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**2017**

**TRIAL EXAMINATION**

**VCE PSYCHOLOGY**

**UNITS 3&4**

**ASSESSMENT GUIDE**

**IMPORTANT NOTE**

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#### Section A – Multiple choice questions

**Question 1**

Which of the following is **not** a true statement about the *parasympathetic nervous system*?

**Answer: D.** it causes autonomic arousal in response to a perceived threat

**Question 2**

Which of the following is a **not** a function of the *sympathetic nervous system*

**Answer: B.** it maintains a state of balance in the body’s metabolism

**Question 3**

During autonomic arousal, which of the following are likely to occur

**Answer: A.** the heart-rate increases and the air-passages dilate

**Question 4**

Damage to the right cerebral hemisphere is likely to cause problems with

 **Answer: D.** movement of the left side of the body and sensation in the left side

**Questions 5 & 6 refer to the information below**

A psychology researcher is interested in finding the reasons that some students like to get up early to study, but others prefer to study late into the night. She is using members of her university psychology class as participants.

She advises them that they do not need to take part unless they wish to, she also tells them exactly what will be involved, she gets them to sign a document indicating that they are willing to participate and assures them that no identifying information will be included in the report.

**Question 5**

Which of the following ethical guidelines has **not** been covered by the researcher?

**Answer: B.**withdrawal rights for participants

**Question 6**

If another psychologist wanted to use the data for a project later in the year, what would the second researcher need to do to fulfil the necessary ethical guidelines?

**Answer: D.** get approval from the ethics committee and obtain permission from each member to use the data in a second study after explaining what the new study will be about

**Question 7**

Which of the following is an accurate statement about neurotransmitters?

**Answer: C.** neurotransmitters may have excitatory or inhibitory effects

**Question 8**

Three of Sylvie’s grandparents have been diagnosed with Parkinson’s disease. Sylvie believes that she may suffer the same disease, but she knows that early diagnosis and treatment can slow the progress of the disease considerably. Which of the following symptoms would provide the earliest warning of the onset of Parkinson’s Disease?

**Answer:** **B.** Considerable reduction in her sense of smell

**Question 9**

Sudden and intense arousal (shock) can cause severe problems for the individual because

**Answer: D.** heart-rate and blood pressure are both significantly increased which may cause heart-failure or stroke.

**Question 10**

Jim is learning to drive his mother’s car which has a manual transmission. He finds it extremely difficult to change gears as he is driving. He asks his mother to turn off the radio and only to talk to him to give driving instructions.

Jim’s need to avoid distractions suggests that for him driving his mother’s car is

**Answer: C.** a controlled process that requires selective attention

**Question 11**

Refugees arriving in new countries after fleeing their own war-torn homelands are most likely to be suffering from

**Answer:** **D.** any or all of the above are extremely likely

**Questions 12, 13, 14 & 15 refer to the following scenario**

Jack and Jill have a psychology exam coming up next week and each of them feels extremely anxious every time they think about it.

To help cope with his feelings, Jack climbs on his bike and rides as fast as he can for three hours; when he gets home again, he feels tired but his feelings of anxiety are reduced.

Jill sits in her room and completes a practice exam in psychology and then looks up answers and rehearses those of which she was not certain. At the end of three hours, Jill’s feelings of anxiety are reduced.

**Question 12**

Which coping strategy was being used by each of the students?

**Answer:**

|  |  |  |
| --- | --- | --- |
|  | **Jack** | **Jill** |
| **B.** | Emotion-focused - Avoidant | Problem-focused – Approach |

**Question 13**

Why did Jack feel less anxious after returning from his strenuous bike-ride?

**Answer:** **A.** endorphins in his blood-stream caused feelings of well-being

**Question 14**

What advice would you give to Jack to help him deal with his feelings of anxiety?

**Answer: A.** Go for a short, high energy bike-ride before you start, then do practice exams in psychology, followed by a similar bike-ride at lunch-time.

**Question 15**

What advice could you give Jill to help her deal with her feelings of anxiety?

