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**Psychology**

**UNIT 3**

**EXAMINATION**

**2020**



**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 | 34 | 20 |
| Section Two  Short Answer | 8 | 8 | 90 | 112 | 55 |
| Section Three  Extended Answer | 2 | 2 | 60 | 60 | 25 |
|  |  |  | Total | 206 | 100 |

# Instructions to candidates

1. The rules for the conduct of Western Australian external examinations are detailed in the *Year 12 Information Handbook 2020.* 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% (34 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 (15 marks)

Merlin loved to bake and would take cake orders from family, friends and referrals from friends. She was thinking of turning her hobby into a small business and starting a Facebook page to advertise her products. Before doing that, she wanted to find out what her customers’ responses were to her cakes so that she can plan for what materials and equipment she needed. She wanted to streamline her products and focus on cakes that were popular with customers. First she made a tally of the cakes she sold in the past year. Her data is presented in the following table.

Table 1. Number of cakes sold per month

|  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Month** | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| **Number of cakes sold** | 60 | 22 | 14 | 25 | 12 | 16 | 49 | 15 | 20 | 38 | 26 | 75 |

a) i. Would you consider Merlin’s approach as scientific on non-scientific? (1 mark)

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ii. Explain your answer. (2 marks)

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**Question 1** continued

b) What type of data did Merlin collect? (1 mark)

Circle your answer: Qualitative OR Quantitative

c) State **one** limitation of the data she has collected. (1 mark)

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d) Merlin wanted to have a visual representation of the data she collected. Present her results as a graph in the gridline below. (5 marks)

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e) Briefly describe **two** main findings or trends from her data that she can use to make informed decisions about her business plan. (2 marks)

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f) Give **one** example of qualitative data that Merlin can collect to help her with her business plan. (1 mark)

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g) State **two** pieces of additional information that the qualitative data will give which her previous results did not provide. (2 marks)

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Question 2 (19 marks)



Leaves and fruits of *Ginkgo biloba* tree.

*Ginkgo biloba* (pictured above) is popularly marketed as a powerful medicinal herb that is believed to improve cognitive functions like attention and memory, and promote a healthy brain. It is often sold on its own as a health supplement or mixed with energy drinks. Dr Siva wanted to include this drug in his medical practice but found that scientific evidence about its benefits were conflicting. He decided to carry out his own investigation using patients residing in his area of practice.

Dr Siva recruited 500 patients between 60 to 80 years old who were in the early stages of dementia and 500 healthy volunteers of the same age group. All participants had volunteered to take part in the study after being informed about what the study was about.

Half of the participants were asked to take one capsule of *Ginkgo biloba* while the other half was given a placebo, taken daily. Both the participants and Dr Siva did not know who were taking the *Ginkgo biloba* capsules or the placebo. The Clinical Dementia Rating Scale was used to measure cognitive impairment before treatment started and 1 year after.

a) Identify the research design used by Dr Siva. (1 mark)

Circle the correct answer:

Independent Measures Repeated Measures Matched Pairs

b) What is a placebo? (1 mark)

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c) Briefly explain what the placebo effect is and identify the specific technique used in Dr Siva’s research to address the placebo effect. (2 marks)

i. Placebo effect: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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ii. Technique used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) Why was it necessary for both participants and Dr Siva to be unaware of who was getting the placebo or *Ginkgo biloba* capsules? (2 marks)

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e) Provide an operational hypothesis for Dr Siva’s research. (4 marks)

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f) Identify and describe **two** ways that Dr Siva demonstrated to protect participants’ rights. (4 marks)

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

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The results of Dr Siva’s clinical trial are summarized in the table below.

