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**2014**

**TRIAL EXAMINATION**

**VCE PSYCHOLOGY**

**UNITS 3 & 4**

**ASSESSMENT GUIDE**

**IMPORTANT NOTE**

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#### Section A – Multiple choice questions

**Question 1**

Sarah is in the VCE Psychology examination writing as fast as she can and concentrating very hard on what she is doing; she is not aware of anything that is going on around her and does not hear the boy behind her have a coughing fit, nor notice when the supervisor walks past her desk. Sarah is most probably

**Answer: B.** in an Altered State of Consciousness (heightened awareness – selective attention)

**Question 2**

P-plate drivers in Victoria are not permitted to hold a mobile phone conversation (even hands-free) or send text messages when driving. This law exists because

**Answer: B.** they cannot perform two controlled processes (driving and holding a conversation on the phone) at the same time

**Question 3**

Which of the following statements is **not** true of automatic and controlled processes and level of attention

**Answer: B.** automatic processes require selective attention whilst controlled processes enable divided attention

**Question 4**

In a sleep laboratory, Emma is connected to an Electromyograph (EMG) and several other instruments. During REM the Electromyograph would show

**Answer: D.** very little electrical activity in the muscles of the body

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

Emma, a young adult student had been suffering poor sleep patterns and spent the night in a sleep laboratory. In the morning her therapist informs her that she suffered partial sleep deprivation because she experienced almost no REM sleep.

**Question 5**

The therapist would have obtained this information from readings on the EEG and

**Answer: D.**the EOG readings

**Question 6**

Approximately what percentage of her sleep would the therapist expect Emma to spend in REM sleep if she had normal sleep patterns?

**Answer: B.** 20%

**Question 7**

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

**Answer: A.** cattle require approximately 4 hours sleep but cats sleep at least 15 hours per day

**Questions 8 & 9 refer to the information below:**

Randy Gardner, a radio-station DJ in California – is in the Guinness Book of Records, recorded as having remained asleep for 264 hours during a ‘Wake-a-Thon’.

**Question 8**

During his 11 days of apparent wakefulness, Randy must have experienced many episodes of

**Answer:** **C.** microsleeps

**Question 9**

In order to return to normal functioning, Randy will probably require

**Answer: A.** one or two good night’s sleep of eight hours or more

**Question 10**

During adolescence, compared with during the years of childhood, and compared with adults, the typical person will

**Answer:** **B.** need more sleep than an adult but less than a 10-year old child

**Question 11**

The somatic nervous system comprises

**Answer:** **A.** the sensory nervous system and the motor nervous system

**Question 12**

Which of the following is an accurate statement

**Answer: B.** the hippocampus is mainly responsible for forming explicit memories

**Question 13**

Wernicke’s area is almost always located in the

**Answer:** **A.** association cortex of the left temporal lobe

**Question 14**

Wernicke’s aphasia

**Answer: C.** is sometimes referred to as *receptive aphasia*

**Question 15**

Broca’s aphasia

**Answer: C.** may result from damage to the left frontal lobe

**Question 16**

Visual images received in the right occipital lobe

**Answer: A.** have been detected by photoreceptors on the right side of each retina

**Questions 17 and 18 refer to the following information**

In ‘split-brain’ research, Sperry and Gazzaniga studied patients who had had operations to sever the corpus callosum, in order to prevent severe epileptic seizures.

**Question 17**

A ‘split-brain’ patient has the word “HAMMER” flashed to her right visual field. She could then perform which of the following?

**Answer:** **A.** Say “Hammer”

**Question 18**

A picture of a hammer was flashed to her left visual field. She could then perform which of the following?

**Answer: B.** Pick a hammer out of a variety of objects under a screen – using her left hand

**Question 19**

People suffering from ‘left neglect’ have experienced lesions (damage) to

**Answer:** **B.** their right parietal lobe

**Question 20**

The parts of the brain most involved with forming *procedural memories* are the

**Answer: D.** amygdala and cerebellum

**Question 21**

A person experiencing anterograde amnesia can be said to be experiencing

**Answer: C.** consolidation failure

**Question 22**

Alzheimer’s disease can only be definitely identified by a brain autopsy after the death of a person. On performing the autopsy the pathologist will find

**Answer:** **D.** fewer brain cells than in a healthy person and blocked synapses

**Question 23**

Memory decline in old age is shown up more by measures using

**Answer: C**. recall rather than recognition

**Question 24**

The capacity of (unrehearsed) short-term memory for the average adult is considered to be

