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**PSYCHOLOGY**

**UNITS 3 & 4**

**2024**

**MARKING GUIDE**

***TIME ALLOWED FOR THIS PAPER***

Reading time before commencing work: Ten minutes

Working time for the paper: 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, pencils, eraser or correction fluid, ruler, highlighter.
* Special items: Calculators satisfying the conditions set by the SCSA for this subject.

***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 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.

**Question 1 (25 marks)**

New cars now have a 13-inch monitor on the dashboard that shows a GPS-map as well as notifications from linked devices like mobile phones and online streaming services. A group of psychologists are concerned that adding this monitor on the dashboard will distract drivers and blind them to what they should be focusing on the road.

a) Identify the type of attention used when driving a car. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Divided attention | 1 |
| **Total** | **1** |

b) Identify the **three** processes of perception and describe how each process would influence driving behaviour. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Selection (1) – helps the driver prioritize relevant information from irrelevant ones helping them focus on what is on the road/ spot possible hazards (1). | 1-2 |
| Organization (1) – Driver organizes information from the road and the dashboard assigning one set of information as the main figure (e.g. the road) and the other as background (e.g. dashboard or monitor) (1) . | 1-2 |
| Interpretation (1) – driver gives meaning and provides an appropriate response to stimuli such as slowing down when approaching a roundabout road/ spot a petrol station when fuel gauge starts to flash red. (1) | 1-2 |
| Accept other relevant examples of driver behaviour |  |
| **Total** | **6** |

c) The psychologists decided to conduct an experiment to test the impact of these electronic monitors and the constant stream of information they provide on driver perception and driving performance. Snowball sampling was used to recruit one hundred 25 to 45-year-old drivers with only minor traffic infringements and had not been involved in any major accident.

i. Explain how participants are selected using snowball sampling. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| A small group of participants (focus group) are recruited as volunteer | 1 |
| These initial ‘recruits’ provide referrals for other participants to volunteer/ join the study. | 1 |
| **Total** | **2** |

ii. Provide **one** strength and **one** limitation of snowball sampling. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Strength (any ONE of the following):   * Easy access to participants * Less ethical constraints – more likely willing to participate | 1 |
| Limitation (any ONE of the following):   * Sample is biased. * Sample is not representative of the population | 1 |
| **Total** | **1** |

d) Each driver drove through a 10-km road with simulated driving hazards like blind corners, intersections, an e-scooter, a motorbike, a cyclist, and a pedestrian cross their path as they were driving along. The errors they committed were counted and used to measure driver perception and driving performance. Half of the participants drove a car with only standard driving information from the dashboard such as driving speed, fuel level, and engine temperature. The other half were asked to drive a car with the standard car information on the dashboard as well as a 13-inch monitor constantly displaying GPS information, notifications from their mobile phone, news items, and their music playlist.

i. Construct a directional research hypothesis for the psychologists’ experiment.

(4 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Response should include the following:  population (1), independent variables – experimental & control (1), prediction/direction (1), dependent/measured variable (1) | 1-4 |
| Example of a 4-mark response:  It is hypothesised that drivers/ 25 to 45-year-old drivers who drive cars with 13-inch monitors on the dashboard will commit more/less errors in perception / have worse/better driving performance than those who drive cars with a standard dashboard as measured by a driving hazard simulator. |  |
| **Total** | **4** |

ii. Identify the experimental and control conditions and state how participants should be allocated to each group. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Experimental condition – car with standard dashboard + 13-inch monitor streaming information from GPS, playlist, SMS | 1 |
| Control condition – car with standard dashboard information | 1 |
| Participants are allocated randomly to either the experimental or control condition. | 1 |
| **Total** | **3** |

e) The psychologists informed participants that they were testing car performance rather than driver perception and were not aware of what type of car they would be driving prior to the driving test. Although this information was withheld, the ethics committee approved their research proposal.

Provide **two** reasons for the ethics committee’s approval to withhold this information from participants. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| It will not cause any harm to participants | 1 |
| Knowing true purpose/type of car is a confounding variable/ source of error, resulting in invalid driver perception/performance. | 1 |
| **Total** | **2** |

f) A summary of the results is given in the table below.

|  |  |
| --- | --- |
| **Car Dashboard Description** | **Mean Number of Driving Errors Committed** |
| Standard Dashboard Information provided | 5 |
| Standard Dashboard information plus 13-in monitor displaying GPS and streamed notifications | 13 |

i. Provide a conclusion for the study based on the given results. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Mean no. of driving errors is higher for drivers who drove cars with additional streamed information from 13-in monitor on the dashboard (1) as compared to cars with a standard dashboard. (1) | 1-2 |
| Note: Accept opposite statement.  Response should specify the experimental and control condition to get full marks. |  |
| **Total** | **2** |

ii. Explain results of this experiment in relation to the perception process and how driver perception impacts on driving performance. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| The brain selects/organises/ interprets/perceives information that is relevant to the current situation. | 1 |
| Critical information can be lost if there are too many stimuli to attend to | 1 |
| This resulted in errors in decision making, lowering driving performance. | 1 |
| Also accept: Drivers could focus on /select the wrong stimuli from devices missing safety hazards on the road. |  |
| **Total** | **3** |

**Question 2** **(17 marks)**

a) Dingoes are native predators in Australia that can sometimes prey on sheep, particularly young lambs. This can cause significant economic losses for farmers. Traditional methods like fencing have not always been completely effective. Dingoes have a strong sense of smell and are especially sensitive to the smell of sheep wool. They are also known to be wary of loud noises as it startles them activating their flight response of running away.