**Answer: C.** Completing practice exams is an excellent way of preparing, but make sure you do some physical activity every hour or so.

**Question 16**

Particular neural pathways are activated over and over as a person practices playing a particular sequence of notes on a piano. Eventually the sequence can be played automatically and without conscious effort.

The neurological process that has been involved in this learning is

**Answer:** **A.** long-term potentiation, in which new connections between neurons have been created.

**Question 17**

After classical conditioning has occurred, if the conditioned stimulus (CS) continues to be presented alone, what is likely to happen?

**Answer:** **A.** extinction of the conditioned response (CR)

**Question 18**

Every morning, I let the chickens out of the henhouse where they roost overnight. As soon as they hear me coming, they begin to scrape and peck at the door. This is likely to be explained by

**Answer: D.** operant conditioning, where my footsteps are the antecedent stimulus

**Question 19**

According to Bandura, the correct sequence of stages in observational learning is:

**Answer:** **A.** Attention; Retention; Reproduction; Motivation; Reinforcement

**Questions 20 and 21 refer to the information below (UNIT 3 AOS 2)**

Jimmy is three years old. One day when his mother took him to the supermarket, he noticed a box of Chuppa-Chups and screamed over and over “Want a lollipop; Want a lollipop!” his mother was embarrassed by the noise and gave him a Chuppa-Chup to suck – Jimmy became quiet immediately! After this had happened again, Jimmy becomes excited and yells “Want Lollipop, Want Lollipop!” whenever they approach the supermarket door and his mother gives him a Chuppa-Chup as soon as she can.

**Question 20**

How has conditioning influenced Jimmy’s behaviour?

**Answer: B.** Jimmy has been positively reinforced for the behavior of yelling for a lollipop.

**Question 21**

How has conditioning influenced Jimmy’s mother’s behaviour?

**Answer: A.** She has been negatively reinforced for the behavior of giving Jimmy a lollipop.

**Questions 22 and 23 refer to the following information**

Amber is a football fanatic who loves the Western Bulldogs football team. She learned the list of 40 players and their guernsey numbers when they won the premiership in 2016. To do this she wrote them out 20 times until she scored 100% when she tested herself on them.

At the beginning of 2017, she took a sheet of paper and tried to write all the names and numbers but she could not remember them all.

To help her remember the players, she looked at the framed team photograph hanging over her desk. Using this she could remember more of the names and numbers.

**Question 22**

Which measure of retention was Amber using when she first tried to write out the list?

**Answer:** **B.** Free recall.

**Question 23**

Which measure of retention was Amber using when she tried to write out the list using the team photograph to help?

**Answer: A**. Cued recall.

**Question 24**

****

In the graph above, it is most likely that the words were required to be recalled

**Answer: C.** immediately after learning; in random order.

**Question 25**

The part of the temporal lobe most involved with linking emotions to memories is the

**Answer: B.** amygdala.

**Questions 26 & 27 refer to the information below:**

Tran is waiting at a pedestrian crossing when he sees a car turn against a red light and cause an accident in which two people suffer minor injuries. The police soon arrive and Tran gives a statement about what he has seen.

The driver who caused the accident was found to have a BAC of 0.10 and was charged with careless driving causing injury and driving under the influence of alcohol. When the case came to court, over a year later, Tran was called as a witness and when questioned he gave more details than he had done in his original statement.

**Question 26**

The fact that Tran gave more details at the trial than he had in his original statement is most likely because

**Answer: C.** he had seen film and news reports of many accidents in the past year and this had caused him to reconstruct the memories with added detail.

**Question 27**

The driver who was prosecuted would have been showing similar symptoms as if he had been without sleep for the past

**Answer: C.**  24 hours.

**Question 28**

Which of these questions would be best used to determine if a person is in an altered state of consciousness?

**Answer: B.** How long have you been doing that task?

**Question 29**

People sometimes attempt to change their level of consciousness by using medications, illegal drugs or food containing psycho-active substances.