**Answer: A.** 7 ± 2 items (5 to 9 items)

**Questions 25 and 26 refer to the information below:**

During a Psychology class, a list of 25 words is read to students at the beginning of the lesson. When asked to recall as many of the words as possible, the following shape of graph was plotted from the results (Graph A):

Near the end of the lesson, the class was again asked to recall the words from the list. This time the results were as shown on the graph below (Graph B):

**Question 25**

For the curve to have the shape shown in Graph A, we can tell that the students were asked to

**Answer: D.** recall the words in any order, immediately after learning them

**Question 26**

In Graph B, Words from the beginning of the list are recalled better than those in the middle of the list. This is because words at the beginning of the list

**Answer: D.**  have been rehearsed into long-term memory

**Question 27**

According to Craik and Lockhart’s “Levels of Processing” theory, *semantic encoding* provides the most efficient means of remembering a list of words. Semantic encoding involves encoding by

**Answer: A**. putting the word in a sentence where the meaning of the word is important for the meaning of the sentence

**Question 28**

According to the information processing model of memory (Atkinson & Shiffrin), transfer of information from short-term memory to long-term memory requires the process of

**Answer: D.** elaborative rehearsal

**Question 29**

Items are considered to be lost from short-term memory through

**Answer: B.** displacement and decay

**Question 30**

According to Baddeley and Hitch, two storage components of working memory are the

**Answer: B.** phonological loop and visuo-spatial sketchpad

**Question 31**

*Motivated forgetting* includes

**Answer: C.** suppression, where a person deliberately does not access the memory

**Question 32**

Carla studied for her VCE Biology exam for two hours this morning, followed by studying for her VCE Psychology exam for two hours. After lunch she attempts the multiple choice sections from the 2013 exams in both subjects.

When marking them with answers from the VCAA website, she is surprised to find that she remembers much more detail of the Psychology than the Biology.

It is possible that Carla is experiencing

**Answer:** **C.** retroactive interference where Psychology is inhibiting her retrieval of Biology

**Question 33**

There was an armed robbery at a local convenience store.

One newspaper reporter asked “How thin was the robber?”

The witnesses are most likely to give estimates of

**Answer: B.** underweight

**Question 34**

Which of the following is an acrostic?

**Answer:** **C.** Every Good Boy Deserves Fruit

**Question 35**

A *reflex action* is a form of non-learned behaviour, this means that it is

**Answer:** **D.** all of the above

**Question 36**

A *reflex* differs from a *fixed action pattern* in that a fixed action pattern is

**Answer:** **A.** a complex response

**Question 37**

When learning occurs, the mass of protein in the brain increases. This is because of

**Answer:** **A.** synaptogenesis

**Question 38**

It is very important that, in the first few days and weeks of life, children are exposed, visually, to light and dark and movement, if they are not, it is likely that their primary visual cortex will remain under-developed. This period of early sensory experience is referred to as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ period and is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ learning.

**Answer: B.** sensitive; experience expectant

**Question 39**

In terms of *developmental plasticity* which of the following processes continues after others are complete?

**Answer: D.** myelination

**Question 40**

The process of circuit pruning occurs

**Answer:** **C.** in early childhood and in teenage years

**Question 41**

In classical conditioning, the most efficient learning occurs when

**Answer: A.** the neutral stimulus occurs one second or less before the unconditioned stimulus

**Question 42**

In operant conditioning, stimulus discrimination occurs when

**Answer: D.** a voluntary response which has occurred in the presence of a stimulus similar to the antecedent condition (discriminative stimulus) is now only elicited by the discriminative stimulus

**Question 43**

In classical conditioning, stimulus generalisation occurs when

**Answer: D.** a stimulus similar to the conditioned stimulus causes the conditioned response

**Question 44**

Which of the following istrue about punishment?

**Answer:** **D.** punishment decreases the strength or frequency of an unwanted response

**Question 45**

Observational learning and operant conditioning have certain similarities including

**Answer:** **D.** in both forms of learning, the behaviour is voluntary

**Question 46**

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

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

**Question 47**

Jose sprained his knee playing football. His physiotherapist treats his knee with massage and the pain is lessened for a few hours. Jose attends the physiotherapist every day.

The reason Jose keeps returning to the physiotherapist is best explained by

**Answer: C.** negative reinforcement

**Question 48**

A researcher has a pigeon in a Skinner Box. The researcher aims to teach the pigeon to spin around clockwise every time a light flashes.