A farmer who took Psychology in Year 12 and knows about classical conditioning decided to develop a plan to stop dingoes from predating on his lambs using the principles of classical conditioning.

i. Specify the unconditioned stimulus (UCS) and the unconditioned response (UCR) that the farmer would focus on. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Unconditioned Stimulus – loud startling noise | 1 |
| Unconditioned Response – get startled and run away / flight response | 1 |
| **Total** | **2** |

ii. Identify a neutral stimulus (NS) that the farmer can use given the information about dingoes. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Neutral Stimulus – smell of sheep wool | 1 |
| **Total** | **1** |

iii. Describe how the dingoes would be made to associate the unconditioned stimulus (UCS) with the neutral stimulus (NS). (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Place sheep wool / dispensers of sheep scent around the farm or area where lambs are grazing / herded | 1 |
| Every time a dingo approaches (because they are attracted to sheep scent), immediately produce a loud startling sound to activate their flight response (run away) | 1 |
| The dingoes will associate sheep scent with the loud startling sound/ flight response (running away). | 1 |
| **Total** | **3** |

iv. State what the conditioned stimulus (CS) and conditioned response (CR) should be that would save the farmer’s lambs from getting eaten by dingoes. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Conditioned Stimulus – Sheep scent | 1 |
| Conditioned Response – get startled and run away / flight response | 1 |
| **Total** | **2** |

v. How can the farmer ensure that his conditioning method is humane and will not harm the dingoes or other animals? Your response should identify the appropriate ethical practice when dealing with animals. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Use refinement in his method / Refine his conditioning method. | 1 |
| Any ONE of the following:   * The sound chosen should be startling but should not cause lasting harm to the dingoes (i.e. will not destroy their hearing). * The intensity and frequency of the loud sound would need to be carefully monitored to avoid unnecessary stress on the dingoes and other animals in the vicinity. | 1 |
| **Total** | **2** |

b) Juan was 5 years old when he was attacked by a dingo puppy when they were camping in the bush with his family. He does not have any memory of what happened but as he grew older, he found that he has an irrational fear of dogs, especially those that look like dingoes.

i. Identify the theory of forgetting that would explain why Juan does not remember being attacked. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Motivated forgetting | 1 |
| **Total** | **1** |

ii. Provide a reason for Juan’s phobia of dogs when he was older. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| He had generalised his fear of dingoes to dogs because of their similar features. | 1 |
| **Total** | **1** |

iii. Name and describe a treatment that would help Juan overcome his phobia of dogs.   
 (5 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Systematic desensitization / Graded exposure | 1 |
| He will be asked to make a hierarchy of objects or situations that activates his fear response from least fearful to most fearful. | 1 |
| He learns relaxation strategies like breathing techniques, meditation, positive self-talk | 1 |
| He is exposed to the first object situation in his hierarchy list and made to practice a relaxation strategy until his fear response is controlled. | 1 |
| He progresses to the next item in his list and practices relaxation as soon as he feels anxious. He continues until he reaches the top of the list (e.g pat a dog) and is able to manage his fear. | 1 |
| **Total** | **5** |

**Question 3 (16 marks)**

The Numbat Project of Perth Zoo aims to reintroduce zoo-bred numbats into their natural habitat – the forests in the southwest of Western Australia. Numbats are an endangered species found exclusively in the Southwest of WA with only about a thousand left in the wild. One part of the program is predator awareness where numbats learn to run and hide when they see and hear birds of prey such as owls, crows, and eagles. The zookeeper would fly kites in the shape of a bird of prey over the enclosure and/or play a recording of its bird call. If the numbat that is out in the open does not run and hide, they squirt a water pistol to direct a blast of water near the numbat to make it run and hide. When the numbat runs and hides as soon as the bird of prey shape appears above or hears the bird call, it does not get squirted.

a) Describe the **three**-phase model of operant conditioning. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Antecedent (1) is the stimulus or event that sets the stage for the behaviour to occur (1). | 1-2 |
| Behaviour (1) is the observable/voluntary action that the learner performs in response to the antecedent (1). | 1-2 |
| Consequence (1) is the event that follows the behaviour and influences whether the behaviour is repeated or stopped in the future. (1) | 1-2 |
| **Total** | **6** |

b) Explain how each phase of the model was applied in teaching the numbat to respond appropriately to the presence of predatory birds. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| The antecedent is the numbat’s dislike of getting squirted with water and would want to avoid it. OR  The bird call sound / bird silhouette flying above. | 1 |
| The numbat runs and hides (voluntary observable action) when it hears the bird call or sees the bird silhouette flying above. | 1 |
| Consequence - the numbat does not get squirted with water. | 1 |
| **Total** | **3** |

c) Name the type of consequence that the squirts of water represent and explain its effect on the Numbat’s behaviour. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Negative Reinforcement | 1 |
| It takes away the undesirable consequence of getting squirted with water (1), increasing/reinforcing the behaviour of running and hiding (1). | 1-2 |
| **Total** | **3** |

d) Zookeepers know that the best way to maintain learned behaviour is by using a *variable ratio schedule of reinforcement*. They initially tested the effectiveness of providing a variable schedule of reinforcement using a Skinner box (see Figure 2). They used the bird call sound and its favourite food (termites) to maintain the behaviour of running and hiding whenever it hears the bird call.

Burrow-like enclosure for hiding.

Food Dispenser

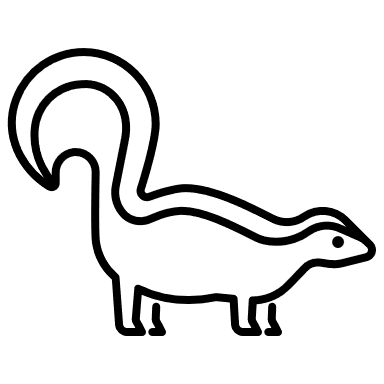


Figure 1. Diagram of a Skinner Box for training numbats.

i. Explain what a *variable ratio* schedule of reinforcement is. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Giving reinforcement at random numbers of behaviour presentations | 1 |
| **Total** | **1** |

ii. Describe a procedure that would test the *variable ratio schedule of reinforcement* using the scenario given above. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| After the numbat has learned to run to the burrow to find food when a bird call is sounded (1), the bird call is sounded but food may or may not be dispensed. | 1-2 |
| Sometimes the food is dispensed after two bird calls are sounded, at other times food is given after 4 bird calls and at other times after 5 bird calls (provides an example of random reinforcement) | 1 |
| **Total** | **3** |

**Question 4** **(21 marks)**

a) Referring to Deci and Ryan’s Self Determination Theory, identify and outline the **three** psychological needs that influence motivation. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Autonomy (1) – feeling in control of outcomes, having a choice or being given the freedom to make a choice (1). | 1-2 |
| Competence (1) – feeling capable of doing a task or being effective when taking action (1). | 1-2 |
| Relatedness (1) – feeling connected to significant other or sharing a bond with other individuals who matter to you (1). | 1-2 |
| **Total** | **6** |

b) Marco is struggling to stay motivated in his history class. He finds the lectures dull and sees little relevance to the material they are learning.

