. The survey was conducted online between Sept 14 – 27, 2020 with 2,730 respondents aged 18 years and older coming from diverse educational, economic, ethnic backgrounds and belonging to different political affiliations.

a) Outline **two** ways that the described diversity in the sample would impact on the statistical relevance of the findings. (2 marks)

i. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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b) Evaluate the use of an online survey as a method for collecting data. (2 marks)

i. Advantage:

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ii. Disadvantage:

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c) An example of a question in the survey is given below:

|  |  |  |
| --- | --- | --- |
| If an FDA-approved Covid-19 vaccine was available at no cost, would you agree to be vaccinated? (✓ Tick the box of your answer) |  Yes |  No |

State **one** limitation of this manner of collecting data. (1 mark)

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The survey examined how compulsory vaccination of children differed from adults among respondents who were affiliated with specific political parties. The results are summarized   
in Table 2.

Table 2. Acceptability of compulsory vaccination for children and adults based on political party affiliation of respondents.

|  |  |  |
| --- | --- | --- |
| Political Party Affiliation | Percentage of respondents who found compulsory vaccination **ACCEPTABLE** | |
| Vaccination of children | Vaccination of adults |
| Democrat | 70.2 | 60.8 |
| Republican | 27.4 | 22.6 |
| Independent | 44.0 | 34.0 |

d) Describe the difference in acceptability when comparing vaccinating adults with vaccinating children. (1 mark)

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e) Can the researchers conclude that a participant’s political affiliation is causing the difference in attitude?

(Encircle your Answer) YES NO (1 mark)

Explain your answer. (2 marks)

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f) Based on the results in Table 2 above, provide a conclusion to this study. (2 marks)

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h) Describe **one** way that researchers could ensure that the survey data collected is valid.  
 (2 marks)

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**End of Section One (Research Methods)**

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**Section Two: Short Answer 55% (108 Marks)**

This section has eight (8) 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 are for planning or continuing an answer. If you use these pages, indicate at the original answer where the answer is continued, i.e. give the page number.

Suggested working time: 90 minutes

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Question 3 (8 marks)

a) Compare the psychological effects of serotonin and dopamine by stating **one** similarity and **one** difference.

Similarity: (1 mark)

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Difference: (1 marks)

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b) Neural transmission is described as an electro-chemical process. Describe the part of neural transmission that is an electrical process and the part that is a chemical process.

Electrical process: (1 marks)

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Chemical process: (1 marks)

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c) Describe the re-uptake process of neural transmission. (2 marks)

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d) Explain how a drug that acts antagonistically affects the nervous system.  
 (2 marks)

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Question 4 (13 marks)

One of the activities that Year 7 students perform in Science is testing the effect of detergents on plant growth. The teacher discusses the activity, provides an activity sheet containing instructions and lets the students perform the activity in groups of three or four.

1. Describe how each of the lobes of Year 7 students’ brains would be responding as they perform the science activity. (3 marks)

|  |  |
| --- | --- |
| **Lobe of the brain** | **Description of response** |
| Frontal lobe |  |
| Parietal lobe |  |
| Temporal lobe |  |

b) Identify the **two** main parts of the peripheral nervous system and outline how each part functions as the Year 7 students perform the activity. (4 marks)

|  |  |
| --- | --- |
| **Part of the peripheral nervous system** | **How it functions during the science activity** |
|  |  |
|  |  |

c) One Year 7 student accidentally broke a beaker. He instantaneously moved his hand away as it came in contact with a sharp piece and he felt pain as it pierced his skin.

Describe the role of his spinal cord during this incident. (2 marks)

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d) State the function of Wernicke’s and Broca’s area and explain how each area helps students communicate with each other. (4 marks)

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Question 5 (19 marks)

a) Laine was sitting on her patio looking at the cloudless blue sky and the gentle sway of the leaves on the trees. She could hear the chirping of the birds. It was a beautiful summer day.