Which procedure would the researcher be most likely to use for this training?

**Answer: B.** positive reinforcement

**Question 49**

John B. Watson’s experiments with “Little Albert” showed all of the following **except** that

**Answer: D.** stimulus discrimination can occur in small children

**Question 50**

It is not known whether Little Albert’s mother had given permission for Prof. Watson to experiment with Little Albert. If she had given written permission, the experiment would be

**Answer: C.** unethical because of possible lasting harm to Albert

**Question 51**

A mental illness is

**Answer: A.** a mental health condition that causes dysfunction in a person’s life

**Question 52**

The biopsychosocial model relates most closely to which conceptualisation(s) of normality?

**Answer: C.** medical, functional and sociocultural

**Question 53**

Which row is correct in the following table of factors contributing to mental health?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Biological | Psychological | Social |
| **D** | **genetics** | **cognition**  | **support networks** |

**Question 54**

The biopsychosocial model is best applied to which phase in the diagnosis and treatment of mental health issues?

**Answer: D.** Diagnosis, treatment and maintenance of health

**Question 55**

What type of mental disorders are most appropriately identified by dimensional diagnoses?

**Answer: C.** personality disorders

**Question 56**

When stressed a person will show elevated levels of arousal. This arousal is created and maintained by the

**Answer: A.** sympathetic nervous system

**Question 57**

After arousal has occurred and the threat no longer exists, the body’s levels of physical functioning will return to normal. This return is brought about by the

**Answer: B.** allostatic systems

**Question 58**

Lazarus’ *transactional model* emphasizes

**Answer; A.** the way in which an individual appraises a potential threat

**Question 59**

Homeostasis refers to

**Answer: A.** the state of metabolic balance in the body

**Questions 60 and 61 refer to the following information:**

Shaun works at the Ford manufacturing plant in Geelong. He knows that he will not have a job when the factory closes in 2016.

At first he was devastated by this news as he has a mortgage and his wife is expecting their second baby in November.

After discussing the situation with his wife, he has decided to return to study at night and achieve a Diploma of Engineering, which he can finish by the end of 2016.

In terms of Lazarus and Folkman’s model

**Question 60**

Shaun’s feeling of concern when he heard the news was a result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and he perceived the situation as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer: C.** primary appraisal; threat

**Question 61**

Shaun enrolling for further study was a result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is a form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer: C.** secondary appraisal; problem-focused coping

**Question 62**

Which of the following would be likely to result in eustress

**Answer: B.** getting a second interview for a much wanted job

**Question 63**

Emotion-focused coping is one strategy involved in Lazarus and Folkman’s transactional model of stress and coping. Which of the following represents emotion-focused coping strategies

**Answer: C.** cognitive-behavioural therapy

**Question 64**

Biofeedback is one process used in coping with stress. Which of the following represents biofeedback?

**Answer: C.** Your blood-pressure is shown on a computer screen and you try to reduce the level

**Question 65**

Which of the following best defines *distress*

**Answer: B.** stress that is experienced in a negative way, such as bad news

**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**

Julie thinks the medication she is taking puts her into an altered state of consciousness (ASC). Her friend, Jacquie, decides to investigate this and asks Julie some questions to see if she is in an ASC.

State two questions that Jacquie could ask and indicate how each would identify that Julie was in an ASC. 4 marks

**Answer:**

*Question: How long have you been sitting here? If Julie cannot accurately estimate the passage of time, she is likely to be in an ASC.*

*Question: Can you tell me your mobile phone number? If Julie cannot accurately recall this, she may be showing cognitive distortions, which would suggest that she was in an ASC.*

**Marking Protocol:**

**Mark each question out of 2.**

**1 mark:** For appropriate question

**1 mark:** For appropriate indication of how a response to this question would indicate an ASC.

**Question 2**

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

**Answer:** *Electrical activity in muscles that move the eyes (orbital muscles).*

**Marking protocol:**

**1 mark:** Response as above

**b.** What would an EOG show during deep (stage 3 or 4 NREM) sleep? 1 mark

**Answer:** *A very low level of electrical activity*

**Marking protocol:**

**1 mark:** Response as above

**c.** Marcia is a healthy adult, age 25. She has taken part in a sleep study. On the axes below, draw a likely somnogram to show Marcia’s likely sleep pattern over her 8 hours of sleep during the night. 3 marks