Apply your understanding of the psychological needs for motivation described by the Self Determination Theory (Deci and Ryan, 1985) to explain why Marco might be lacking motivation. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| (Autonomy) Marco does not have a choice on what historical events to learn about / He does not have the freedom to study historical events that interest him. | 1 |
| (Competence) He gets low marks in assessments, and he does not feel that he will become good in history. | 1 |
| (Relatedness) He does not have any friends who he can discuss lessons / study with. | 1 |
| Accept other relevant responses. |  |
| **Total** | **3** |

c) Elma is in the same history class as Marco and is the top student. She enjoys historical fiction novels and spends a lot of time researching historical periods related to the books she reads. She has even tried her hand at writing a historical short story.

i. Distinguish between extrinsic and intrinsic motivation. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Extrinsic Motivation - driven by external factors, such as rewards or pressures separate from the activity itself. | 1 |
| Intrinsic Motivation - driven by internal factors that provide inherent satisfaction or enjoyment from doing the activity/task. | 1 |
| **Total** | **2** |

ii. Explain how Elma's interest in history could be extrinsically and intrinsically motivated.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Marks** |
| Extrinsic Motivation (Any one of the following)   * She researches to impress her friends or book club members with her knowledge. * She hopes to get a higher grade on a school assignment related to historical fiction. * She does the research to avoid disappointing her parents who value historical learning | 1 |
| Intrinsic Motivation (Any one of the following)   * She finds the research process itself interesting and intellectually stimulating. * She enjoys learning new things about history and deepening her understanding of the context of the novels. * The act of researching fulfills her curiosity and desire for knowledge. | 1 |
| Accept other relevant responses. |  |
| **Total** | **2** |

d) Sami is the head baker in a bakeshop owned by a large multinational company. The company pays him competitive rates and he enjoys the teamwork and friendship in the bakeshop. He feels that the challenges in his workplace allow him to improve his baking skills and grow as a person. He takes pride in baking products that help his customers celebrate special occasions or give comfort at times of sadness. This brings him much joy and fulfillment.

i. List the first **two** *deficiency needs* in Maslow’s hierarchy of needs (1954) that must be met before any of the other needs could be met. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Physiological needs | 1 |
| Safety needs | 1 |
| **Total** | **2** |
|  |  |

ii. Explain how Sami has met **one** of the higher deficiency needs in Maslow’s hierarchy of needs (1954) that are based on relationships he has made with others. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Love and belonging needs were met. | 1 |
| His sense of belonging is fulfilled as he enjoys the teamwork and friendship in the bakeshop. | 1 |
| **Total** | **2** |

iii. Define ‘self-actualization’ according to Maslow’s theory and provide **one** piece of evidence from the scenario that shows Sami has attained self-actualization. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Self-actualization is the process of attaining one’s full potential. | 1 |
| His work brings him joy and fulfillment. | 1 |
| **Total** | **2** |

e) After a few years of working in the bakeshop, he finds that he feels guilty about having to dispose of baked goods at the end of the day even though they are still perfectly good to eat. The company’s policy specifies that their products are baked fresh daily, and they are not allowed to drop their prices for remaining products to facilitate sales. Sami wrote to the company executives and was able to obtain permission to donate unsold baked goods to his local charity after the bakery closes for the day.

Referring to the scenario in e) above, name and define the growth need that was not fulfilled for Sami prior to the change in company policies. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Transcendence needs | 1 |
| The desire for meaning/ purpose/ personal growth, finding connection to something larger than oneself. | 1 |
| **Total** | **2** |

**Question 5** **(19 marks)**

a) Complete the description of the model of subjective wellbeing proposed by Diener (1984) by providing the missing information in the table. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| (i) Refers to the positive and negative emotions you have experienced in your life. (1)  The positive emotions should outweigh the negative emotions to attain a healthy wellbeing. (1) | 1-2 |
| (ii) Life satisfaction | 1 |
| **Total** | **3** |

b) John and Dean have lost their jobs and were given only until the end of the month to wrap up their work. John is quite depressed and does not see any future for himself, whereas Dean is starting his own business and is looking forward to getting his first order.

i. Contrast John’s and Dean’s subjective wellbeing based on Diener’s model. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| John has low life satisfaction. | 1 |
| John – high negative affect (1) + low positive affect (1) or his negative emotions outweigh his positive emotions. | 1-2 |
| Dean has high life satisfaction. | 1 |
| Dean – high positive affect (1) + low negative affect (1) or his positive emotions outweigh his negative emotions. | 1-2 |
| **Total** | **6** |

ii. Apply Carol Ryff’s (1989) psychological wellbeing scale to the given scenario by identifying **two** factors and describing John’s and Dean’s response. Your description should state whether the factor is in the high or low dimension supported by the corresponding behaviour of John and Dean. (10 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Identifies the psychological wellbeing factor (1x2) | 1-2 |
| States John’s dimension level (1) and outlines his response (1) (x 2 factors) | 1-4 |
| States Dean’s dimension level (1) and outlines his response (1) (x 2 factors) | 1-4 |
| **Total** | **10** |

|  |  |  |
| --- | --- | --- |
| **Psychological Wellbeing Factor**  **(Any TWO of given)** | **John** | **Dean** |
| Autonomy (1) | Dimension: Low (1) | Dimension: High (1) |
| Behaviour: Highly concerned about how others would think of him (1) | Behaviour: Able to make his own choice and is not pressured about how others view his decisions. (1) |
| Environmental Mastery (1) | Dimension: Low (1) | Dimension: High (1) |
| Behaviour: Has little control of circumstances / is overwhelmed by complex tasks (1) | Behaviour: confident in managing complex tasks / makes the most of his situation (1) |
| Personal Growth (1) | Dimension: Low / Weak (1) | Dimension: High / Strong (1) |
| Behaviour: Lack of personal improvement/ unable to shift mindset (1) | Behaviour: Welcomes new experiences / sees opportunities in set-back / aims for self-improvement (1) |
| Purpose in life (1) | Dimension: Low / Weak (1) | Dimension: High / Strong (1) |
| Behaviour: No specific purpose in life / no desire to set personal goals (1) | Behaviour: Has a sense of direction / sets goals to follow (1) |
| Self-acceptance (1) | Dimension: Low (1) | Dimension: High (1) |
| Behaviour: Disappointed with self / low self esteem (1) | Behaviour: Positive view of life / high self esteem/ accepts personal strengths & limitations (1) |

NOTE: Not accepted: Positive relations with others. This is not supported by the scenario.

