**TRIALS FOR TEACHERS.**

**© Copyright rights reserved 2013**

**Permission is granted for copying for use within the purchasing school only.**

**2013**

**TRIAL EXAMINATION**

**VCE PSYCHOLOGY**

**UNIT 4**

**ASSESSMENT GUIDE**

**IMPORTANT NOTE**

PURCHASE OF THE ELECTRONIC COPY OF THIS EXAMINATION PAPER ALLOWS REPRODUCTION FOR USE BY STUDENTS AND TEACHERS OF THE PURCHASING SCHOOL ONLY. PAPERS MAY ALSO BE POSTED ON THE SCHOOL INTERNAL “INTRANET” SITES OR TRANSMITTED ELECTRONICALLY AMONG STUDENTS AND TEACHERS OF THE PURCHASING SCHOOL.

#### Section A – Multiple choice questions

**Question 1**

Sarah is sitting at a table with three friends during a VCE Psychology class. She is looking up information for a SAC on States of Consciousness but is also talking to her friends about what they are going to do after school and wondering whether they can meet the four guys at the next table. Sarah is

**Answer: A.** in Normal Waking Consciousness (NWC)

**Question 2**

Experiments with experienced drivers driving a sinuous (curving) course through ‘Witches Hats’ placed in an empty car-park have shown that when they are holding a conversation on a hands-free mobile ‘phone, their driving error-rate increases by almost 100%!

This is because

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

**Question 3**

Which of the following statements is true of automatic and controlled processes and level of attention

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

**Question 4**

In a sleep laboratory, Emma is connected to an Electromyograph (EMG). During slow-wave sleep (Stages 3 & 4) the Electromyograph would show

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

**Question 5**

Emma had been suffering poor sleep patterns and was asked to keep a ‘sleep diary’, so that her therapist could understand exactly what were Emma’s patterns of sleeping and waking during the night. The sleep diary is an example of a(n)

**Answer: C.**self-report – subjective measure

**Question 6**

Emma was also attached to an Electroencephalograph (EEG). For most of the time that Emma was dreaming, the EEG would show

**Answer: C.** beta-like waves with a ‘saw-tooth’ pattern

**Question 7**

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 8 & 9 refer to the information below:**

Jake is with the Australian Army in Afghanistan.

Last week he was on patrol with his platoon and did not sleep for one whole night. The next day he suffered symptoms of sleep deprivation.

**Question 8**

Jake is likely to experience all of the following **except**

**Answer:** **D.** hallucinations

**Question 9**

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

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

**Question 10**

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

**Answer:** **B.** sleep longer hours but with later bed-times and later awakening

**Question 11**

The sympathetic nervous system is

**Answer:** **D.** all of the above answers are correct

**Question 12**

The corpus callosum

**Answer: B.** carries information from one side of the brain to the other

**Question 13**

Broca’s area is almost always located in the

**Answer:** **C.** association cortex of the left frontal lobe

**Question 14**

Broca’s aphasia

**Answer: B.** is sometimes referred to as *expressive aphasia*

**Question 15**

Wernicke’s aphasia

**Answer: A.** may result from damage to the left temporal lobe

**Question 16**

Visual images in the right visual field

**Answer: B.** are detected by photoreceptors on the left 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**

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

**Question 18**

The word “HAMMER” was flashed to her right visual field. She could then perform which of the following?

**Answer: A.** Say “HAMMER”

**Question 19**

People suffering from ‘left neglect’

**Answer:** **C.** are aware of objects in their left visual field but do not notice them

**Question 20**

The part of the temporal lobe most involved with forming *implicit memories* in *classical conditioning* is the

**Answer: B.** amygdala

**Question 21**

The fact that when a person has suffered concussion, they usually cannot remember experiences they had for some time before the accident, provides support for the theory of

**Answer: A.** consolidation of memories

**Question 22**

Alzheimer’s disease is thought to be caused by interference with the transmission of neural impulses caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and gradual atrophy (wasting away) of the brain tissue because of the death of brain-cells, caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Answer:** **B.** amyloid plaques; neurofibrillary tangles

**Question 23**

Alzheimer’s disease is most commonly characterised by

**Answer:** A. difficulty forming new memories and loss of recent episodic memories

**Question 24**

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

**Answer: B.** 12 to 30 seconds

**Questions 25, 26 and 27 refer to the information below:**

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

The following day the class was, without warning, again asked to recall the words from the list. This time the results were as shown on the graph below (Graph B):