Stage

**REM**

 **1**

 **2**

 **3**

 **4**

**Marking protocol:**

**1 mark:** Response shows increase in duration of episodes of REM sleep as the night proresses

**1 mark:** Response shows episodes of slow-wave sleep decreasing in duration after first cycle

**1 mark:** Response shows no slow wave sleep later in the night

 **Question 3**

1. Explain why large proportions of the primary somatosensory cortex are devoted to fingers and hands/lips and tongue. 2 marks

**Answer:** *These parts of the body are the most sensitive and have the greatest concentrations of sensory receptor neurons, therefore requiring large numbers of neurons in the primary somatosensory cortex to receive signals*

**Marking protocol:**

**2 marks:** Response indicates large numbers of receptors and requirement for large numbers of neurons

**1 mark:** Response indicates large numbers of neurons or sensitivity

**b.** Which part of the Primary Motor Cortex controls movement of the fingers of the right hand?2 marks

**Answer:** *Lower part in left hemisphere*

**Marking protocol:**

**2 marks:** Both *lower part* and *left hemisphere* are identified

**1 mark:** One of the pieces of information is given

**Question 4**

Rob’s grandmother and grandfather on his mother’s side both suffered Alzheimer’s disease in old age. Rob’s mother is concerned that she may suffer the same problem as she gets older**.**

What strategies could Rob suggest his mother could use to delay the onset of Alzheimer’s or make it less likely that she will suffer from the disease at all? 2 marks

**Answer:**

* *Maintain high levels of cognitive activity (work requiring much thinking)*
* *Do many puzzles of different types (brain training)*
* *Avoid alcohol and drugs that contribute to death or damage to neurons in the brain*

**Marking protocol:**

**2 marks:** Two or more of the above points are made

**1 mark:** One of the above points is made

**Question 5**

Below is a simplified diagram of the connection between two neurons. Identify the parts indicated. 4 marks

****

**Answer:**

W:*Dendrite*

X: *Synaptic cleft (or gap)*

Y: *Terminal button (knob) or Axon terminal*

Z: *Neurotransmitter*

**Marking protocol**

**1 mark:** For each of the above correctly labeled

**Question 6**

George has been conned by a telemarketer and is buying some cleaning products online using his credit card.

Using Baddeley and Hitch’s model of working memory, explain how the episodic buffer and the central executive are used by George and the telemarketer. 4 marks

**Answer:**

**Telemarketer**

Central Executive: *Selecting which lines/ideas to say to George to increase the likelihood that he will buy*

Episodic Buffer: *Retrieving price and product information from long-term memory (LTM)*

**George**

Central Executive: *Making decisions about what items to buy*

Episodic Buffer: *Retrieving from LTM information such as how much credit he has left to make the purchase*

**Marking protocol**

**1 mark:** For each section as indicated above.

**Question 7**

An armed robbery was committed at a 7-11 Store in a busy street. Police dressed dummies in clothes similar to those worn by the robbers and put them in the street outside the 7-11.

From your understanding of memory, explain how and why these dummies may assist police in solving the crime. 4 marks

**Answer:** *Cued recall – because these dummies look like the robbers, they are likely to bring back memories linked to seeing people looking like this.*

 *Context dependent cues – the dummies are in the location (external environment) where the robbery occurred which is likely to increase the chance of episodic memory of the event for witnesses.*

**Marking protocol**

**1 mark:** For each of cued & context (or possible ‘state’ – if students indicate that, for example witnesses may be frightened by seeing the dummies and they were frightened by the armed hold-up).

**1 mark:** For each appropriate explanation.

**Question 8**

**a.** What is an alternative term for *species specific behaviour*? 1 mark **Answer:** *fixed action pattern*

**Marking protocol:**

**1 mark:** response as above

**b.** Give an example of a species specific behaviour and show how this differs from a reflex action. 2 marks

**Answer:**

*A Chinook salmon, after 3 years in the ocean, returning to the river where it was hatched and swimming upstream to breed.*

*This is a complex behaviour and occurs only in this species of fish. A reflex action is simple (such as blinking when a puff of air is blown in the eye) and occurs in many different species.*

**Marking protocol**

**1 mark:** For appropriate example

**1 mark:** For distinction from reflex action. *N.B. Students do not need to give an example of a reflex action.*

**Question 9**

Roger’s dog, Lucy, is very interested in food. For a week, Lucy stays with Roger’s mother who uses an electric tin-opener to open her cans of dog food.

When Lucy returns to live with Roger, he is surprised to see that Lucy begins to salivate whenever he uses his electric blender; but after about a week, Lucy does not show any interest when he uses the blender.