**Question 6** **(25 marks)**

a) Provide a psychological definition of ‘*stress*’. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| A person’s response to situations where the demands of the task/activity exceed resources available. | 1 |
| **Total** | **1** |

b) Hans Selye proposed a model of stress that describes the body’s response calling it the General Adaptation Syndrome (illustrated in Figure 2).

Figure 2. Stages of Selye’s general adaptation syndrome. (Image obtained from <https://en.m.wikipedia.org/wiki/File:General_Adaptation_Syndrome.jpg#file>)

i. Name stages 1 and 2 of Selye's General Adaptation Syndrome and outline how the nervous system would respond in each stage. (6 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Alarm stage (1)  Sympathetic nervous system is activated (1)  which prepares the body for increased activity during heightened physical and emotional arousal (1). | 1-3 |
| Resistance stage (1)  Parasympathetic nervous system (1) reverses the effects of the sympathetic NS to allow the body to restore its resources and repair itself (1). | 1-3 |
| **Total** | **6** |

ii. Name stage 3 of Selye’s General Adaptation Syndrome and describe a psychological response that would be present in this stage. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Exhaustion stage | 1 |
| Fatigue/ reduced motivation / feeling overwhelmed / anxiety/ depression | 1 |
| **Total** | **2** |

c) Lev is taking six ATAR subjects in Year 12. He was coping very well in Year 11 with the same six subjects, so he decided to continue with it in Year 12. He had a study schedule and was staying on task in the first term, but he found that he seems to catch colds and other minor infections easily. He got really sick at the end of Year 12 and his doctor found he has high blood pressure.

Distinguish between ‘*distress*’ and ‘*eustress*’. Provide an example of each referring to the description of Lev’s experiences in Years 11 and 12. (4 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Eustress – positive response to stress. (1)  Example – making a study schedule to stay on task / cope with demands of  Yr 11 (1) | 1-2 |
| Distress – negative response to stress (1)  Example – getting sick / having high blood pressure at the end of Year 12 (1) | 1-2 |
| **Total** | **4** |

d) Bijit is a medical intern in the emergency department of a major hospital who worked on the frontline throughout the COVID-19 pandemic. He witnessed the overwhelming effects of the virus firsthand and experienced long shifts with limited resources. This situation caused a lot of stress, and he experienced high levels of anxiety.

Refer to the Transactional Theory of Stress and Coping (Lazarus and Folkman, 1984) when answering the following questions:

i. Explain how Bijit’s individual characteristics, and his work environment contributed to his stress experience. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Bijit has the medical training to deal with sickness / health crises. | 1 |
| However, long shifts/ overwhelming effects of an unfamiliar virus/ limited resources available (names at least 1) contributed to his stress. | 1 |
| **Total** | **2** |

ii. Outline the process of cognitive appraisal that Bijit would have gone through in this situation. (4 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Primary appraisal (1)  occurred when he assessed his patients and determined the appropriate medical treatment (1) | 1-2 |
| Secondary appraisal (1)  involved realizing that resources were limited / fear that his capacity to provide appropriate medical care may get compromised due to fatigue / limited resources / lack of medical knowledge about the virus (names at least 1) | 1-2 |
| **Total** | **4** |

iii. Give an example of an emotion-focused and a problem-focused coping strategy that Bijit could employ to manage his stress. State how each strategy would be beneficial to his wellbeing. (4 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| * Example of emotion-focused coping (1) – practice relaxation techniques like breathing, mediation, positive self-talk, engage in enjoyable activities outside work to de-stress (Names at least one for 1 mark) * Benefit (1) – able to manage stress at work / less tendency to get overwhelmed / maintain levels of self confidence / self-esteem. | 1-2 |
| * Example problem-focused coping (1) – ask for schedule adjustments to provide adequate recovery between shifts, workload redistribution, or additional support from management and colleagues. * Benefit (1) – makes workload more manageable / reduces work-related stress | 1-2 |
| Accept other Relevant Responses |  |
| **Total** | **4** |

iv. Briefly explain why relying on a single coping strategy might not be sufficient for Bijit.

(2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Focusing only on one coping strategy (either emotion or problem) might neglect other underlying stressors contributing to the stress. | 1 |
| It can disregard interactions between several stressors. | 1 |
| **Total** | **2** |

**Question 7** **(21 marks)**

a) Describe an evolutionary and a restorative function of sleep. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Evolutionary function / Survival Adaptation – sleeping at night lowers risk of injury / exposure to hazards that are hard to see at night / exposure to nocturnal predators. | 1 |
| Restorative function – sleep restores the body’s homeostatic state / replaces energy used during the day | 1 |
| Total | **2** |

b) Identify the stage of NREM sleep designated by the brainwave patterns given below. (3 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| A: Stage 2 | 1 |
| B: Stage 3 | 1 |
| C: Stage 1 | 1 |
| **Total** | **3** |

c) State the letter of the brainwave pattern (A, B or C) illustrated in the table above that would occur when breathing is regular, but pulse rate and blood pressure are at its lowest; muscles are at their most relaxed state, and one is unresponsive to external stimuli. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| B | 1 |
| **Total** | **1** |

d) Apart from rapid eye movement, state **two** other features of REM sleep that are different from NREM sleep. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Any TWO:   * Characterized by low-amplitude, high-frequency brainwaves (similar to those seen in an awake state) * High degree of brain activity. * Marked by muscle paralysis, preventing the body from acting out dreams. * Vivid dreaming with intense emotions/visual detail. * REM sleep is thought to be crucial for cognitive processes like memory consolidation, emotional regulation, and creativity. | 1-2 |
| **Total** | **2** |

e) Provide **one** psychological and **one** physiological effect of partial and chronic sleep deprivation. (4 marks)

|  |  |  |
| --- | --- | --- |
| **Description** | | **Mark** |
| PSYCHOLOGICAL EFFECT | | 1-2 |
| **Partial sleep deprivation** (any 1)   * Lapses in attention / missing important details. * Irritable / short tempered * less sensitive to other people’s feelings / less control of emotions | **Chronic sleep deprivation** (any 1)   * lack of self-control/ irrational * anxiety / depression * lower self esteem * negative self-image * attraction to high calorie foods /stress eating |  |
| PHYSIOLOGICAL EFFECT | | 1-2 |
| **Partial sleep deprivation** (any 1)   * Slower reaction time * Blurred vision / eyes more light sensitive * Eye twitches or muscle spasms * Body aches / muscle fatigue * Headaches / migraine | **Chronic sleep deprivation** (any 1)   * Micro-sleep episodes * Increased blood pressure * High cholesterol * High blood sugar levels * Obesity |  |
| Accept other relevant responses | |  |
| **Total** | | **4** |

f) A longitudinal study of the sleep patterns of 6,500 Australian children and adolescents was conducted between 2010-2016. Sleep patterns of children between 6 to 9 years old were obtained from self-report questionnaires answered by their parents or legal guardians while 10 to 17 years old responded to the questionnaires themselves.