**Question 25**

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 26**

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

**Answer: A.**  are still in short-term memory

**Question 27**

In Graph B, the reason that words from the end of the list are not well recalled is because the delay between learning and time of recall means that

**Answer:** B. The recency effect does not occur

**Question 28**

According to Craik and Lockhart’s “Levels of Processing” theory

**Answer: C.** information processed by semantic encoding will be retrieved most efficiently

**Question 29**

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

**Answer: A.** attention

**Question 30**

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

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

**Question 31**

According to Baddeley and Hitch, the purpose of the episodic buffer in working memory is to

**Answer: D.** transfer information to and from long-term memory

**Question 32**

Motivated forgetting occurs when a person has a reason to forget experiences, this may occur through

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

**Question 33**

Carla does a lot of online shopping and she used to know her 16-digit number by heart. She then had her credit card stolen. She cancelled the account and started another with a new card.

Whenever she now tries to order something online she finds that she muddles her new number up with parts of her old card number.

Carla is experiencing

**Answer: D.** proactive interference where the old number is inhibiting her retrieval of the new number

**Question 34**

The new recruit for the football team was 183 cms tall; he played a fantastic game.

After the game, reporters asked the spectators questions about the player.

One reporter asked “How tall was the new player?”

The spectators are most likely to give estimates of

**Answer:** **C.** 193 cms

**Question 35**

Which of the following is an acronym?

**Answer:** **B.** QANTAS

**Question 36**

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

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

**Question 37**

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

**Answer:** **C.** not species specific

**Question 38**

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

**Answer: A.** synaptogenesis

**Question 39**

It is very important that, in the first few months of life, children are exposed to all the sounds of the language that will become their native tongue, otherwise they will find it difficult to speak with a native accent. This period is referred to as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ period and is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ learning.

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

**Question 40**

In terms of *developmental plasticity* which of the following lists the processes in the correct sequence?

**Answer:** **C.** proliferation; migration; circuit formation; circuit pruning; myelination

**Question 41**

Myelination is a process that commences before birth and continues into the early 20s for humans. The purpose of myelination is to

**Answer: A.** insulate the axons of neurons to increase the efficiency of neural impulse transfer

**Question 42**

In classical conditioning, learning has occurred when

**Answer: C.** a reflexive response occurs when the conditioned stimulus is presented

**Question 43**

In operant conditioning stimulus generalization occurs when

**Answer: A.** a voluntary response occurs in the presence of a stimulus similar to the antecedent condition (discriminative stimulus)

**Question 44**

In classical conditioning, stimulus discrimination occurs when

**Answer:** **B.** only the conditioned stimulus causes the conditioned, reflexive, response

**Question 45**

Which of the following is **not** true about punishment?

**Answer:** A. punishment is an alternative term for negative reinforcement

**Question 46**

According to Social Learning Theory (Bandura), children use observational learning in order to

**Answer: D.** Learn gender-appropriate behaviours

**Question 47**

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

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

**Question 48**

Tran sometimes experiences bad headaches. Every time this happens, he takes a pain-killing capsule and the pain goes away.

What principle of conditioning best explains why Tran takes a capsule every time he gets a headache?

**Answer: A.** negative reinforcement

**Question 49**

A researcher has a pigeon in a Skinner Box. The researcher aims to teach the pigeon to peck a button every time a light flashes. She aims to achieve a high and steady rate of responding without pauses.

Which schedule of reinforcement would be most likely to achieve this result?

**Answer: C.** Variable ratio

*N.B. It is possible that teachers may wish to give credit for response ‘D’ Variable Interval. This is probably a less correct response but would still be possible. It is worth pointing out to students that VCAA, in attempting to be as fair as possible, will sometimes allow a second response (see previous assessment reports).*

**Question 49**

A researcher has a pigeon in a Skinner Box. The researcher aims to teach the pigeon to peck a button every time a light flashes. She aims to achieve a high and steady rate of responding without pauses.

Which schedule of reinforcement would be most likely to achieve this result?

**Answer: C.** Variable ratio

**Question 50**

John B. Watson’s experiments with “Little Albert” showed that

**Answer: D.**  B & C are correct

**Question 51**

What was the main ethical principle contravened by Watson’s experiment with “Little Albert”.