Which of the following correctly pairs a substance and its effects on a person who takes it?

**Answer: D.** Depressants: reduce nervous system activity.

**Question 30**

Jacqui is undergoing an EEG as she attempts to solve complex problems; after a while she feels that she has fully understood the problems and how to solve them; she begins to work faster and faster.

At this stage, the EEG will probably be showing

**Answer: D.** gamma and beta waves.

**Question 31**

EEG, EMG and EOG are all used to establish a person’s level of consciousness at a particular time.

The important feature that all these devices have in common is that they

**Answer: D.** measure levels of electrical activity

**Question 32**

There are several theories of why we sleep. Which of the following provides evidence in support of the ‘Restorative Theory’?

**Answer: D.** Athletes will sleep approximately an extra 90 minutes the night they have run a marathon.

**Questions 33 & 34 refer to the information below:**

John is a member of the Army Reserves who has been on an exercise over a long weekend. During this time, he has been performing guard duty each night and

as a result of this, he has been averaging only 4-5 hours sleep per night and is feeling very fatigued.

**Question 33**

It is likely that John

**Answer:** **B.** will find the simple task of lighting a gas stove to cook his rations for breakfast more difficult than usual.

**Question 34**

As he goes on the route-march the next day, it is likely that John will experience

**Answer: B.** microsleeps.

**Question 35**

Wolfgang is ten years old and his brother, Horst, is sixteen years of age. Which is the most likely description of their natural sleep patterns during the summer school holidays.

**Answer:** **A.** Wolfgang sleeps from 9.30 pm to 8.00 am; Horst sleeps from 1.00 am to 11.00 am.

**Question 36**

In researching sleep-patterns, Researcher Jose asks participants to keep a ‘sleep diary’ to record how often they dream and the content of those dreams.

One problem that Jose must be aware of is the ‘self-fulfilling prophecy’, this means that

**Answer:** **B.** participants may make up dreams, trying to give Jose the information he is seeking.

**Question 37**

The evolutionary (circadian) theory of sleep suggests that animals (including humans) sleep at times when they are less well adapted to find food or avoid predators. Which of the following is a criticism of the survival theory of sleep?

**Answer:** **B.** During sleep, we are in a reduced state of awareness so we are in increased danger from predators

**Question 38**

Which of the following is an accurate statement regarding the sleep pattern of a typical person aged 80 or over?

**Answer: C.** They will sleep for only about five hours per night and about 20% of this will be REM sleep.

**Question 39**

A mental health issue would be considered a mental disorder if

**Answer: C.** it prevented the patient from functioning normally.

**Question 40**

A mentally healthy person will be able to

**Answer:** **D.** all of the above are characteristics of a mentally healthy person.

**Question 41**

The biopsychosocial approach to mental health is most useful because it

**Answer: B.** matches diagnosis and treatment to the specific needs of the individual.

**Question 42**

The psychotherapeutic technique that involves identifying dysfunctional thought processes and teaching the patient new ways of thinking about events, people or things is referred to as

**Answer: D.** CBT (cognitive behavioural therapy).

**Question 43**

Which of the following correctly pairs protective factors with their area of influence?

**Answer: C.** Support from friends and community: social.

**Question 44**

John B. Watson’s experiments with ‘Little Albert’ were unethical because they had the potential to cause lasting psychological damage to the infant.

What measures could Watson have taken to make these experiments satisfy ethical considerations?

**Answer:** **A.** there are no measures that would make these experiments ethical.

**Question 45**

Albert developed a phobia of white furry objects, although he was conditioned only using a white rat as a stimulus. This means that Albert was showing

**Answer:** **B**. stimulus generalization.

**Question 46**

One significant problem with research involving placebo treatments is that

**Answer: A.** they necessarily involve deception.

**Question 47**

Which of the following phobias is likely to be most resistant to treatment by systematic desensitisation?