i. State **one** advantage and **one** disadvantage of conducting a longitudinal study in this sleep study. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Advantage (any ONE):   * No cohort effects as same participants are observed over time. * Easier to observe developmental changes in regards to timing & duration of events as same participants are compared * Smaller sample size required. | 1 |
| Disadvantage (any ONE):   * Longer time to acquire data and obtain findings. * (Attrition) May lose participants over the duration of the study. * Practice effect – participants may get complacent / give automatic responses. | 1 |
| Total | **2** |

ii. Describe **one** limitation of using self-report questionnaires for obtaining sleep data.

(1 mark)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Any ONE:   * Susceptible to participant bias (social desirability, demand characteristics) * Phrasing of questions/statements may influence responses. * Reliant on reading ability of participants | 1 |
| **Total** | **1** |

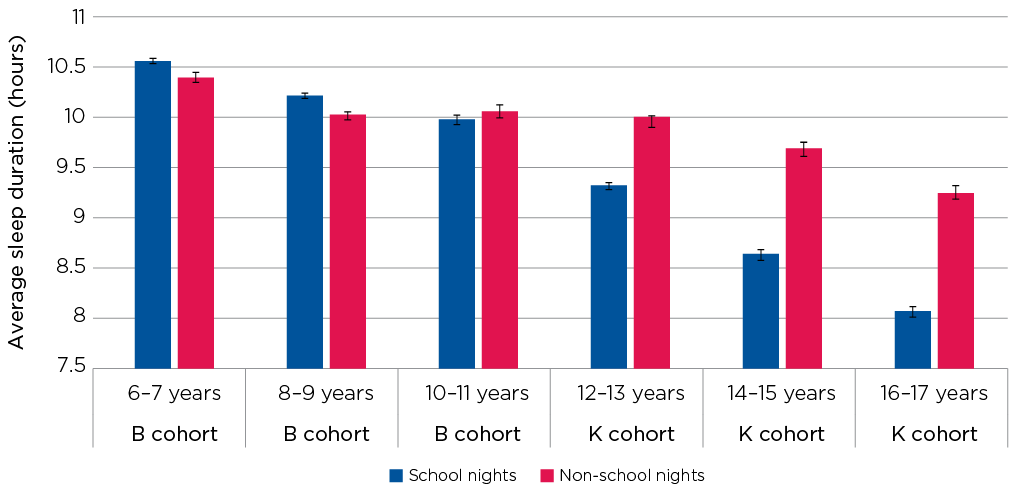
iii. Suggest **one** type of quantitative data that uses an objective physiological measure which researchers should include in their longitudinal sleep study. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Any ONE: Heart/pulse/breathing rate, muscle tone of limbs, eye movement, blood pressure, body temperature, galvanic skin response | 1 |
| **Total** | **1** |

The average sleep duration of children and adolescents are shown in Figure 3.

n School night

~~n~~ Non-school night



Age Group

**Figure 3**. Average sleep duration in hours, by age. (Reproduced from Evans-Whipp and Gasser, 2019)

iv. Referring to Figure 3, compare the sleep duration patterns on school nights and non-school nights of primary school children (6 to 11 years old) and adolescents in high school (12 to 17 years old). (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Sleep duration decreases steadily on school nights from childhood (primary school) to adolescence (high school) up to a drop of 2.5 hrs. | 1 |
| Sleep duration decreases on non-school nights from childhood to adolescence but to a lesser degree (a decrease of just 1 hr). | 1 |
| Also Accept:  The difference in sleep duration between school and non-school nights is more pronounced in adolescents in high school than children in primary school. |  |
| **Total** | **2** |

This sleep study also found that 50% of 16 to 17-year-olds do not meet the minimum sleep guidelines on school nights. A key factor that had a negative impact on sleep patterns is the use of electronic devices before bedtime.

v. Suggest **two** ways that 16 to 17-year-olds can minimize the negative impact of electronic devices on sleep hygiene. (2 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Any TWO of the following:   * Turn off electronic devices at least one hour before bedtime. * Keep electronic devices away from the bedroom – if you need to use your computer/laptop at night, find a study area that is not in your bedroom. * Put on a blue light filter on device screens to limit its effect on melatonin production. * Do not browse social media sites or play games on your mobile as a way of unwinding before you sleep. This stimulates your brain and increases sleep latency (takes longer to fall asleep) | 1-2 |
| Other relevant responses accepted. |  |
| **Total** | **2** |

vi. The researchers measured the psychological wellbeing of 16 to 17-year-old participants and found a positive correlation between sleep duration and psychological wellbeing.

State what a ‘*positive correlation*’ between sleep duration and psychological wellbeing scores means. (1 mark)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| Any ONE of the following ways of responding:   * Longer sleep duration is correlated with higher psychological wellbeing scores. * As sleep duration increases, psychological wellbeing scores also increase. * Sleep duration and psychological wellbeing scores are directly proportional. | 1 |
| **Total** | **1** |

**End of Section One**

**Section Two: Extended Answer 30% (55 marks)**

**Part A: Compulsory question**

**Question 8** **(20 marks)**

Yohan is a 65-year-old retired carpenter who had been a heavy drinker for most of his adult life. His wife passed away a year ago and in recent months, his drinking has become excessive. His daughter, Sal, has become increasingly concerned about his forgetfulness. Yohan frequently asks the same questions repeatedly, like where he put his keys or if Sal has visited recently (even if she just left). He seems confused about current events and insists he's going to work, despite being retired a few years. One day, Sal finds Yohan disoriented and visibly upset in the kitchen, fumbling with a pan and a lit stove. He had no recollection of starting to cook. Worried, she takes him to the doctor where she learns that Yohan is suffering from Wernicke-Korsakoff syndrome.

Sal is 35 years old, has no children and had gone through a divorce a few years before her mother (Yohan’s wife) died. She is now the primary caregiver for her father. Yohan requires constant supervision due to confusion and memory problems. Sal struggles to manage her full-time job, household chores, and Yohan's care, leaving her feeling exhausted and overwhelmed.