**Answer: C.** The “no-harm” principle

**Question 52**

**Normality** is generally regarded as

**Answer: D.** all of the above contribute to normality

**Question 53**

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

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

**Question 54**

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

**Answer: D.**

|  |  |  |
| --- | --- | --- |
| genetics | cognition | support networks |

**Question 55**

A criticism of the ICD (International Classification of Diseases) and DSM (Diagnostic and Statistical Manual of Mental Disorders) systems of classification is that they

**Answer: C.** involve categorisation that may lead to labeling

**Question 56**

Approximately how many mental health disorders are identified by the DSM-IV-TR and the DSM-5

**Answer: B.** 365

**Question 57**

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

**Answer: D.** autonomic nervous system

**Question 58**

A typical arousal response will include

**Answer; A.** increased heart-rate and inhibited digestion

**Question 59**

Lazarus’ *transactional model* emphasizes

**Answer: C.** the interaction between the individual and the environment

**Question 60**

Allostasis refers to

**Answer: B.** achieving homeostasis through physiological or behavioural change

**Questions 61 and 62 refer to the following information:**

Steve was made redundant after work on building the Wonthaggi Desalination plant was completed. At first he was very concerned that he would not be able to provide for his family, but soon he realised that his skills would be in great demand if he flew to the Northern Territory.

Now he flies to Darwin each month and earns good money working three weeks on and two weeks off.

In terms of Lazarus and Folkman’s model

**Question 61**

Steve’s feeling of concern when made redundant was a result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and he perceived the situation as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**Question 62**

Steve taking the job in the Northern Territory was a result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is a form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**Ansswer: C.** secondary appraisal; problem focused coping

**Question 63**

Meditation is a strategy that is recommended to help deal with stress. The benefits of meditation include

**Answer: B.** reducing the body’s metabolic rate

**Question 64**

Physical activity can help reduce stress; this is because physical activity

**Answer: D.** all of the above are true of physical activity

**Question 65**

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

**Answer: B.** A friend helps you relax by feeling your pulse and commenting “That’s good, your heart-rate is slowing”

**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**

**a.** It is possible that an altered state of consciousness (ASC) can be identified from a person’s responses to painful stimuli. Explain this statement and give an example. 2 marks

**Answer:**

Explanation: *Pain may be experienced more or less severely than usual in an ASC.*

Example: *A person in alcohol-induced ASC does not realise that he has cut his hand on a broken glass.*

**Marking Protocol:**

**1 mark:** For appropriate example

**1 mark:** For appropriate indication that pain may be experienced with greater or lesser intensity than in NWC

**b.** It is possible that an altered state of consciousness (ASC) can be identified from a person’s self control. Explain this statement and give an example. 2 marks

**Answer:**

Explanation: *In an ASC a person may have reduced self-control or, in heightened awareness increased self-control (e.g. with controlled processes)*

Example: *A person who is hypnotized becomes increasingly suggestible, reducing self-control*

**Marking Protocol:**

**1 mark:** For appropriate example

**1 mark:** For appropriate indication that self-control may be experienced to a greater or lesser extent than in NWC

**Question 2**

**a.** What is measured by GSR? 1 mark

**Answer:** *Galvanic skin response is the level of electrical conductivity of the skin’s surface.*

**Marking protocol:**

**1 mark:** Response as above

**b.** What will GSR show during REM sleep? 1 mark

**Answer:** *Increased level of electrical conductivity (or reduced resistance)*

**Marking protocol:**

**1 mark:** Response as above

**c.** Min has been taking medication that significantly reduces the amount of REM sleep she experiences each night. She has now completed the course of medication. Predict and account for her likely sleep pattern over the next few nights. 2 marks

**Answer:** *For the next one or two nights she will have increased instances (and duration) of REM sleep. (REM rebound)*

**Marking protocol:**

**2 marks:** Response shows increase in duration and instances of REM sleep **or** identifies and describes REM rebound

**1 mark:** Response shows increase in REM sleep but does not identify how this occurs

**Question 3**

1. Explain why a large proportion of the primary motor cortex is devoted to fingers

and hands/lips and tongue. 2 marks

**Answer:** *These parts of the body are capable of the greatest degree of fine motor control and therefore have the greatest concentration of motor neurons, requiring large numbers of neurons in the primary motor cortex for control.*

**Marking protocol:**

**2 marks:** Response indicates fine motor control and requirement for large numbers of neurons

**1 mark:** Response indicates large numbers of neurons **or** fine motor control

**b.** Which part of the Primary Somatosensory Cortex responds to a touch on the fingers of the left hand?2 marks

**Answer:** *Lower part in right hemisphere*

**Marking protocol:**

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

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

**Question 4**

James’ grandfather is 85 years old and his doctor has advised the family that he has Alzheimer’s disease.