Table 1. Average clinical dementia ratings of 60-80 year old participants taking *Ginkgo biloba* capsules or placebo once daily for 1 year. A rating of 0 represents no cognitive impairment while a score of 3 means severe cognitive impairment.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sample description** | Average Rating in the Clinical Dementia Scale | | Statistical Significance |
| Prior to treatment | 1 year after treatment |
| Participants with early stage dementia:   * Taking *Ginkgo biloba* capsules | 1.8 | 1.0 | p < 0.05 |
| * Taking the placebo | 2.0 | 1.7 | p > 0.05 |
| Healthy participants:   * taking *Ginkgo biloba* capsules | 0.5 | 0.3 | p > 0.05 |
| * taking the placebo | 0.2 | 0.4 | p > 0.05 |

g) State the purpose of measuring the Clinical Dementia Rating of participants prior to treatment. (1 mark)

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h) Provide a conclusion for Dr Siva’s study based on the statistical results presented in   
Table 1. (4 marks)

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**End of Section One**

**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 (13 marks)

1. Andy is excited as he gets ready to bungee jump from a platform above a rugged cliff.

i. Identify a hormone flooding his brain. (1 mark)

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ii. Describe how his somatic nervous system is responding to the sensory information he is getting in his excited state. (2 marks)

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1. He looks down from the bungee platform at the sheer drop below. He could feel the wind blowing against him as he balances himself. He could hear the rustle of the tree branches swaying in the wind.

Outline how each of the following parts of his brain is responding to sensory stimuli from his surroundings by filling in the missing information in the following table. (8 marks)

|  |  |  |
| --- | --- | --- |
| **Lobe of the brain** | **Area of cortex** | **Description of response** |
|  | Primary visual cortex |  |
|  |  | Controls the muscles of his neck allowing him to bend/turn his head so he could look down |
| Parietal lobe |  |  |
|  |  | Receives the sound waves from the rustling of tree branches and interprets the information |

1. After an exciting day, Andy goes home. He has a light relaxing meal and spends some time watching his favourite TV show before going to bed. Describe how his autonomic nervous system would be responding. (2 marks)

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Question 4 (13 marks)

a) Fluoxetine is a drug for the treatment of depression. Its trademark name is ‘Prozac” and it is a Selective Serotonin Reuptake Inhibitor (SSRI).

i. What type of chemical is serotonin? (1 mark)

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ii. State **one** function of serotonin. (1 mark)

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iii. Describe how SSRI’s like Prozac would affect neural transmission of serotonin.

(3 marks)

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iv. Would SSRI’s be classified as a psychoactive drug?

(Circle your answer) YES NO (1 mark)

Explain your answer. (2 marks)

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b) Describe how neurotransmitters work in communicating messages between neurons at a synapse; including what occurs at the post-synaptic neuron if the neurotransmitter is excitatory and inhibitory.   
 (5 marks)

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Question 5 (18 marks)

a) How do psychologists define ‘learning’? (1 mark)

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b) Identify **two** similarities between classical and operant conditioning. (2 marks)

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

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

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c) Contrast classical and operant conditioning by filling in the missing information: (8 marks)

|  |  |  |
| --- | --- | --- |
|  | **Classical conditioning** | **Operant Conditioning** |
| Role of the learner  (passive or active)  (2 marks) |  |  |
| Type of behaviour (voluntary or involuntary)  (2 marks) |  |  |
| Associations formed during conditioning  (2 marks) |  |  |
| How learning is demonstrated after conditioning  (2 marks) |  |  |

d) A primary school teacher used classical conditioning in her mindfulness lessons to teach children how to relax and calm down after recess and lunch. She would play some piano music with gentle wave sounds in the background when the children came into the classroom and instructed the children to close their eyes, take deep calming breaths and allow their body to relax. After the term, the teacher went on holiday staying in a resort near the beach. She found that the gentle sound of the waves made her feel very relaxed and calm. Any sound of flowing water seemed to soothe her. A friend told her that ‘stimulus generalisation’ has occurred.

Explain what ‘stimulus generalisation’ is and state the behaviour that supports its occurrence. (2 marks)

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e) Jiun has a 15-year old son and 13-year old daughter who are always arguing. Their constant bickering was getting on her nerves such that she was becoming more stressed when she is at home than at work. She decided to use positive and negative punishment to change their behaviour.

i. How would punishment change the behaviour of Jiun’s children? (1 mark)

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ii. Give **one** example each of positive punishment and negative punishment that Jiun can use to change her children’s behaviour.

Example of positive punishment: (1 mark)

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Example of negative punishment: (1 mark)

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iii. Jiun read an article about parenting teenagers which promoted the use of reinforcement rather than punishment to improve behaviour. Provide a positive and negative reinforcement strategy that Jiun can use to change her children’s behaviour.

