

ACCESS EDUCATION

VCE Psychology 2016 Unit 3 & 4 Trial Examination Suggested Solutions

Section A – Multiple Choice Questions

Question 1

D

Individuals with Wernicke's aphasia struggle to comprehend written and verbal language. They speak fluently but their sentences are generally meaningless.

Question 2

C

There is evidence that a lack of REM sleep may lead to mood disturbances.

Question 3

A

It is possible to have such a heightened level of awareness to the point where it is considered to be an ASC.

Question 4

C

Most dreaming occurs during REM sleep.

Question 5

C

Dribbling started as a controlled process and these processes require a greater mental effort than automatic processes.

Question 6

D

Because dribbling is now an automatic process requiring little attention, Jacinta can divide her attention to other tasks such as where her teammates are.

Question 7

A

Individuals with spatial neglect do not pay attention to the left of their environment but they are able to see it.

Question 8

A

In daydreaming, content limitations are less limited.

Question 9

C

The EOG would show an increase in electrical activity. The EEG and EMG record electrical activity and not conductivity.

Question 10

C

Sleep spindles occur during stage 2 sleep.

Question 11

B

REM rebound occurs the next time you sleep which may not necessarily be the next night. This is due to being deprived of REM sleep and not just sleep.

Question 12

B

B indicates Broca's aphasia which is associated with the left hemisphere.

Question 13

D

The image would appear in both occipital lobes.

Question 14

A

The somatic nervous system is responsible for voluntary skeletal muscular movement.

Question 15

D

D is the most specific answer. The question refers to sensory information and not just sensory information received by the somatosensory cortex. Therefore, D is more correct as it includes visual and auditory sensory information.

Question 16

A

The central executive is responsible for controlling attention.

Question 17

D

The phonological loop sub-vocally rehearses auditory information.

Question 18

B

Under the direction of the central executive, the episodic buffer retrieves information from the LTM.

Question 19

A

Because the students needed to recall the muscles in the exact order (serial recall), information in the STM would have decayed and the recency effect would not be evident.

Question 20

C

Semantic encoding involves making information more meaningful and hence a deeper level of processing.

Question 21

B

Motivation and confidence may impact on the memory ability of the elderly.

Question 22

B

Nonsense syllables were used to remove past experience which may act as a confounding variable.

Question 23

A

Simon's old number is interfering with his ability to retrieve his new number (encoding and storage) which is proactive interference. With each new set of words David learned, it interfered with his ability to retrieve past words he had learned which is retroactive interference.

Question 24

A

A TOT is an example of how retrieval is not an all or nothing process.

Question 25

C

An increase in neurotransmitter is a functional change.

Question 26

C

Repression occurs unconsciously.

Question 27

B

The scene of the crime would provide environmental cues to assist retrieval.

Question 28

C

Leading questions may have caused a reconstruction of Angela's recall of the event.

Question 29

A

The words spoken by Jim's mum remained in echoic memory long enough for Jim to pay attention to them.

Question 30

C

The amygdale is responsible for the memory of emotional events and for recognising emotions.

Question 31

C

Tom has learned to light a fire by observing his father without any direct involvement.

Question 32

C

Experience expectant learning occurs during sensitive periods.

Question 33

A

Myelination.

Question 34

B

Jack is avoiding/removing the unpleasant stimulus of the fine. This strengthens the likelihood that he will continue the behaviour.

Question 35

A

Discriminative stimulus.

Question 36

B

In the stages of observational learning, motivation refers to the motivation to perform the behaviour.

Question 37

B

The blue jacket has become a conditioned stimulus. At the beginning it would have been a neutral stimulus.

Question 38

A

The dog has generalised the conditioned stimulus of the blue jacket to the brown jacket.

Question 39

A

Variable ratio of reinforcement.

Question 40

D

Aversion therapy is used for unwanted behaviours.

Question 41

A

Spontaneous recovery is a characteristic of both classical and operant conditioning.

Question 42

C

Proliferation is a characteristic of developmental plasticity.

Question 43

A

The amygdale is responsible for the formation of classically conditioned emotional responses.

Question 44

B

The other responses refer to ethical guidelines that should have occurred before or during the research.

Question 45

C

The children were still learning even though they did not directly receive reinforcement or punishment. This is a more significant finding than response A.

Question 46

D

Long term exposure to cortisol may suppress the immune system.

Question 47

C

Historical.

Question 48

B

The stress response is due to a subjective appraisal.

Question 49

A

Dimensional approaches reduce labelling.

Question 50

D

The situation is threatening to Steve but a challenge to Ben.

Question 51

B

Seeking out information is problem focused coping. Avoidance is emotion focused.