Apply your psychological understandings of Wernicke-Korsakoff syndrome and the Social Readjustment Scale (SRS) of Holmes and Rahe (1967) to evaluate the psychological impact of stressors on Sal’s health and wellbeing. Your extended response should:

* Describe the cause of memory loss in Wernicke-Korsakoff syndrome. (3 marks)
* Provide examples from the scenario that shows the behavioural and emotional effects of Wernicke-Korsakoff syndrome. (2 marks)
* Identify **three** life events from the Social Readjustment Scale (SRS) of Holmes and Rahe (1967) that could be relevant to Sal's situation and explain how each life event would relate to the challenges of caring for Yohan. (6 marks)
* State **two** potential negative consequences of chronic stress on Sal’s mental and physical health. (2 marks)
* Using the SRS scoring system, explain how you could estimate the overall stress Sal might be experiencing. (3 marks)
* Evaluate the validity of the Social Readjustment Scale as a measure of the impact of stressors on health and wellbeing. (4 marks)

|  |  |
| --- | --- |
| **Description** | **Mark** |
| **Describe the cause of memory loss in Wernicke-Korsakoff syndrome (W-KS).** | |
| Chronic alcohol abuse causes deficiency in absorption of thiamine (vitamin B1) from the digestive system. | 1 |
| Thiamine deficiency is the potential cause of memory loss due to damage/degeneration of neurons. | 1 |
| Thiamine deficiency destroys brain regions involved in memory, particularly the thalamus and mammillary bodies. | 1 |
| **Subtotal** | **3 marks** |
| **Provide examples from the scenario that shows the behavioural and emotional effects of Wernicke-Korsakoff syndrome.** | |
| Effect on behaviour (includes at least 1): repetitive questioning, confusion about recent events, insisting on going to work despite being retired | 1 |
| Effect on emotions (includes at least 1): frustration from inability to remember, anxiety due to feeling lost and disoriented/confused, depression from feeling helpless, fear of losing independence | 1 |
| **Subtotal** | **2 marks** |
| **Identify three life events from the Social Readjustment Scale (SRS) of Holmes and Rahe (1967) that could be relevant to Sal's situation and explain how each life event would relate to the challenges of caring for Yohan.** | |
| Relevant life events from the SRS (any 3)   * change in marital status – going through a divorce * close relative having a serious illness – Sal’s dad diagnosed with W-KS * death of a loved one - Sal’s mom passed away a year before * a change in work hours or conditions due to caregiving demands. | 1-3 |
| Explanation of how each life event would relate to the challenges of caring for Yohan (any 3 that aligns with given life events)   * Going through a divorce would have made Sal more vulnerable to financial/ emotional demands of caring for Yohan. * Sal may still be grieving for her mom – making her more fragile/less able to deal with her dad’s illness. * Changes in behaviour and emotions due to W-KS would make Yohan unpredictable that can be a continuous source of worry/fear for Sal * Sal would not have time to unwind and relax after work as she would be faced to another set of responsibilities caring for her dad (change in work conditions) | 1-3 |
| **Subtotal** | **6 marks** |
| **State two potential negative consequences of chronic stress on Sal’s mental and physical health.** | |
| Any 2:  Mental health: anxiety, depression  Physical health: weakened immune system, headache/migraine, sleep problems, heart disease, hypertension | 1-2 |
| **Subtotal** | **2 marks** |
| **Using the SRS scoring system, explain how you could estimate the overall stress Sal might be experiencing.** | |
| Identify/List all significant life events in the past year | 1 |
| Assign designated point values to each life event | 1 |
| Calculate the total score to estimate overall stress level | 1 |
| **Subtotal** | **3 marks** |

**Question 8** (Extended Response) continued.

|  |  |
| --- | --- |
| **Description** | **Mark** |
| **Evaluate the validity of the Social Readjustment Scale (SRS) as a measure of the impact of stressors on health and wellbeing.** | |
| Areas of high validity (strength) – any 1 that is well described, or 2 listed.   * SRS provides a standardized method for assessing life events and their perceived stressfulness (1). This allows for comparisons across different populations (1). * Positive Correlation with Health – Initial research found a positive correlation between SRS scores and the likelihood of developing illness (1), suggesting the scale has some validity in predicting stress-related health problems (1). | 1-2 |
| Areas of low validity (limitation) – any 1 that is well described or 2 listed.   * Limited Scope: The SRRS focuses only on major life events (1), potentially neglecting chronic stressors or daily hassles that can significantly impact individuals (1). * Subjectivity/ Bias: The scale relies on individuals' self-reported perception of stressfulness associated with life events (1). This subjectivity can lead to variations in scoring and may not capture the true impact of the event (1). * Cultural Bias: The scale was developed in a specific cultural context - western culture (1), and may not accurately reflect the stressfulness of certain life events in other cultures. * Limited Predictive Power: The correlation between SRRS scores and illness is although positive is relatively weak (1). It does not account for individual differences in coping mechanisms or degree of vulnerability that play a significant role in determining health outcomes. (1). | 1-2 |
| **Subtotal** | **4 marks** |
| **TOTAL** | **20 marks** |

**Part B (Answer ONE of the two questions provided)**

**Question 9 (35 marks)**

Mr. Nik is a sports education teacher who teaches basketball to Year 5 and Year 6 students. He would demonstrate different techniques of playing then let his students repeat the movements until they got it right. He would also teach them about the game rules and the history of basketball to give them a better appreciation of the sport. He made written and practical assessment tasks to track the progress of his students and measure how much they have learned.

Discuss how Mr. Nik applies his psychological understandings of relevant learning theories, rehearsal techniques, levels of processing information and different measures of retention to teach his students and assess their learning.

