Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**MAKRING KEY**

Year 12 ATAR Psychology

Assessment Task 1 – Test 1

51 marks (5% Response)

**OUTCOMES:**

|  |  |
| --- | --- |
| *Outcome 1:* | *Psychological understandings* |
| *Outcome 3:* | *Applying and relating psychological understandings* |
| *Outcome 4:* | *Communication in psychology* |

**ALLOCATED TIME FOR THE TASK:**

* *You will have one period to complete the test in class*.

**INSTRUCTIONS:**

* *Attempt all questions*
* *No notes, files etc. to be accessed during the test*

|  |  |
| --- | --- |
| **Section One – Research Methods** | |
| **Total** | **/ 22** |

|  |  |
| --- | --- |
| **Section Two – Short Answer** | |
| Question 1 – The nervous system | / 24 |
| Question 2 – Brain parts and language | / 9 |
| Question 3 – Drugs and Neurotransmitters | /10 |
| **Total** | **/ 43** |

|  |  |
| --- | --- |
| **Total Marks** | |
| Section 1 – Research Methods | / 20 |
| Section 2 – Short Answer Section | / 43 |
| **Assessment Task 1 – Total Marks** | **/ 62** |

Teacher comment: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Research Methods Section**

**Question One (8 marks)**

At a University, 40 first year Psychology students participated in a study examining the effects of alcohol on typing accuracy. Students were given a typing test to complete, with 20 students given alcohol before the typing test and 20 students were not given any alcohol.

At the end of the test, the total number of mistakes was calculated for each condition.

a) Operationalise the independent variable (1 mark)

**2 standard glasses of wine or 2 pints of beer or 1 shot of vodka – a specific measurable amount of alcohol give**

b) Operationalise the dependant variable (1 mark)

**Typing accuracy measured by number of typing mistakes in twenty minutes in a typing test**

c) Identify two confounding variables in relation to the participants in the study (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Alcohol tolerance – how much alcohol they have previously drunk, metabolism, weight etc | 1 |
| Amount of previous experience with a computer / typing | 1 |

d) Write an operationalised hypothesis for this study (4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Population, Operationalised IV / DV, Direction/Prediction, Compare to a control | 1 |
| It is hypothesised that students who drink 2 shots of tequila will show a lower amount of typing mistakes as measured by a twenty minute typing accuracy test than students who have not drunk any alcohol prior. | 1 |

**Question Two (12 marks)**

Dr Almasi has been working with a young repeated offender named Yasmin, Yasmin has been undergoing various talking therapies and therapeutic techniques with Dr Almasi to try to rehabilitate her behaviour. Recently, they have been trialling the use of ADHD medication which has helped reduce Yasmin’s angry outbursts as measured by interviews, observations and self-report data.

**Dr Almasi concluded that ADHD medication is an effective treatment for anger issues in teenagers.**

a) Is this conclusion considered scientific or non-scientific and why (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| No – the research does not follow a method | 1 |

b) State the data collection method used for this type of research (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Case study | 1 |

(c) Describe the two **main** sources of error in this piece of research and how Dr Ahmasi could overcome the error in the future. (2 mark)

|  |  |
| --- | --- |
| **Source of Error** | **Way to overcome it** |
| The conclusion drawn was a cause and effect relationship which is impossible from a case study / non-experimental piece of research | Set up an experiment with a control condition and experimental condition |
| Too many confounding variables to look at a clear relationship between the two variables being investigated (talking therapies, therapeutic techniques) | Try to isolate the variables by using each therapy or ADHD medication at a separate time and track their relationships with the angry behaviours |

d) State whether Dr Ahmasi’s research was ecologically valid and generalisable to a larger population and explain your reasoning. (4 marks)

i. Ecological validity:

|  |  |
| --- | --- |
| **Description** | **Marks** |
| The ecological validity is high as the behaviours measured are the real-life reflection of Yasmins everyday life | 1 |

i. Generalisable to the larger population:

|  |  |
| --- | --- |
| **Description** | **Marks** |
| The results have low generalisability to a larger population as the population is too small (under 100). | 1 |

e) Identify and describe how Dr Almasi would have had to follow two ethical considerations

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Identify (1) Describe (1)  Informed consent –  Ensure that participants (and parents if under 18) are given an information letter than outlines the purpose of the research and the procedure. Participants and parents would then sign a consent for  Voluntary Participants –  Participants are not coerced to take part in the study, they take part on their own free will  Confidentiality –  All participant identifiers are kept anonymous through the use of codes instead of names.  Right to Withdraw –  All participants can withdraw themselves and their data from the study at any time without any negative implications and without giving a reason  Deception -  Where possible, the true purpose and procedure is made clear to participants, unless it will impact the results of the study.  Debrief –  Ensure that after the research the participants are explained the results and true purpose of the study is revealed (if it was a single-blind study) and ensure they leave the study int he same psychological / phsyical state they arrived  Do no harm | 1 |

**Section Two**

**Question Three (24 marks)**

a) The human nervous system is a complex structure comprised of numerous structures and organs.