Question 52

A

The model does allow for how an individual may vary in moving through each stage.

Question 53

C

Allostasis is maintaining a stable physiological environment by fluctuating and changing.

Question 54

B

With allostatic load, the immune system may be weakened.

Question 55

A

Exercise can improve our resilience to stress. Muscle tension results from an increase in sympathetic nervous system activity.

Question 56

A

Both are experiencing a stress response activated by the sympathetic nervous system.

Question 57

B

Biofeedback

Question 58

D

The DSM is a categorical approach.

Question 59

D

D accurately describes the psychological responses to eustress and distress.

Question 60

B

Decrease in salivation.

Question 61

C

No conclusion could be made, as the statistics given are descriptive.

Question 62

B

Convenience sampling is most suitable.

Question 63

D

A double blind procedure can control both the experimenter and placebo effects.

Question 64

A

Independent groups. The same participants were not used and no matching took place.

Question 65

B

Some participants may be more experienced or less experienced in consuming coffee prior to sleep.

Section B – Short Answer Questions

Question 1

- a. *Changes in cognitive (mental) functions, such as memory, attention and concentration*
Thoughts processed abnormally, thinking is illogical,
Impaired problem solving
Memory – recall - more fragmented, less accurate, normal storage and retrieval processes are affected
Any other acceptable response.
Students must clearly describe the distortion.
- b. ***Students must explain the perceptual distortion (1 mark) and how it would be determined (1 mark).***
Perception (interpretation) of sensory information is distorted
More receptive, less receptive or not receptive at all
Sensory experiences more vivid, colours brighter, tastes and smells stronger etc.
Pain can be heightened or reduced
Some may feel no pain at all
Sensations are intensified, reduced or may not be experienced at all.
Any other acceptable response.

Question 2

The fingers have more of the motor cortex devoted to it than the toes (1 mark) and therefore have more motor neurons (1 mark) than the toes allowing more precise movement.

Question 3

- a. *Miranda has perceived the situation as harmful/threatening (1 mark) and she perceives the situation as beyond her ability to cope/she does not have the resources to cope (1 mark).*
- b.
- *Any two of the following*
 - *Covers psych determinants of stress response - we have some control over them*
 - *Stresses the personal nature and individuality of stress response - Explains how we respond differently to same stressor*
 - *Views stress as interaction with environment – we have an active role (how we perceive it – its not passive)*
 - *Allows for reappraisal- fact that stressors and circumstances can change over time*
 - *Can change our thinking about stressor and/or response*
 - *Proposes methods for managing psych responses to stressors (coping strategies)*

Question 4

- a. *Adaptive plasticity of the brain refers to changes in the brain's neural structure and function to compensate for lost functions or brain damage (1 mark – must refer to adaptive plasticity). Rerouting (1 mark) and sprouting (1 mark) of nerves may allow other areas of the brain to compensate for the lost function.*
- b. *A 5 year old child's brain would have greater plasticity as it would involve both developmental and adaptive plasticity rather than just the adaptive plasticity of an adult (1 mark).*

Question 5

Ryan may have been asked leading questions (1 mark) by the police. The leading questions may have contained false or misinformation (1 mark) and this misinformation may have become part of Ryan's reconstructed memory (1 mark) resulting in an inaccurate testimony.

Question 6

- a. *Being an adolescent Gary may be experiencing a shift in the sleep wake cycle (1 mark) whereby melatonin would be released 1-2 hours later in the night (1 mark). Gary would not become tired until later in the night and he would also need more sleep making it difficult to get up in the morning (1 mark).*
- b. *The next time Gary sleeps (not the next night) Gary would experience REM rebound (1 mark). He would have more instances of REM sleep and spend more time in REM sleep to make up for the lost REM sleep (1 mark).*
- c. *Students can refer to any of the effects of sleep deprivation (1 mark) but they must relate that effect to how it would affect Gary's performance at work (1 mark).*

Question 7

- a. *Initially the dog was a NS (1 mark). When she was bitten by the dog, UCS (1 mark), she experienced the UCR of pain and fear (1 mark). Now when she sees a dog, the dog has become the CS (1 mark) causing the CR (1 mark) of fear of all dogs.*
- b. *Amygdale*

Question 8

Bill could have unconsciously (1 mark) repressed (1 mark) the incident because it was traumatic in nature. He may have consciously (1 mark) chosen to suppress (1 mark) the incident because it was embarrassing or upsetting.