Using the language of *classical conditioning* explain what has been happening to Lucy over the time described above. 5 marks

**Answer:** *When Lucy stays with Roger’s mother, the tin-opener noise is a neutral stimulus (NS), paired with the unconditioned stimulus (UCS) of food which causes the unconditioned response (UCR) of salivation due to the food. Soon The noise becomes a conditioned stimulus (CS) causing the conditioned response (CR) of salivating due to the noise. When Lucy is back home with Roger, the noise of the blender is similar to the CS and therefore causes the CR of salivation. When the CS is never paired with the UCS, Lucy soon learns to distinguish the sound of the blender from the CS and stimulus discrimination has occurred.*

**Marking protocol (students must use correct terminology):**

**1 mark is awarded for correct identification and use of each of:**

Unconditioned stimulus

Unconditioned response

Conditioned stimulus

Conditioned response

Stimulus discrimination

**Question 10**

Roger decides that he will train Lucy to do tricks. After she has learned to sit and lie down on command, he wants her to spin round three times clockwise when he says “Spin Lucy!”

Using the language of operant conditioning, describe the process Roger could use to train Lucy to do this trick. 5 marks

**Answer:** *Roger should say ‘Spin Lucy’ and then positively reinforce her with a food treat when she turns her head in a clockwise direction. The next time he says ‘Spin Lucy’ he will not reinforce the behaviour until she has turned her head and body in the desired direction. This ‘shaping’ of Lucy’s behaviour will continue , each command requiring a slightly greater turn before positive reinforcement occurs. Eventually Lucy must spin once, then twice and then three times to receive reinforcement. This is known as ‘shaping’ or the method of successive approximations.*

**Marking protocol (students must use correct terminology):**

**1 mark is awarded for correct identification and use of each of:**

Positive reinforcement

Shaping (or method of successive approximations)

**3 marks**

Are awarded for an appropriate description of the method of training.

*N.B. 1 mark is lost if students do not identify that each behaviour needs to be closer than the previous one to the desired outcome.*

**Question 11**

Compare and contrast *Classical* and *Operant* conditioning in terms of: 3 marks

 **a.** role of the learner

**Answer:** *Classical – passive; operant – active*

 **b.** timing of stimulus and response

**Answer:** *Classical – response follows stimulus; operant – response follows discriminative stimulus*

 **c.** *Classical – reflexive; operant - voluntary*

**Marking protocol:**

**1 mark:** For each of a., b. and c as above.

**Question 12**

How does *stimulus generalisation* occur in operant conditioning? Explain with the use of an example. 2 marks

**Answer:** *Johnny is three years old and when he goes with his father to his mother’s office in town she always has a jar of treats and he is allowed to have one. One day his father has to go to his accountant’s office and takes Johnny with him. As they get out of the lift, Johnny runs to a door calling “Mummy Lolly!”*

*The office building is like his mother’s office and Johnny has generalized the discriminative stimulus, believing that opening this door will gain him a treat.*

**Marking protocol:**

**1 mark:** For identification of an appropriate antecedent condition (discriminative stimulus)

**1 mark:** For description of an appropriate scenario.

**Question 13**

**a.** Give two characteristics of an adult model that increase the likelihood that a child will imitate the model’s behaviour. 2 marks

**Answer:**

* *Likeable*
* *Similar to observer*
* *High status*

**Marking protocol: 1 mark –** for each of the above points (or other appropriate characteristic) to a maximum of two

**b.** Joseph wants to use observational learning to teach his seven-year old son, Eli, how to kick a football.

Using the language of observational learning, describe the steps that Joseph should use to achieve this. 5 marks

**Answer:**

1. *Attention – Active watching; Joseph ensures that Eli is watching closely as he begins a run-up with the ball held in front of him, takes four steps and drops the ball onto his boot*
2. *Retention – Eli forms a mental representation of what his father is doing*
3. *Reproduction – Eli is capable of performing the actions*
4. *Motivation – Joseph says “Come on Eli – you have a go – I think you’ll be good at this!”*
5. *Reinforcement – Eli kicks the ball between the posts and feels good about it – “Can we do this again tomorrow?” he asks his father.*

**Marking protocol: 1 mark –** for each step correctly identified and described.

**Question 14**

**a.** Rose has been under a lot of stress since she lost her job a few months ago and she seems to pick up colds and infections more frequently than ever before. Explain why this may be the case. 4 marks