Positive reinforcement: (1 mark)

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Negative reinforcement: (1 mark)

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Question 6 (21 marks)

a) The Banksia Hill Juvenile Detention Centre in Canning Vale, Western Australia is a prison facility for offenders aged between 10 to 18 years old. The Centre uses a token economies program to encourage pro-social behaviour.

i. Define ‘token economies’ and identify the learning theory it is based on. (3 marks)

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ii. Vandalism of the facilities is a common problem in the detention centre. Describe a token economies program that can be used to decrease vandalism and encourage pro-social behaviour (3 marks)

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iii. State **one** advantage of using token economies instead of simply giving rewards for good behaviour. (1 mark)

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iv. State **one** disadvantage of a token economies program. (1 mark)

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b) Mina is highly competitive and an over-achiever. She is taking 6 ATAR courses and has been getting good marks but she feels she can do better. She is becoming extremely anxious about the coming WACE exams and is getting severe panic attacks to the point that she gets terrified of coming to school especially during tests or exams. Her parents took her to a psychologist to help her handle her anxiety. The psychologist used cognitive behaviour therapy (CBT) to help Mina manage her anxiety.

i. Describe the cognitive and behavioural components of CBT.

Cognitive component: (2 marks)

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Behavioural component: (2 marks)

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ii. Provide an outline of a CBT program for Mina. (3 marks)

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1. Samantha has a five-year-old son Eden, Eden likes to play outside in the front garden where his bother often hangs out with his friends. Eden’s brother Jake is eighteen years old and has recently got his first girlfriend. Jakes girlfriend, Lucy, often takes some time to play with Eden and Eden really likes spending time with her. Jake often hangs out with her and his friends, in the front driveway as he fixes up his moped on the driveway.

Eden has now been pestering his mum about getting him a moped. Explain what learning has occurred for Eden to now want a moped.

1. Identify the learning theory behind Eden now wanting a moped: (1 mark)

ii) Explain the mental processes that have to take place for this type of learning to occur, applying each process to the scenario. (5 marks)

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Question 7 (14 marks)

In the 1950’s and 1960’s Harry Harlow conducted an experiment on baby Rhesus monkeys separated from their mother at birth.

a. Describe Harlow’s experiment including its aim, dependent and independent variables, procedure and results. (6 marks)

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b) Using Ainsworth’s attachment types, identify the possible type of attachment an orphaned child from Bucharest would have shown towards each caregiver and briefly describe how the child would behave in the separation and reunion steps of the Strange Situation method.

i. Attachment and behaviour towards the caregiver in the orphanage: (3 marks)

Attachment type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Behaviour during separation:

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Behaviour during reunion:

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ii. Attachment and behaviour towards foster parents who have provided high quality care for a year or more: (3 marks)

Attachment type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Behaviour during separation:

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Behaviour during reunion:

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iii. What did Ainsworth attribute the differences in attachment types to? (2 marks)

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Question 8 (9 marks)

**Better attitudes needed on road sharing**

The depth of ill feeling and conflict on both sides is startling. The attitude from some drivers that cyclists have no right to bi in their path is matched by that from some cyclists who ignore the rules, especially when riding in a group.

The health of riding rather than sitting in a car are obvious and every car that is replaced on the road by a bike helps reduce traffic congestion and pollution.

What is needed more urgently in Perth is a better attitude from drivers and cyclists about sharing the road and dropping the combative approach.

Source: The West Australian, 16 October 2014

1. Outline two types of solutions to resolve this conflict (4 marks)

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1. Describe three possible techniques to resolve this conflict between car drivers and cyclists. (6 marks)

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Question 9 (10 marks)

a) Kayli is almost two years old and starting to talk. Her parents disagree about which approach to take to support her language development. Her father is more inclined towards Chomsky’s theory of language development while her mother is a strong believer of Bruner’s view.

i. Explain Chomsky’s theory of language development and describe what Kayli’s father would do to ensure that she acquires the necessary language skills.

Explanation of Chomsky’s theory (2 marks)

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Description of what Kayli’s father would do. (1 mark)

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ii. Explain Bruner’s view about language development and describe what Kayli’s mother would do to help Kayli gain language skills.