**Answer: D.** Fear of snakes.

**Question 48**

Anxieties and phobias are often treated with medications that are referred to as ‘GABA agonists’. This means that these medications

**Answer: A.** increase the effects of GABA.

**Questions 49 and 50 refer to the information below**

Svend smokes cigarettes at the rate of about 20 per day. His friends keep telling him it is bad for his health and he should try to quit, but Svend keeps thinking of his great-uncle who smokes up to 50 per day and still appears healthy at the age of 86, so he believes that he is OK to keep smoking.

His girlfriend, Svetlana, tells him that she can’t stand the smell of the cigarettes and he has to give up the cigarettes or she will the end their relationship.

Svend truly loves Svetlana so he begins to search for ways to quit in the internet.

**Question 49**

According to the transtheoretical model of behavior change, when he doesn’t think there is a problem, Svend is in the

**Answer: C.** pre-contemplation stage.

**Question 50**

When he starts to look for ways to quit on the internet, according to the transtheoretical model of behaviour change, when he searches the internet for ways to quit, Svend is in the

**Answer: D.** preparation stage.

**SECTION B – Short answer section:**

*As long as the meaning of a word is clear and unambiguous, marks are not deducted for spelling errors* ***except*** *as specified in this guide.*

*Where part of a sample answer is shown in parentheses, it is for information and would not be required in a student response.*

**Question 1**

Supermarket manager Rosie is preparing the rosters for staffing for the next month. The store is open 24 hours seven days a week. Because the wage agreement does not pay penalty rates, Rosie is keen to make sure that all workers share equally in day (8.00am to 4.00 pm), evening (4.00pm to midnight) and night shifts (midnight to 8.00am).

1. In order for her staff to be most efficient and to keep morale high, since Mark and Trung worked the day shift this month, which shift should they be rostered for next month? 1 mark

**Answer:** *Evening shift*

**Marking Protocol:**

**1 mark:** As above

1. Explain why this is the best shift for Mark and Trung next month. 3 marks

**Answer:** *Because the natural circadian rhythm is longer than a day (approx. 25 hours) it is easier to adjust to a longer day (moving forwards) than a shorter day. Moving from day- to evening-shift makes the time they are awake longer when the change occurs.*

**Marking Protocol:**

**1 mark:** For natural circadian rhythm over 24 hours.

**1 mark:** For easier to adjust to lengthened day.

**1 mark:**  For the change from day- to evening-shift provides this lengthening of the day.

**Question 2**

It is possible that an altered state of consciousness (ASC) can be identified from *content limitations (or lack thereof)*. Explain this statement and give an example. 2 marks

**Answer:**

Explanation: *In an ASC a person’s thoughts may wander from topic to topic without a logical sequence.*

Example: *A person who is drunk cannot hold a sensible conversation on one topic.*

**Marking Protocol:**

**1 mark:** For appropriate explanation.

**1 mark:** For appropriate indication that thoughts may wander illogically in ASC.

**Question 3**

Margot is being assessed for her levels of stress and is attached to an EMG, an EOG and an EEG. At the moment, she is in a very calm and relaxed state.

**a.** What is measured by an EMG? 1 mark

**Answer:** *The level of electrical activity in muscles of the body.*

**b.** What will an EMG show while Margot is in this state? 1 mark

**Answer:** *Very low levels of electrical activity.*

**c.** At the same time, what is the EEG likely to show? 1 mark

**Answer:** *Alpha waves (probably mixed with beta and theta waves).*

**Marking protocol:**

**1 mark:** Response as above for each of **a., b., & c.**

**Question 4**



1. Explain what is being shown in the diagram above. (You may use the abbreviations NDMA and AMPA without further explanation of the terms) 2 marks

**Answer:** *The diagram shows LTP (long-term potentiation). Glutamate stimulates the NMDA receptor (releasing the ‘plug’ of magnesium and) allowing free flow of the (Sodium and) Calcium ions into the dendrite of the post-synaptic neuron. (This means that extra AMPA receptors allow extra positively charged molecules to enter the dendrite of the post-synaptic neuron). Action potential is readily achieved and the synapse is strengthened.*