Identify the types of encoding that occurred when she took in her surroundings in the sensory register, justify your answer. (2 marks)

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b) It was getting too hot and Laine went into her kitchen to make herself a tall glass of iced tea.

i. Using Atkinson and Shiffrin’s multi-store model of memory, explain how Laine’s short term memory would allow her to perform the task of making iced tea. (4 marks)

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ii. Using Baddeley and Hitch’s (1974) Working Memory model, explain how her working memory would allow her to perform the task of making iced tea. (4 marks)

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b) A science teacher was marking test papers and found that her students got high marks for questions that required them to name structures in diagrams but performed poorly in questions that required them to apply concepts to scenarios.

i. What rehearsal technique are her students most likely using when studying? (1 mark)

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ii. What rehearsal technique should her students use in order to improve their marks with application questions? Explain why this technique would give better results. (2 marks)

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c) Students generally perform better in multiple choice tests than in short answer tests. Explain why this is so. (4 marks)

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d) Outline a study strategy that Year 12 students can use to prevent interference of irrelevant information and enhance retrieval of relevant information. (2 marks)

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Question 6 (14 marks)

a) A dog training school used classical conditioning to train dogs. Explain how the elements of classical conditioning would be used to toilet train dogs. (5 marks)

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b) Another dog training school used operant conditioning to teach dogs new behaviours. Explain how the elements of operant conditioning would be used to toilet train a dog.

(5 marks)

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c) One dog owner was convinced that classical conditioning was better than operant conditioning when toilet training dogs. Provide **two** reasons to support the dog owner’s preference.

(2 marks)

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d) The Borneo Orangutan Survival Foundation in Sabah, Malaysia runs a jungle survival school for orphaned orangutans. These baby orangutans do not have parents to teach them survival skills to prepare them for life in the wild. They learn jungle survival skills from human caretakers. One such lesson is coconut cracking. The caretaker demonstrates how to crack open a coconut as the baby orangutans watch. Each baby orangutan is then given a coconut during meal time that they need to open on their own so they can have their meal.

i. Identify the learning theory used by caretakers to teach orphaned orangutans survival skills. (1 mark)

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ii. According to the learning theory identified in d) i., explain the role of the caretaker.

(1 mark)

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Question 7 (8 marks)

a) A father was exhausted after a particularly challenging day in the office. He found himself arriving home without any recollection of how he drove home. Which type of long term memory was he using to get home? (1 mark)

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b) Some survivors of trauma never forget the experience whereas some end up suppressing the memory and not remember large periods of their life. Which type of long term memory would store this experience? (1 mark)

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c) Counselling Psychologists use cognitive behaviour therapy (CBT ) to help trauma survivors continue with their life after the ordeal.

i. Define cognitive behaviour therapy. Your definition should include the key premise of CBT. (2 marks)

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ii. Outline how the counselling psychologist will conduct CBT sessions to help a trauma survivor deal with his/her fear. (4 marks)

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Question 8 (6 marks)

Pia and Chrissy are best friends but are having a disagreement. Pia feels that Chrissy is getting too involved with a boy who is not good for her. Pia is sure that Chrissy is becoming too self-centred and is neglecting her friends who do not want to see her hurt. Chrissy feels that Pia does not understand her and is being too selfish.

a) Describe how Pia and Chrissy can arrive at an integrative solution to their conflict. (2 marks)

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b) A close friend of both girls learned about what was going on. She invited them over to her house and acted as the third party to help Pia and Chrissy overcome their conflict.

i. State **one** advantage of using a third party in conflict resolution. (1 mark)

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ii. A third party can provide a distributive or an imposed solution to a conflict. Differentiate a distributive from an imposed solution. (2 marks)

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iii. The conflict between the girls escalated to the point of causing adverse psychological effects on each one. Intervention from a counsellor was required to resolve the conflict.

List **two** advantages of using a counsellor over a mediator. (1 mark)

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Question 9 (13 marks)

A longitudinal study from Minnesota University found that children who showed secure attachment at 1-year old became self-reliant, self-confident adults with positive self-image. Children with insecure attachment had low levels of self-esteem, became anxious when situations changed, and were highly dependent on others frequently needing reassurance.

a) Bowlby suggested that the mother-child relationship acts as the prototype for future relationships through the formation of an internal working model. Based on the findings from the longitudinal study described above, contrast the internal working model of children with secure and insecure attachments by providing the missing information in the table below.  
 (9 marks)

|  |  |  |
| --- | --- | --- |
| **Feature of the Internal Working Model** | **Children with**  **Secure attachment** | **Children with**  **Insecure attachment** |
|  |  |  |
|  |  |  |
|  |  |  |

b) Children whose caregivers were spending more than 8 hours a day working had much higher cases of insecure attachments than those with at least one caregiver who was able to stay at home. Provide a possible explanation for this difference. (2 marks)