Question 9

*Jason was suffering from allostatic overload (1 mark). Therefore, the continual build-up of stress hormones would be suppressing his immune system (1 mark) making him more susceptible to illness caused by viruses or bacteria (1 mark). In addition, there is a strain on his physiological systems that may increase the risk of heart disease or stroke etc. (1 mark). **Students need to make reference to effect on both the immune system and physiological systems.***

Question 10

- a. *By paying the pickers \$500 a week to pick apples, the workers may take longer breaks, or not pick apples very quickly at all because they know they will get the money whether they pick one box of apples or 100 boxes (1 mark). Michael should use a fixed ratio (1 mark) of a certain amount per box which would encourage the pickers to pick more boxes to earn more money. This would produce more consistent behaviour ensuring the fruit is picked (1 mark).*
- b. *Sam and Mitch decided to pick apples to avoid the unpleasant stimulus of having their mobile phones taken from them (1 mark). This is negative reinforcement (1 mark).*

Question 11

- a. *The EOG would detect amplify and record the electrical activity of the muscles responsible for eye movement (1 mark). During REM sleep, there would be an increase in electrical activity (1 mark).*
- b. *Different bed, setting etc. may make it hard to get to sleep
Artificial environment means sleep patterns may differ from normal
Hard to sleep with wires attached recording responses.
Any other suitable response.*

Question 12

Rhianna would have been experiencing eustress (1 mark) and Serena distress (1 mark).

Both girls would have been experiencing the same physiological responses such as increased HR, dilation of pupils etc. (1 mark) because in both cases the sympathetic nervous system would have been activated (1 mark).

Question 13

- a. *It takes time, approx. 30 minutes, for the physical and chemical changes to take place for a memory to form (1 mark). Being concussed would have disrupted this process and her memory for the period of time just prior to being thrown from the horse would not have consolidated (1 mark).*
- b. *Functional – increase in neurotransmitters
Structural – increase in dendritic spines
Structural – increase synaptic connections
Students must indicate which is functional and which is structural.*

Question 14

Mary could wait and watch for signs that Morgan may be ready to go to the toilet or she should wait until she thought enough time had passed and Morgan would be due to need a toilet (discriminative stimulus) (1 mark). Mary could then sit Morgan on the potty/toilet and encourage her to empty her bladder or use her bowels. When Morgan uses the potty/toilet (response/behaviour) (1 mark), Mary could give Morgan a treat, or praise her with “good girl” etc. (reinforcement) (1 mark).

Question 15

Mental health professionals now consider how biological, psychological and social factors combine and interact (1 mark) to influence an individual's mental health and well-being (1 mark). These factors are identified and addressed in developing a treatment plan/strategy to deal with the issue (1 mark).

Section C – Extended Response

Question 1

Independent groups.

Question 2

IV

Method of learning, operationalised as using a computer software program for three weeks or maintaining normal classroom practices.

DV

Literacy and grammar skills, operationalized as the mean score of literacy and grammar test 2 compared to the mean score of literacy and grammar test 1.

Question 3

NOTE: the extended response should be read “holistically” first. Responses should then be categorised as high (8, 9, 10), medium (5, 6, 7) or low (1, 2, 3, 4). A decision should be made as to what score the response is worth in each range. To achieve a score of 10, students must cover all of the requirements of the question.

Primary school students will show better learning of literacy and grammar skills using a new computer software program compared to learning through normal classroom practice.

The results are statistically significant and the hypothesis is accepted. The likelihood the difference in results was due to chance is equal to or less than 4%. Scott could conclude that the new computer software program results in the better learning of literacy and grammar skills as opposed to learning through normal classroom practice.

The implications of this study are that the new software program is an effective tool for improving the literacy and grammar skills of primary school students. However, this research has several limitations. One of them is that the sample was not randomly selected and therefore may not be representative of the characteristics of the primary school population. Any differences in individual learning ability were not considered which could bias the results. There was no control over the teaching methods and/or teaching ability in the control group. There was no control over the competency of the teacher. In addition, each class teacher graded the assessments and they may have inadvertently graded differently. Standardised instructions and procedures should have been used to remove bias in grading the assessments. External influences such as parental help, reading at home etc., may have impacted on the results.

A future study should use a random sample. Matched pairs design could be used to account for any differences in learning ability to equally distribute this characteristic between the control and

experimental groups. Repeated measures would also control for differences in learning ability as the same participants would be involved. Counterbalancing would be needed to minimise the possibility of order affects biasing the results. An independent groups research design was not suitable as it is the weakest research design for minimising differences in participant characteristics.

Control would need to occur by standardising the grading process for assessments to remove the possibility of bias in grading. These could be graded externally to also control for any possible experimenter effects. In addition, a future study should only include one teacher to account for any differences in teaching styles influencing the results. If more teachers were involved, greater control is needed over teacher differences.