**Marking protocol**

**1 mark:** For LTP

**1 mark:** For increase in synaptic strength (binding etc.)

1. How does the above diagram relate to memory formation? 2 marks

**Answer:** *The more the (positive) charge can build up in the post-synaptic neuron, the more readily this neuron can send further signals (action potentials). Repeated firing creates short-term (and long-term) memories.*

**Marking protocol**

**1 mark:** Repeated firing strengthens connections – stronger connections reflect memory formation

**1 mark:** Both short-term and long-term memories are formed in this way

**Question 5**

It is time for Suzie to begin her Year 12 VCE studies. Everything goes well until she is given SACs for all her subjects at the end of the first week **(A)**.

Suzie immediately feel stressed and cannot sleep on the Friday night **(B)**, but after thinking about her program and planning over the weekend, by Monday she is feeling that she can deal with this and returns to school with confidence **(C)**.

This confidence continues for two weeks or so, but then she begins to feel unwell and her doctor diagnoses influenza and insists that she should stay home, rest and keep her temperature down for the next week **(D)**.

1. On the axes below, draw a diagram of the General Adaptation Syndrome (Selye’s GAS), including labelling of all stages and also label **A, B, C** & **D**. 5 marks

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**Marking protocol: 1 mark** For each STAGE (Alarm; Resistance; Exhaustion)

 **½ mark** For each of A, B, C & D correctly placed (rounded up)

1. If Suzie does not follow the doctor’s advice, what are some likely outcomes? 2 marks

**Answer:** *Suzie will rapidly fall into exhaustion where she is in danger of mental and physical breakdown.*

**Marking protocol:**

**1 mark:** Exhaustion.

**1 mark:** Indication of depleted resources to deal with stressors.

1. Indicate the way in which Lazarus and Folkman’s model applies to Suzie’s situation: 1 + 1 = 2 marks
2. Primary appraisal.

**Answer:** *Suzie evaluates the SACs as potentially harmful (stress-provoking).*

1. Secondary appraisal.

**Answer:** *Suzie feels that she has the resources needed to deal with the ‘threat’.*

**Marking protocol:**

**1 mark:** Appropriate evaluation of potential ‘threat’

**1 mark:** Identification of ability to deal with the ‘threat’

1. Suggest an ‘approach’, emotion-focused strategy and an ‘approach’, problem-focused strategy that Suzie may have used over the first weekend. 2 + 2 = 4 marks

**Answer - Emotion-focused:** *Suzie may have used meditation to calm herself and enable her to think clearly.*

**Marking protocol:**

**2 marks:** Suggestion is both emotion-focused and an approach strategy.

**1 mark:** Suggestion is *either* emotion-focused *or* approach.

**Answer - Problem-focused:** *Suzie may have created a daily timetable for the term to allocate appropriate time to each SAC.*

**Marking protocol:**

**2 marks:** Suggestion is both problem-focused and an approach strategy.

**1 mark:** Suggestion is *either* problem-focused *or* approach.

**Question 6**

When Oska was a P-Plate driver, he was sitting in his car at a level crossing when a driver coming in the other direction tried to drive round the boom-gates. Oska watched in horror as the train ploughed into the other car and carried it many metres down the track before stopping.

Twenty years later, Oska still has graphic visions of the crash when he approaches the same level crossing.

Explain what has happened to Oska in terms of the formation of this graphic memory and identify the reason for it recurring at that level crossing. 4 marks

**Answer:** *Oska is re-living a personal experience (episodic memory). The memory is so vivid because of the extreme surge of adrenaline he experienced, creating a flashbulb memory (and the amygdala linking the emotion of fear/horror to the memory). This memory returns to him at the level crossing because of context-dependent cues (the external environment stimulating recall).*

**Marking protocol:**

**1 mark:** Context-dependent cues identified.

**1 mark:** For each of the underlined terms in the above response – to a maximum of three.

**Question 7**

Below is a simplified diagram of parts of two neurons.