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c) Briefly describe an authoritative parenting style and state how it will impact on a child who showed an insecure attachment at 12 months old. (2 marks)

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Question 10 (12 marks)

In a pre-school playground, two boys are playing in the sand pit with their toy trucks while two girls are playing in a play-kitchen nearby. A transcript of their conversation is given below:

|  |  |
| --- | --- |
| Two girls sitting around a small table in a play kitchen area: | |
| Girl 1: | I will cook pasta today. |
| Girl 2: | I love pasta! My mom makes the yummiest spaghetti! |
| Girl 1: | Mine too! |
| Two boys playing in the sand pit: | |
| Boy 1: | My dad drives a big truck. A big cow can fit in it! |
| Boy 2: | My dad drives a very big truck in the mines! The wheels are sooo big, it is bigger than our house! |
| Boy 1: | My dad drove a truck once that pulled 5 houses strung together! |

a) Using the above scenario, compare and explain the two communication styles used by the boys and girls.

(4 marks)

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b) According to Chomsky, how did the children acquire their ability to use language to communicate? (4 marks)

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c) According to Bruner’s theory, how would conversations with parents and peers encourage language development? (4 marks)

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**End of Section Two (Short Answers)**

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Section Three: Extended Answer 25% (56 Marks)

Section Three consists of two (2) questions. You must answer both questions.

Supplementary pages for planning/continuing your answers to questions are provided at the end of this Question/Answer booklet. If you used 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: 60 minutes.

Write your answer to Question 11 on pages 29-34. When you have answered this question, turn to page 35 for Question 12 and write your answer on pages 36-40.

**Question 11 (25 marks)**

Research conducted by the National Institute of Mental Health (NIMH) found that mental health issues are caused by a close interaction between one’s biology, physical environment and social factors. Genetic studies have associated certain inherited genes with some psychological disorders like anxiety, depression, bipolar disorder, schizophrenia and attention deficit hyperactivity disorder. However, environmental and social factors are just as influential.

Using your psychological understanding of biological influences and behaviour modification, discuss how some biological and social factors impact on an individual’s mental health. Your response should:

* Explain how an understanding of heredity and knowing one’s family history can contribute positively to one’s mental health. (3 marks)
* Discuss how the release of the hormones adrenaline and noradrenaline will impact on one’s mental health. (3 marks)
* Explain the effect of alcohol consumption on one’s mental health (3 marks)
* Describe how parents can use positive and negative reinforcements to develop healthy behaviours in their children. (5 marks)
* Describe how teachers can use token economies to instil positive behaviours in their students. (5 marks)
* State an advantage and a disadvantage of using token economies to modify behaviour  
   (2 marks)
* Quality of response (3 marks)

Question number: \_\_\_\_\_\_\_\_

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**Question 12 (24 marks)**

The Royal foundation of the Duke and Duchess of Cambridge funded an extensive public survey to assess public attitudes towards the early years of a child’s development. The main goal was to identify the gap between public perception and scientific evidence on early childhood development. The survey found that only 24% of parents recognise the specific importance of the period between conception to 18 months of their child’s development. However, extensive scientific evidence from brain imaging techniques and cognitive studies show that brain development during this time is faster than any other period of development.

How can the gap between scientific evidence and public perception be addressed? You were asked to design an information campaign to help improve public perception of the early years and make it more aligned with the science.

In constructing your response you should apply your psychological understanding of attachment, persuasive communication and communication styles by including the following:

* Describe how Harlow’s experiment on attachment supports the importance of the early years of a child’s development. (4 marks)
* Identify and define each element of persuasive communication (3 marks)
* Explain, with an example, how each element will be used to ensure that the information campaign will be successful. (6 marks)
* Differentiate communication styles that use elaborated and restricted codes (4 marks)
* Explain how elaborated and restricted codes can be used in the information campaign  
   (4 marks)
* Quality of response (3 marks)

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