Explanation of Bruner’s theory (2 marks)

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Description of what Kayli’s mother would do. (1 mark)

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b) Kayli’s parents also differ in their communication styles, often leading to disagreements. Differentiate how her parents’ gender would impact on their communication style by identifying and describing a characteristic of each. (4 marks)

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Question 10 (14 marks)

WA Premier Mark McGowan and Education Minister Sue Ellery have announced from 2020 that the government will ban students from using mobile phones, tablets, smart watches in all public schools in a major push to reduce distraction and focus on learning.

The Psychology students of a metropolitan high school were asked to mount a campaign for their school to persuade students and parents to support the ban.

a) Identify **two** routes of persuasion that their campaign could use and specify one key characteristic of the audience that would make them more suited to each route. (4 marks)

i. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ route of persuasion:

Key characteristic of the audience:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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ii. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ route of persuasion:

Key characteristic of the audience:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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b) The students were debating where to focus their efforts - making short videos or posters for their campaign. Give **one** advantage and **one** disadvantage of using each medium for persuading the target audience. (4 marks)

|  |  |  |
| --- | --- | --- |
| **Campaign Medium** | **Advantage** | **Disadvantage** |
| Posters |  |  |
| Short videos |  |  |

c) The students selected three speakers to address each cohort at their year group’s assembly. For each speaker, briefly describe what the content of their message should emphasize, relevant to each source of message, to be most effective at persuading the audience. Provide an example to support your description.

i. the school psychologist (2 marks)

Description of the content of the message:

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Example:

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ii. a parent (2 marks)

Description of the content of the message:

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Example:

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iii. a student leader (2 marks)

Description of the content of the message:

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**End of Section Two**

Section Three: Extended Answer 25% (60 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 36 for Question 12 and write your answer on pages 37-42.

**Question 11 (31 marks)**

Lowell was listening to Aboriginal elders speaking Nyungar and was intrigued by the harmony of the words and its strong connection to the land and nature. He learned that the word Noongar means ‘a person of the south-west of Western Australia’ and that Noongar history was recorded orally through stories handed down from one generation to the next. Nyungar is the official language of Noongar people and central to the survival of its unique culture. He wanted to learn how to communicate in Nyungar.

* Identify the areas of Lowell’s brain that have a specific role in using language for communication and discuss how these areas function when he reads, hears and speaks Nyungar words.
* Using Atkinson and Shiffrin’s multi-stage model of memory, describe how the different stores of memory are used to help him remember new and previously learned Nyungar words.
* Explain how the principles of observational learning can help Lowell communicate in Nyungar better.

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

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**Question 12 (29 marks)**

Patna is 10 years old. She has joined her local sports team and her behaviour is causing a great

deal of concern among parents. Patna demonstrates increasingly aggressive behaviour when

she or the other children make a mistake. She does not participate in bonding activities with her

team members and does not demonstrate any affection for them. Recently, when one of the

team was injured during a game, Patna simply walked away while the other children rushed to

help their teammate. This was notable because Patna was closest to the injured child.

John Bowlby was a theorist who explained the importance of attachment in the socialisation

process. Use your knowledge of Bowlby’s theory of attachment to demonstrate your

understanding of the socialisation processes observed within families and how these might

relate to Patna’s behaviour.

In addition, use your knowledge of parenting styles to explain how Patna’s parents might

address her behaviour.

In your answer refer to the above scenario, making sure you:

* define the psychological terms ‘socialisation’ and ‘attachment’
* describe Bowlby’s theory of attachment
* explain how Bowlby describes the contribution of attachment to the socialisation process and
* refer to the relevant model
* use Bowlby’s theory to explain Patna’s behaviour. Illustrate your explanation with one example from the scenario
* name and explain the three parenting styles identified in the Psychology syllabus
* outline how a parent from each style would deal with Patna’s behaviour.

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**ACKNOWLEDGEMENTS**

**Question 2**

Picture of leaves and fruits of *Ginkgo biloba* tree.

Photo by **Natasha de Vere & Col Ford** <https://www.flickr.com/photos/col_and_tasha/5064964397>

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