1. Label the following:

Axon; pre-synaptic neuron; post-synaptic neuron; dendritic spine; myelin sheath; terminal button. 3 marks



**Marking protocol**

**3. Marks:** 5 or 6 of the above correctly labelled.

**2. Marks:** 3 or 4 of the above correctly labelled.

**1. Mark:** 1 or 2 of the above correctly labelled.

*(Please note: It was not found to be possible to electronically insert letters in the appropriate places on the diagram above!)*

1. Explain the purpose and function of the following parts of a neuron. 1+1+1 = 3 marks
	* 1. Myelin sheath.
		2. Axon.
		3. Cell body (Soma).

**Answer:**

1. *Insulates the axon (more efficient and faster transmission of neural impulses).*
2. *Carries the neural impulses (and/or carries molecules of neurotransmitter) from Soma to Terminals.*
3. *Creates the molecules of neurotransmitter (or other appropriate function).*

**Marking protocol:**

**1 mark:** For each item above

**Question 8**

Using an example (or two separate examples), explain the meaning of the terms *extinction* and *spontaneous recovery* as they apply in **classical conditioning**. 4 marks

**Answer:** *Dog-treats were kept in our laundry cupboard. Every time I went to the laundry, my dog, Lucy, sits near the door and salivated. We re-organised and put the treats in a kitchen cupboard. For a while Lucy still sat near the laundry door and salivated whenever I went to the laundry – but after about a week this behavior no longer occurred - extinction had taken place.*

 *When we went interstate for a wedding, Lucy stayed at my daughter’s house for a week. When we returned and I went to the laundry, Lucy again sat by the door and salivated – spontaneous recovery had occurred.*

**Marking protocol:**

**1 mark:** Extinction explained.

**1 mark:** Spontaneous recovery explained.

**1 mark:** Extinction appropriate example.

**1 mark:** Spontaneous recovery appropriate example.

**Question 9**

Using examples, explain the meaning of the terms *punishment* and *negative reinforcement* as they apply in **operant conditioning**. Make sure that you demonstrate the two essential differences between these concepts. 2 + 2 = 4 marks

**Answer:** *Punishment involves an unpleasant consequence being presented following a behaviour, making it less likely that the behaviour will be repeated – as shown when a child misbehaves and a parent speaks harshly to them.*

*Negative reinforcement involves an unpleasant stimulus being removed following a behaviour, making it more likely that the behavior will be repeated – as shown when a person with a headache takes a paracetamol tablet and the headache goes away.*

**Marking protocol:**

**1 mark:** Punishment explained.

**1 mark:** Negative reinforcement explained.

**1 mark:** Punishment appropriate example.

**1 mark:** Negative reinforcement appropriate example.

**Question 10**

**a.** Give two conditions in modelling that increase the likelihood that a child will imitate the model’s behaviour. 2 marks

**Answer:** *The closer the relationship between the model and the learner, the more likely that the learner will imitate the model.*

*If the child has seen the model rewarded for the behaviour, imitation is more likely.*

**Marking protocol:**

**1 mark:** For either of the above points (or other appropriate point made)

**b.** Peter wants to use modelling to teach his sons, Josh and Nick, how to perform a checkside punt (banana kick). Suggest how he should proceed to teach them. 4 marks

**Answer:** *Attention****:*** *Peter should perform the kick several times, whilst ensuring the boys are watching carefully (talking them through the actions would be useful).*

*Retention: Peter should ask the boys to imagine how it will feel as they perform the kick.*

 *Reproduction: Peter should give the boys confidence that they will be able to perform the kick and/or do physical activities to ensure that they have the skills and abilities to perform the kick.*

 *Motivation: Peter should encourage the boys to attempt the kick at their practice on the oval.*

 *Reinforcement: When the boys have performed the kick, Peter should praise them.*

**Marking protocol:**

**1 mark:** For each of the underlined stages above appropriately identified – to a maximum of four

**Question 11**

Zhan has been diagnosed with clinical depression.