As a psychology student, what could James say to …

**a. …** inform his family about the disease and its likely progress? 2 marks

**Answer:**

*This is a degenerative disease which will become progressively worse*

* *Medication can slow the progress but not cure the disease*
* *Active use of the brain in a variety of mental activities can slow the progress of the disease*
* *Initial problems are likely to be with forming new memories*
* *Procedural memories are unlikely to be affected*
* *The disease involves the production of amyloid plaques and neurofibrillary tangles which make neural transmissions inefficient*

**Marking protocol:**

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

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

**b. …** help his grandfather slow the progress of the disease? 2 marks

**Answer:**

* *Active use of the brain will help*
* *Brain activity should be as varied as possible*
* *Be very careful to take medication regularly, as recommended by the doctor*

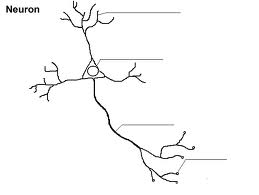
**Marking protocol**

**2 marks:** Two of the above (or other appropriate) points are made

**1 mark:** One appropriate point is made

**Question 5**

Below is a simplified diagram of a neuron. Label the parts indicated. 2 marks



**Answer:** *From top to bottom*

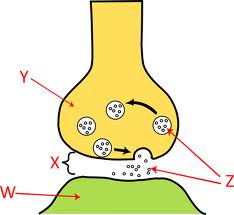
* *Dendrite*
* *Soma, cell body or nucleus*
* *Axon or myelin sheath*
* *Terminal (terminal button, terminal knob etc)*

**Marking protocol**

**2 Marks:** 3 or 4 of the above correctly labeled

**1 mark:** 1 or 2 of the above correctly labeled

**Question 6**

****

With reference to the diagram of a synapse (above) describe what happens as a neural impulse is transmitted from one neuron to another. 4 marks

**Answer:**

1. *A neural impulse (action potential) arrives at Y, the terminal button of the pre-synaptic neuron*
2. *Neurotransmitter molecules, Z, are released into the synaptic cleft (synapse) X*
3. *The neurotransmitter molecules fit into receptor sites on the dendrites of the post-synaptic neuron,W.*
4. *When the electrical charge has built up sufficiently in the post-synaptic neuron, a neural impulse will travel down the axon of that neuron*

**Marking protocol:**

**1 mark:** For each of the above points to a maximum of four

**Question 7**

George is serving on the ice-cream stall at the school fête and he needs to calculate how much seven icy poles will cost at $1.50 each.

Using Baddeley and Hitch’s model of working memory, explain how George will perform the calculation. 4 marks

**Answer:**

*He reads the price on the icy pole and stores this in the visuo-spatial sketchpad*

1. *The phonological loop holds the sounds of & and $1.50*
2. *The central executive ‘instructs’ the episodic buffer to retrieve 7-times table from long-term memory*
3. *The central executive multiplies $1.50 by 7*
4. *The phonological loop holds the sound of $10.50 and he can ask the customer for the money*

**Marking protocol**

**1 mark:** For each nominated component of working memory with an appropriate function indicated, to a maximum of four

**Question 8**

Eva is first speaker for the school debating team. Her school is hosting the Grand Final and she is keen to perform as well as possible. She has written her eight-minute opening and put key points on cue-cards, but in the final she hopes to speak entirely from memory.

Using your knowledge of state-dependent and context-dependent cues, suggest how Eva could maximize her chances of giving a faultless performance entirely from memory. 4 marks

**Answer:**

1. *Context cues – material will be retrieved more effectively in the external environment in which it was learned*
2. *State-dependent cues – material will be retrieved more effectively if the person is in the same internal state (mood/level of arousal etc.) as when they learned the material.*
3. *Eva should go to the venue where the debate is to be held and learn her speech (context)*
4. *She is likely to be nervous at the debate so she should attempt to elevate her arousal state when she is learning her speech – possibly by imagining that this is the final and she is opening the debate (state-dependent)*