Your extended response should:

* Identify the learning theory used by Mr. Nik to teach different techniques of playing and describe the learning process. (7 marks)
* Describe **two** rehearsal techniques that will facilitate transfer of information from short term to long term memory and explain how these techniques can help Mr Nik’s students remember the lessons. (8 marks)
* Explain the levels of processing model proposed by Craik and Lockhart (1972) and describe **two** ways that Mr. Nik would apply this model when presenting his lessons on game rules and the history of basketball to his students. (7 marks)
* Identify and briefly describe **three** methods of measuring retention. Explain how Mr Nik can use each method in his assessment tasks. (9 marks)
* Communicate psychological understandings clearly with correct use of psychological language. (4 marks)

**Question 9**

|  |  |
| --- | --- |
| **Description** | **Marks** |
| **Identify the learning theory used by Mr Nik to teach different techniques of playing and describe the learning process.** | |
| Observational learning | 1 |
| Mr Nik models / demonstrates playing techniques | 1 |
| His students pay attention as he demonstrates. | 1 |
| They retain/store the movements in their long-term memory | 1 |
| They reproduce the movements by performing the play techniques as they practice | 1 |
| They are motivated to continue reproducing what they learned when:   * they are praised by Mr Nik or they win in a competition (direct reinforcement) (1) * they see Mr Nik rewarded for using the playing techniques or they see elite sports athletes use the techniques in their game and win (vicarious reinforcement) (1) | 1-2 |
| Accept other relevant examples of direct and vicarious reinforcement. |  |
| **Subtotal** | **7 marks** |
| **Describe two rehearsal techniques that will facilitate transfer of information from short term to long term memory and explain how these techniques can help Mr Nik’s students remember the lessons.** | |
| Maintenance rehearsal – repeating information over and over | 1 |
| increases the length of time rehearsed information stays in STM, ensuring that it gets transferred to LTM | 1 |
| Application to scenario: Mr Nik’s students memorize game rules or historical information by repeating them over and over until it is transferred to LTM | 1 |
| Repetition prevents decay of stored memories / enhances retrieval of LTM | 1 |
| Elaborative rehearsal – associating newly learned information with stored info in LTM | 1 |
| Linking new information with stored info in LTM facilitates its transfer and retrieval | 1 |
| Application to scenario: Students can make mind maps/ acronyms/ narrative chaining, flashcards / organise info into categories to associate newly learned info with existing knowledge. | 1 |
| Organised information they learned are easily retrieved during tests, improving their test performance | 1 |
| Accept other relevant responses |  |
| **Subtotal** | **8 marks** |
| **Explain the levels of processing model proposed by Craik and Lockhart (1972) and describe two ways that Mr Nik would apply this model when presenting his lessons on game rules and the history of basketball to his students.** | |
| Shallow processing | 1 |
| * Structural features of the word such as capital letters, font colour | 1 |
| * Phonemic – what the word sounds like | 1 |
| Deep processing | 1 |
| * Focus on meaning, how to use the word in a sentence | 1 |
| Example of shallow processing (phonemic only) – make a terminology list containing unique terms in basketball rules and ask students to be familiar with the spelling and sound of the words. | 1 |
| Example of deep processing – use key basketball terms in a sentence, provide the meaning, give synonyms or antonyms | 1 |
| Not accepted – example of shallow processing that only gives structural features as this is not relevant to scenario (will not help students remember rules and historical facts) |  |
| Accept other relevant examples |  |
| **Subtotal** | **7 marks** |

**Question 9** (Extended Response) continued

|  |  |
| --- | --- |
| **Identify and briefly describe three methods of measuring retention. Explain how Mr Nik can use each method in his assessment tasks.** | |
| Recall techniques – retrieving stored information with little/no cues to prompt recall | 1 |
| Example: short answer, extended response questions | 1 |
| Can be used to test student knowledge of game rules and historical events | 1 |
| Recognition techniques – recall stored information from a list of alternatives that may act as memory cues. | 1 |
| Example: multiple choice questions on game rules or historical events | 1 |
| Can be used to test if students can discriminate similar information/ identify the right answer from distractors. | 1 |
| Relearning – students reproduce/repeat a task to assess recall a set of movements or procedures. | 1 |
| Example – practical tests on executing play strategies | 1 |
| Efficiency of retention is measured by counting the number of errors or time taken after tasks are practiced several times compared with the first time it was learned (Savings Cost) | 1 |
| Accept other relevant examples |  |
| **Subtotal** | **9** |
| **Communicate psychological understandings clearly with correct use of psychological language.** | |
| Coherent and logically ordered paragraphs with linking sentences to connect ideas together. Appropriate psychological terminology used consistently and correctly. Punctuation/grammar consistently correct.  Does not need essay style broad introduction or conclusion for full marks. | 4 |
| Candidate writes coherent and logically ordered paragraphs. Uses a range of psychological terminology that is mostly correct. There may be some errors in punctuation/grammar evident, but these do not impede meaning | 3 |
| Candidate writes using clear paragraphs. Uses simple psychological terminology. There may be several errors in punctuation/grammar evident, but these do not impede meaning. | 2 |
| Candidate writes a response that attempts to use paragraphs (uses bullet points or lists that are not well described), uses limited psychological terminology correctly, limited correct use of punctuation and grammar. | 1 |
| **Subtotal** | **4** |
| **TOTAL** | **35 marks** |

**Question 10 (35 marks)**

Assume that you are an educational psychologist who is interested in investigating memory and how cramming for exams impacts storage and recall of memories. You suspect that cramming might overload short-term memory, hindering its ability to transfer information to long-term memory.

Write an extended response where you design an investigation to examine how the practice of cramming and spaced learning would impact on storage and recall of material learned in class. Both study practices would have the same amount of study material and total length of time devoted to study, but cramming would involve a continuous and intense study session over a short period such as a day before the exam while spaced learning would be over a longer study period with breaks such as having short study sessions over a week.

* Describe Atkinson and Shiffrin’s multi-store model of memory. (6 marks)
* Explain briefly how your investigation relates to the multi-store model. (2 marks)
* State your independent and dependent variables. (2 marks)
* Formulate a clear non-directional hypothesis for your investigation that includes naming the target population. (4 marks)
* State **two** variables that you will need to control and explain why it is important to control them. (4 marks)
* Outline a possible sample and sampling method that could be used. (3 marks)
* State how you will address the ethics of informed consent and confidentiality. (4 marks)
* Outline the statistical test you would use to analyze your data. (2 marks)
* Identify **two** possible sources of error in your designed investigation and describe how you can minimise its effects. (4 marks)
* Communicate psychological understandings clearly with correct use of psychological language. (4 marks)