1. Complete the table below with at least one appropriate entry in each cell, to show how different factors might be influencing Zhan’s mental health. 8 marks

|  |  |  |  |
| --- | --- | --- | --- |
|  | Biological | Psychological | Social |
| Predisposing Risk Factors | *Genetic factors* | *Personality characteristics* | *Isolation* |
| ***Precipitating Risk*** ***Factors*** | *Malnutrition* | *Emotional abuse or**neglect* | *Stressful life* *circumstances* |
| Perpetuating RiskFactors | *Use of alcohol or**drugs* | *Attachment issues* | *Low self-efficacy* |
| ***Protective******Factors*** | *Physical fitness* | *High self-awareness* | *Strong support* *network* |

**Marking protocol:**

**1 mark:**  For each of ‘Precipitating Risk Factors’ and ‘Protective Factors’

**½ mark:** For an appropriate entry in each of the 12 remaining cells in the table – rounded up

1. Explain why Zhan’s mental health condition may be more serious than it would appear if we only considered each of the factors indicated in the table above separately. 2 marks

**Answer:**  *Cumulative risk. The overall effect may be much greater than might appear because of interactions among the factors to magnify the effect.*

**Marking protocol:**

**1 mark:** Cumulative risk

**1 mark:** Interaction among factors magnifying effects.

**Question 12**

***(This qn. Included because of VCAA Examination specifications p. 2)***

You wish to investigate the relationship between the amount of mental activity a person undertakes during the day and the amount of REM sleep they experience the next night.

You have use of a sleep laboratory and equipment including an EEG, video-camera and EOG. Sixty First-year University students (30 male and 30 female), all over the age of 18 years, have volunteered for the study after being informed of its purpose and what will be involved for them.

Identify how you would operationalise the variables to be investigated and state a research hypothesis.

Describe the experimental design you would use and the procedures you would follow. You should explain why you selected this particular research design, indicate the advantages of such a design, and identify measures you would take to overcome any disadvantages. 10 marks

**Answer:** *Using a repeated measures design, to eliminate as many participant-related variables as possible, I would allocate the participants from each gender group at random into two groups (A & B), random allocation contributes to random spread of participant variables in each group.*

*Group A would then undertake four hours of mental activity (solving crosswords, Sudoku, solving anagrams, maths problems etc.) Group B would spend the four hours in a mixture of gentle physical activity, social interaction and relaxing (IV).*

*For the first five nights all participants would go to sleep in the laboratory at 10.30 pm, each attached to the EOG and when in bed the video-camera would be activated.*

*At 7.00 am all would be awakened and the recordings collected.*

*For the next five nights, the activities would be reversed (B doing the mental activities) and the same recordings made; this process of reversing the roles is called counterbalancing and it eliminates any ‘order effects’ such as learning.*

*After the experiment is complete, the results would be analysed and the percentage of sleeping time each participant spent in REM sleep would be calculated (DV).*

*It was hypothesized that for Students of first-year university psychology, the more waking time spent in intense mental activity during the day, the greater the percentage of sleep-time will be spent in REM sleep.*

**Marking protocol:**

 Students adequately address each of the following content items:

 Operational definitions of variables.

Research hypothesis.

Experimental procedures – repeated measures design to eliminate confounding participant variables.

Identification of possible confound(s) and proposed method of control.

9-10 marks: A standard that is the highest expected from a VCE student.

7-8 marks: A standard to be expected of no more than 30% of VCE students.

5-6 marks: All criteria are addressed at an adequate level for a VCE student.

3-4 marks: Some criteria are inadequately addressed.

1-2 marks: Only one criterion adequately addressed or all are poorly addressed.

0 marks: No criterion is appropriately addressed.

This response to be assessed according to the following criteria:

* Identification and explanation of formal psychological terminology relevant to the question.
* Use of appropriate psychology terminology.
* Discussion of relevant psychological information, ideas, concepts, theories and/or models and the connections between them.
* Analysis and evaluation of data, methods and scientific models.
* Drawing of evidence-based conclusions and explanation of limitations of conclusions.