**Marking protocol:**

**1 mark:** for each of the above points to a maximum of four

**Question 9**

**a.** What is an alternative term for *fixed action pattern*? 1 mark

**Answer:** *Species specific behaviour*

**Marking protocol:**

**1 mark:** Answer as above

**b.** Give an example of a fixed action pattern and show how this differs from a reflex action.

2 marks

**Answer:** *A funnel-web spider building its tubular web. This is a complex behaviour (compared with a reflex action) and is shown only by this specific species of spider, not by many species.*

**Marking protocol: 1 mark –** for each of the example and differentiation from a reflex action.

**Question 10**

Antonio is very careful to clean his teeth thoroughly after every meal. He recently bought a new toothbrush with a tongue-cleaning de-scaler on the back of the brush. He tries using this for a few days but discovers that he ‘gags’ and chokes when he tries to clean the back of his tongue. Soon he discovers that just putting the toothbrush near his mouth makes him ‘gag’ and choke. Disappointed, he decides to go back to using his old toothbrush and is surprised that he ‘gags’ and chokes when he puts this near his mouth, he persists, however, and after a few days the ‘gagging’ and choking no longer occur.

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

**Answer:**

*Before conditioning:*

***Neutral stimulus*** *(NS) – toothbrush near mouth*

***Unconditioned stimulus*** *(UCS) 🡪* ***Unconditioned response*** *(UCR)*

*toothbrush on back of tongue gag reflex (due to toothbrush on back of tongue)*

*During conditioning:*

*NS + UCS 🡪 UCR*

*gag reflex (due to toothbrush on back of tongue)*

*After conditioning*

***Conditioned stimulus*** *(CS) 🡪* ***Conditioned response***

*Toothbrush near mouth gag reflex (due to toothbrush near mouth)*

***Stimulus generalization -*** *When he gags using his old toothbrush*

***Stimulus discrimination –*** *After a few days he no longer gags using his old toothbrush*

**Marking protocol:**

**1 mark:** for each correct identification of NS; UCS; UCR; CS; CR; stimulus generalization, and stimulus discrimination to a maximum of five marks

**Question 11**

Rebekka is a first-year teacher with a Prep. Class in which there is one six year old boy (Joe) who insists on calling out without raising his hand.

How would you advise Rebekka to modify Joe’s behaviour using a *Token Economy* (Star-chart).

5 marks

**Answer:**

1. *Rebekka should talk to Joe and find out what he regards as positive reinforce (e.g. play a game on Rebekka’s iPad)*
2. *She should explain to Joe what behaviours are required (Raise hand and wait to be asked before speaking)*
3. *She should indicate to Joe that three times raising hand and waiting to be asked earns a star (token) on his card*
4. *When Joe has five stars, he can exchange them for 10 minutes on the iPad*
5. *Later this can be extended so that five good behaviours are required for a star and other rewards can be added as required*

**Marking protocol:** 1 mark for each appropriate step in introducing a token economy – to a maximum of five.

**Question 12**

Complete the following table 3 marks

*N.B. In operant conditioning, do not confuse stimulus with consequence!*

|  |  |  |
| --- | --- | --- |
| FEATURE | CLASSICAL CONDITIONING | OPERANT CONDITIONING |
| ROLE OF THE LEARNER | *PASSIVE* | *ACTIVE* |
| TIMING OF STIMULUS | *BEFORE RESPONSE* | *BEFORE RESPONSE (DISCRIMINATIVE STIMULUS)* |
| NATURE OF RESPONSE | *REFLEXIVE* | *VOLUNTARY* |

**Marking protocol:** 1 mark for each TWO accurately filled cells, to a maximum of three

**Question 13**

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

**Answer:**

*In operant conditioning it is the discriminative stimulus that can be generalized or discriminated*

*Example: Johnny goes with his mother to the supermarket and is always given a chocolate, he now asks for a chocolate as soon as they go in the door. When his mother took him to a Spotlight store, he asked for a chocolate, but his mother explained that this store does not have chocolates. The next time they went to Spotlight he did not ask for a chocolate, though he still asked for one at the supermarket: stimulus discrimination had occurred.*

**Marking protocol: 2 marks:** Discriminative stimulus identified and appropriate example given

**1 mark:** Unclear example

**Question 14**

**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.** Maria wants to use observational learning to teach her seven year old daughter, Sophie, how to scramble an egg (egg whisked up with milk, butter and herbs then heated slowly in a frying pan whilst stirring).