**Question 10**

|  |  |
| --- | --- |
| **Description** | **Mark** |
| **Describe Atkinson and Shiffrin’s multi-store model of memory.** | |
| Sensory memory/register – reading notes will be stored in sensory registers – echoic, iconic for a few seconds | 1 |
| Attention – words/key ideas selected / highlighted transferred to STM | 1 |
| Short term memory – limited number of highlighted ideas (5-9 pcs of info) are stored for less than 30 sec. | 1 |
| Rehearsal – information is rehearsed by repetition (maintenance rehearsal) or by linking with stored information in LTM (elaborative rehearsal) | 1 |
| Long term memory – very large capacity for storage, information is stored for a lifetime | 1 |
| Retrieval – information retrieval enhanced by having memory cues or repeated access | 1 |
| **Subtotal** | **6** |
| **Explain how your investigation relates to the multi-store model.** | |
| * States how investigation relates to short term memory – i.e. efficiency of transfer through rehearsal / duration and capacity of STM OR Efficiency of transfer to/ retrieval of long-term memory   Sample answer related to STM: This investigation will provide supporting evidence for the limited duration and capacity of STM (1). Cramming would likely overload the capacity of STM / STM’s limited duration will mean most of the information will be lost after a few seconds (1).  Sample answer related to LTM: Spaced learning will support the multi-store model’s description of elaborative rehearsal (1) as being more stable in transferring information from STM to LTM (1). | 1-2 |
| **Subtotal** | **2** |
| **State your independent and dependent variables.** | |
| Independent variable – study technique used (Cramming or spaced learning) | 1 |
| Dependent Variable – Efficiency of recall | 1 |
| **Subtotal** | **2** |
| **Formulate a clear non-directional hypothesis for your investigation** | |
| Names the target population – e.g. high school / university students. | 1 |
| Includes the independent variable (2 conditions) – cramming vs spaced learning | 1 |
| Prediction – non-directional relationship | 1 |
| Dependent variable + how it is measured: test scores/ exam performance | 1 |
| Sample hypothesis: (It is hypothesized that) Test scores/exam performance of high school/university students will be influenced/determined by whether they use cramming or spaced learning. | |
| **Subtotal** | **4** |
| **State two variables that you will need to control and explain why it is important to control them.** | |
| * Amount of material to be studied / Exam coverage. (1)   Reason (1) – Address the confounding variable of STM’s limited capacity. Participants given more content to study will likely forget more – not because of the study technique but because there is more information to store/rehearse. | 1-2 |
| * Total time given to study (1)   Reason (1) – address the confounding variable of STM’s limited duration/ time given to rehearse. Participants given more total time to study will get better scores because there was more time to engage/process information and not mainly because of the study technique. | 1-2 |
| Accept other relevant responses |  |
| **Subtotal** | **4** |

**Question 10** (Extended Response) continued

|  |  |  |  |
| --- | --- | --- | --- |
| **Outline a sample and sampling method that could be used.** | | | |
| Sample – e.g. 100 first year university students / Year 12 ATAR students | | | 1 |
| Sampling method – convenience / snowball sampling | | | 1 |
| Outline of sampling method  Example: Volunteers will be obtained by advertising on social media | | | 1 |
| NOTE: Also accept ‘Random’ or ‘Stratified’ Sampling. | | |  |
| **Subtotal** | | | **3** |
| **State how you will address the ethics of informed consent and confidentiality.** | | | |
| Informed consent   * Participants should be provided with relevant information about the study before they provide their written consent (1) * The consent form should include (names at least 2) the aim and duration of the study, what participants are required to do / what information they should provide, potential risks, their rights (1) | | | 1-2 |
| Confidentiality:   * Personal information shared with researchers is kept private and protected during the study and is safely disposed of after the study is completed. (1) * Confidentiality agreement between participant and researcher is given in writing and permission to access or use personal information by third parties should also be given in writing. (1) | | | 1-2 |
| **Subtotal** | | | **4** |
| **Outline the statistical test you would use to analyze your data.** | | | |
| Mean of exam scores | | | 1 |
| For each study technique, take the average of participants’ exam scores and compare the mean values. | | | 1 |
| **Subtotal** | | | **2** |
| **Identify two possible sources of error in your designed investigation and describe how you can minimise its effects.** | | | |
| Sources of error (any 2) | How to minimize effect (any 2 – description should align with source of error) | |  |
| Experimenter Effects   * Instructions about the assigned study technique may be confusing. (1) * Researchers may inadvertently motivate or discourage some participants more than others. (1) | | * Use a standardized set of instructions (1) * Minimize interaction with participants (1) | 1-2 |
| Participant bias / Demand characteristics:   * Participants’ knowledge of the study’s aim/hypothesis will influence how they study (1) * Social desirability / Hawthorne Effect Participants will put in more effort because they want to do well in the exam regardless of what study technique is assigned to them (1). | | * Randomly allocate participants and do not let them know which study technique is assigned to them (deception). (1) * Use deception (single blind approach) where participants are not told about the true aim of the study (1). | 1-2 |
| Accept other relevant responses | | |  |
| **Subtotal** | | | **4** |

**Question 10** (Extended Response) continued

|  |  |
| --- | --- |
| **Use appropriate psychological terminology in a clear and logical way.** | |
| Coherent and logically ordered paragraphs with linking sentences to connect ideas together. Appropriate psychological terminology used consistently and correctly. Punctuation/grammar consistently correct. (Does not need essay style broad introduction or conclusion for full marks) | 4 |
| Candidate writes coherent and logically ordered paragraphs. Uses a range of psychological terminology that is mostly correct. There may be some errors in punctuation/grammar evident, but these do not impede meaning | 3 |
| Candidate writes using clear paragraphs. Uses simple psychological terminology. There may be some errors in punctuation/grammar evident, but these do not impede meaning. | 2 |
| Candidate writes a response that attempts to use paragraphs (uses bullet points or lists that are not well described), uses limited psychological terminology correctly, limited correct use of punctuation and grammar. | 1 |
| **Subtotal** | **4** |
| **TOTAL** | **35 marks** |

**ACKNOWLEDGEMENTS**

WATP acknowledges the permission of the School Curriculum and Assessment Authority in providing instructions to students.

**Question 6 (b) Figure 2**.

Image sourced from <https://en.m.wikipedia.org/wiki/File:General_Adaptation_Syndrome.jpg#file>)

**Question 7 (f) Figure 3** adapted from:

Evans-Whipp, J. and Gasser, C. (2019). Are children and adolescents getting enough sleep? LSAC Annual Statistical Report 2018 (Ch 4). Growing up in Australia: The Longitudinal Study of Australian Children. <https://growingupinaustralia.gov.au/research-findings/annual-statistical-reports-2018/are-children-and-adolescents-getting-enough-sleep>