**Answer:** *Rose has been experiencing the ‘fight-or-flight’ response for an extended period of time. Her body has therefore been producing high levels of stress hormones (adrenaline & cortisol). Her immune system has been active in clearing these hormones from her bloodstream and thus has no resources left to deal with infections from the environment.*

**Marking protocol: 1 mark:** for identifying high levels of ‘stress hormones’

 **1 mark:** for identifying depleted immune system

 **1 mark:** for one or more ‘stress hormones’ correctly identified

 **1 mark:** for indicating difficulty dealing with infections from environment

**b.** A friend suggests that Rose should learn meditation and spend 20 to 30 minutes per day practising meditation. How and why might this help Rose? 2 marks

**Answer:** *Whilst meditating, Rose will reduce her metabolic rate and decrease her level of arousal, enabling the parasympathetic nervous system (and other allostatic systems e.g. lymphatic system, immune system) to work as they normally do.*

**Marking protocol: 2 marks:** Reduction of fight/flight response **and** an allostatic system identified

 **1 mark:** One point is made

**c.** Describe how *biofeedback* might be used to help Rose learn to manage her stress. 2 marks

**Answer:** *Biofeedback involves giving real-time information about the level of various autonomic processes e.g. heart-rate or blood-pressure. Rose can be taught to reduce both of these by relaxing. When she has learned how to do this, she can practise regularly, thus helping her allostatic systems return her body to normal.*

**Marking protocol:**

**1 mark:** For description of biofeedback

**1 mark:** For assisting allostatic systems

**Section C - Research Methods. Answer in the space provided.**

*All questions refer to the research described below*

Georgia is a teacher at Hillcrest Secondary College. She is studying for a master’s degree in Psychology and is completing research for her thesis.

She believes that Year 10 students who revise by using semantic encoding – re-writing their notes in their own words – will achieve better understanding of a Psychology module than those who revise by using phonemic encoding - reading their notes aloud to themselves. She tests their understanding with a written test, scored out of 50 marks.

All Year 10 students take part. Students are told the purpose of the research and advised what they will be required to do and if they volunteer, Georgia writes to their parents to get written consent.

To ensure that the difference between the two groups is due to their revision method, at the end of the module but before they begin revision, she gives students a multiple choice test and allocates them to the semantic or phonemic group so that each group had the same mean score on the pre-test.

|  |  |  |
| --- | --- | --- |
|  | Mean score on multiple choice pre-test | Mean score on Written test |
| Semantic encoding | 64% | 47/50 |
| Phonemic encoding | 64% | 42/50 |

Inferential statistics on the difference between the two groups showed p = .02.

**Question 1**

State the independent variable and dependent variable in operational terms. 2 marks

**Answer:**

***Variables:***

*Independent Variable (IV): level of encoding, operationalized as Semantic or Phonemic*

*Dependent Variable (DV): Understanding of Psychology module; operationalized as score on 50 mark written test*

**Question 2**

State an appropriate research hypothesis for this research. 3 marks

**Answer:**

***Hypothesis:***

*That Year 10 students who revise using deeper encoding will show improved understanding of psychology compared with those who use shallower encoding*

**Marking protocol: 1 mark -** For each of IV and DV correctly identified – NOT stated in purely operational terms and **1 mark** for statement of population.

**Question 3**

Construct a discussion containing

The conclusion(s) based on the hypothesis (or hypotheses) and statistical analysis.

Weaknesses of the study in terms of sampling procedures; experimental procedures; possible confounding variables.

Suggestions for how a future study could be improved. 10 marks

**Answer:**

*As the results were statistically significant (P < .05) it is concluded that Year 10 students who use deeper encoding processes show improved understanding of Psychology compared with those who use shallower encoding processess.*

*A weakness of this study is that a convenience sample was used and it is only possible to generalise to the population of Year 10 children at Hillcrest Secondary College, not to all Year 10 students as indicated in the research aim.*

*The study does not indicate whether other revision strategies were employed (e.g. at home)*

*A possible confounding variable would have been intelligence of the students as the groups were matched only on pre-test score.*

*It is suggested that in future research, a repeated measures design could be used, with students taking one module then revising with phonemic encoding followed by another module, revising by semantic encoding. Counterbalancing of modules and of encoding procedures would need to occur.*

*It is also recommended that the assessment of the written test should be done by researchers who were not aware of which encoding level had been used so that experimenter effect is eliminated.*

**Marking protocol:**

 Students adequately address each of the following content items:

Sampling and experimental procedures – sampling wider than a convenience sample; matched participants design.

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

Recommendations for future research

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