Describe the steps that Maria should use to achieve this. 4 marks

**Answer:**

1. *Attention – Active watching; Maria ensures that Sophie is watching closely as she begins whisking the eggs*
2. *Retention – Sophie forms a mental representation of the way her mother is acting*
3. *Reproduction – Sophie is capable of performing the actions*
4. *Motivation – Maria says “Come on Sophie – you have a go, it’s fun!”*
5. *Reinforcement – Sophie enjoys the experience and asks “Can make these for breakfast on Saurday?”*

**Marking protocol: 1 mark –** for each step correctly identified and described to a maximum of four

**Question 15**

**a.** Using an example, show the difference between *allostasis* and *homeostasis.* 2 marks

**Answer:** *Jacqui has been stressed at work and when she comes home she sits quietly in the garden, relaxes her muscles and breathes slowly. These processes are referred to as allostasis which help return her body to the state of metabolic balance referred to as homeostasis.*

**Marking protocol: 1 mark –** for each of allostasis and homeostasis correctly identified and exemplified.

**b.** Add to your example (or use another example) to show how a person may experience *allostatic overload.* 2 marks

**Answer:** *Jacqui also experiences stress from the fact that she has no more credit on her credit card, her rent is due and now she has received a speeding fine in the post. This build-up of stressors represents allostatic overload and she finds herself shaking and crying.*

**Marking protocol: 2 marks:** An appropriate example and *allostatic overload* correctly identified

**1 mark:** Allostatic overload **OR** appropriate example given

**Question 16**

Give two examples in order to distinguish *distress* from *eustress.* 2 marks

**Answer:** *Eustress is ‘good stress’ – winning an overseas trip causes arousal and excitement.*

*Distress is ‘bad stress’ – losing your car and house keys causes anxiety*

**Marking protocol: 1 mark –** for each of *eustress* and *distress* correctly identified and exemplified

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

*All questions refer to the research described below*

Susan is a Grade Prep. Teacher at Hilltop Primary School, who is studying for a master’s degree in psychology.

She believes that children who have high quality sleep each night will be able to learn to read better than their classmates who have lower quality sleep each night.

There are 74 children in Grade Prep. at her school and Susan puts a notice in the newsletter outlining her proposed research and asking all parents to sign and return a permission slip, consenting to the participation of their children – 72 families agree to take part.

Each parent is then asked to keep a ‘sleep diary’ for their participating child for one week each month for the next six months.

From the sleep diaries, Susan discovers that there are two clear groups of children: those who have 10 hours or more of uninterrupted sleep each night and those who have less than 10 hours of uninterrupted sleep each night.

In the first week of the school year, Susan uses the Neale Reading test to determine the reading age of each child in years and months. She repeats this assessment with a parallel form of the test at the beginning of Term 3.

The results of Susan’s research are shown below:

Average age of children: Term 1: 5 years 8 months; Term 3: 6 years 2 months

|  |  |  |  |
| --- | --- | --- | --- |
|  | Average Reading age Term 1 | Average Reading age Term 3 | Increase in reading age Term1 – Term 3 |
| Poor Sleep < 10 hours per night | 5 years 9 months | 6 years 3months | 6 months |
| Good Sleep ≥ 10 hours per night | 5 years 10 months | 6 years 6 months | 8 months |

Inferential statistics on the difference in increase in mean reading age for 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): Quality of sleep, operationalized as “Good: > 10 hours” and “Poor: < 10 hours”*

*Dependent Variable (DV): Ability to learn to read, operationalized as increase in reading age from Term 1 to Term 3.*

**Question 2**

State an appropriate research hypothesis for this research. 3 marks

**Answer:**

***Hypothesis:***

*That children who have good sleep patterns will show improved ability to learn to read compared with those who have poor sleep patterns*

**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 Grade Prep. children who have good sleep patterns show improved ability to learn to read compared with those who have poor sleep patterns.*

*A weakness of this study is that a convenience sample was used and generalization is only possible to the population of Prep. children at Hilltop Primary School, not to all children as indicated in the research aim.*

*The study does not indicate whether the same teaching approach was used with all children.*

*A possible confounding variable would have been intelligence of the children, where those of higher intelligence would be able to learn to read better than those of lower intelligence.*

*It is suggested that in future research, a matched participants design could be used, with children pre-tested for intelligence and in each ‘sleep condition’ the average IQ being similar.*

*It is also recommended that teaching methods should be kept constant for all children and teachers rotated across the classes 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