NERVOUS

SYSTEM

A)

D)

F)Autonomic

E)

C)

B)

H)

G)

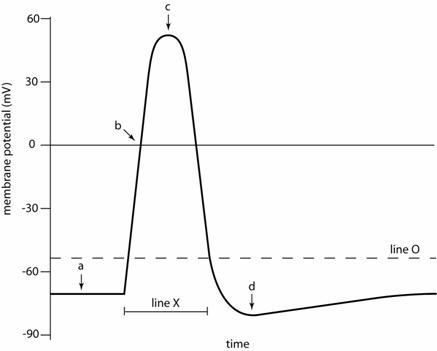
Identify and describe the role of the nervous systems identified below: (*6 marks*)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| E – Somatic nervous system  To receive sensory information and allows conscious control of the skeletal muscles | **1-2** |
| G – Parasympathetic nervous system  responsible for the body's rest and **digestion** response when the **body** is relaxed, resting, or feeding. | 1-2 |
| H – Sympathetic nervous system  directs the body's rapid involuntary response to dangerous or stressful situations. | 1-2 |

b) Explain how an individual is able to determine the size and (2 marks)

|  |  |
| --- | --- |
| **Descriptor** | **Mark** |
| The action potential is known as an all or nothing event |  |

c) Label the three parts of the graph below, using the labels provided. (3 marks)



|  |  |  |
| --- | --- | --- |
| Resting (polarised) | Hyperpolarised | Action Potential |

Part A: Resting Membrane potential

Part C: Action Potential

Part D: Hyperpolarise

d) Explain how a neural message crosses the synapse. Include an explanation of the processes of excitation and inhibition at the synapse. (5 marks)

|  |  |
| --- | --- |
| Description | Marks |
| Action potential arrives at the axon terminal causing the vesicles which contain the neurotransmitter to move towards the cell membrane of the pre-synaptic neuron (1)  The vesicles release the neurotransmitters into the synapse where they diffuse across he synaptic gap (1)  Neurotransmitters bind to the specific receptor that it fits with on the post-synaptic neuron (1)  If the neurotransmitter is excitatory it depolarises the membrane and makes it more likely for an action potential to occur (1)  If the neurotransmitter is inhibitory it polarises the membrane even more and makes it harder for an action potential to occur (1) | 1-5 |
|  |  |

e) Tom is walking to his letterbox bare-footed. He does not notice the nail on the path and places his foot squarely on the sharp end. Explain Tom’s neural response fully in the space below, including why Tom *did not fall over* when he stood on the nail. Include all relevant terminology in your response. (8 *marks*)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Tom |  |

**Question Four (9 marks)**

After a motorcycle accident Saskia was left with a traumatic brain injury. Doctors notes that she was able to understand what was being communicated to her but she was unable to articulate words and sentences properly.

i. Identify the structure of the brain that is damaged (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Brocas area | 1 |

ii. In the correct order identify and describe the functions of each of the structures of the brain that allow sound and language to be processed and communicated. (8 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Identify (1) and Describe (1)  Primary auditory cortex: perceives tone and pitch  Wernicke’s area: responsible for the comprehension of speech – putting meaning to the language  Broca’s area: responsible for the planning and organising of articulation of speech  Primary motor cortex: responsible for directing the muscles of the mouth, tongue, lips to produce language | 1-8 |

**Question Five (10 marks)**

1. Name two neurotransmitters and state two function it helps regulate (4 marks)

|  |  |
| --- | --- |
| **Neurotransmitters** | **Two Effect of neurotransmitter** |
| Serotonin | Pleasure, Relaxation |
| Dopamine | Motivation , Working Memory |
| Noradrenaline | Determination, Alertness |

1. Sam is 29-year-old who is out partying with his friends, he accepts a drink from a stranger at the party and in around 30 minutes he starts to notice he doesn’t feel normal. His heart has started racing, his vision becomes shaky, the trees around him start to look like they have faces and the wind running through the leaves start to sound like they are speaking to him. He tries to explain to his friend what he is seeing and hearing to check if he is going crazy but as soon as his friend replies, it sounds like whale noises and Sam cannot understand him.

i. What class of psychoactive drug is Sam likely to be on? (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Hallucinogen |  |

ii. Justify your answer to part (b)(i) using evidence from the scenario (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| “trees around him start to look like they have faces and the wind running through the leaves start to sound like they are speaking to him” |  |

iii. Describe two ways in which drugs may impact neural transmission (4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Identify (1) Describe (1)  Antagonist:  Blocks the neurotransmitter form attaching to the receptor thus stopping the neurotransmitter causing an impact on the post-synaptic neurotransmitter  Agonist:  Attaches to the receptor of the neurotransmitter and creates the same response that the neurotransmitter would, thus increasing the effect of the neurotransmitter  Reuptake Inhibitor:  Stops the reuptake of the neurotransmitter and thus the neurotransmitter can still have an impact on the post-synaptic neuron and for longer | 1-4 |