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**2017**

**TRIAL EXAMINATION**

**VCE PSYCHOLOGY**

**UNIT 3**

**ASSESSMENT GUIDE**

**IMPORTANT NOTE**

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#### Section A – Multiple choice questions

**Question 1**

A true experiment is aiming to determine

1. how changes in the value of the independent variable cause changes in the value of the dependent variable

**Question 2**

Before commencing a new Area of Study, Mrs. Jones set her VCE Psychology class a 20 question test to see how much each student knew about the topic.

Of her 24 students, 12 scored 4, 5 or 6 and 10 scored 14, 15 or 16 (two students scored 10).

The distribution of scores can be said to be

1. bimodal

**Question 3**

The central nervous system (CNS) comprises

1. the brain and spinal cord

**Question 4**

The peripheral nervous system consists of

1. the somatic and autonomic nervous systems

**Question 5**

Which of the following correctly identifies a primary function of the named lobe of the cerebral cortex?

1. Temporal lobe: hearing sounds

**Question 6**

The part of the nervous system that causes the fight-flight-freeze response is the

1. sympathetic nervous system

**Question 7**

Although sense receptors in the skin are required for us to touch and feel, sensory perception takes place in the

1. parietal lobe

**Questions 8 & 9 refer to the following scenario:**

Jacqui is awakened in the night by a loud noise just outside her window, she is alarmed and turns on her light and peers out of the window, but feels great relief as she realises that the noise was caused by her cat knocking a pot- plant off her window-sill.

**Question 8**

In Jacqui’s alarm, it is likely that she experienced which of the following reactions?

1. Increased heart-rate and sweaty palms

**Question 9**

As Jacqui calmed down after her alarm, her body functions were being controlled by her

1. parasympathetic nervous system

**Question 10**

A person sitting with one leg crossed over another receives a tap just below the kneecap, causing an involuntary kick of the leg. This reflex response involves which of the following sequence of neurons?

1. Sensory neuron-motor neuron

**Question 11**

The spinal cord consists of axons of neurons that are insulated by myelin sheaths, the effect of such insulation is that

D. neural impulses are transmitted with increased efficiency and velocity

**Question 12**

Which of the following is the correct sequence of structures involved in the transmission of a neural impulse from one neuron to another?

1. Dendrite-soma-axon-axon terminal-dendrite

**Question 13**

Neurotransmitters may have excitatory effects or inhibitory effects. Which of the following neurotransmitters has an inhibitory effect?

1. Gamma-amino butyric acid (GABA)

**Question 14**

Patients suffering Parkinson’s disease have imbalances among the following neurotransmitters

1. GABA, dopamine and acetylcholine

**Question 15**

When a person has been in a state of stress but the threat has been removed, the body’s levels of physical functioning will return to normal. This return is brought about by the

1. allostatic systems

**Question 16**

Selye’s model of human adaptation to cope with stressors has been criticised because

D. All of the above are criticisms of Selye’s research

**Question 17**

Lazarus and Folkman’s ‘Transactional Model of Stress and Coping’ has been criticised because

1. Lazarus and Folkman did not consider physiological responses to stressors

**Question 18**

Lazarus’ *transactional model* emphasises

1. the interaction between the individual and the environment

**Question 19**

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

1. synaptogenesis

**Question 20**

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

B. amygdala

**Question 21**

There was an armed robbery at a local service station.

One newspaper reporter asked “How fat was the gunman?”

Eye witnesses are most likely to give estimates of

1. overweight

**Question 22**

Shia was riding her bike to school when a car pulled across in front of her and she swerved and fell onto the grass verge. She was badly shaken, but physically unhurt; however, her vivid memory of the event kept returning and scaring her again. It is most probable that this memory was influenced by the release of unusually high quantities of

D. adrenaline

**Question 23**

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

1. 7 ± 2 items (5 to 9 items)

**Question 24**

Jack was knocked out when playing rugby, when he recovered consciousness he had great difficulty recalling events leading up to the accident. This provides support for the theory of

1. consolidation of memories

**Question 25**

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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. amyloid plaques; neurofibrillary tangles

**Question 26**

Mary is 88 years of age and has recently been diagnosed with Alzheimer’s disease. It is likely that Mary will have

C. difficulty forming new memories and loss of recent episodic memories

**Question 27**

Procedural memories mainly involve which part of the brain

D. Cerebellum

**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

D. elaborative rehearsal

**Question 29**

Information is considered to be lost from sensory memory through

C. decay

**Question 30**

Researchers have shown that people with damage to the hippocampus can still learn new skills, such as riding a bicycle; however, they are unable to remember performing this skill. This is because remembering the act of performing the skill would require

D. declarative memory

**Question 31**

In classical conditioning, learning has occurred when

1. a reflexive response occurs when the conditioned stimulus is presented

**Question 32**

In classical conditioning, stimulus generalisation occurs when

A. a stimulus similar to the conditioned stimulus causes the conditioned response

**Question 33**

In operant conditioning stimulus generalisation occurs when

1. a voluntary response occurs in the presence of a stimulus similar to the antecedent stimulus

**Question 34**

In classical conditioning, stimulus discrimination occurs when

C. only the conditioned stimulus causes the conditioned, reflexive, response

**Question 35**

Which of the following is true about punishment?

1. punishment may produce unwanted side-effects

**Question 36**

Sadie has been diagnosed with arthritis. When the pain becomes severe, she takes prescription medication for relief. This behavior is strengthened by

1. negative reinforcement

**Question 37**

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

1. Attention; Retention; Reproduction; Motivation; Reinforcement

**Question 38**

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

D. learn gender-appropriate behaviours

**Question 39**

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

1. an emotional response can be generalised

**Question 40**

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

C. the principle of “no physical or psychological harm”

**SECTION B**

*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**

Jim is running into position to take a pass from a team-mate, but a misdirected kick causes him to be struck on the back of the head by the ball! Jim describes the experience as “the time I saw stars on the football field”.

Explain why Jim’s statement may be literally true of his perception. 4 marks

**Answer:** *Jim has been struck on the back of the head which is the location of the primary visual cortex in the occipital lobe. The pressure of the ball striking him causes energy to stimulate the neurons in the cortex. (Although this is not electro-chemical energy, such as a neural impulse,) stimulation of the cells by this energy will produce flashes. This is literally ‘seeing stars’.*

**Marking Protocol:**

**1 mark each for:** Occipital lobe

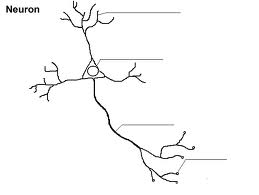
Primary visual cortex

Stimulation of neurons (by energy)

Perception of flashes (interpreted as stars)

**Question 2**

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



**Marking Protocol:**

**0.5 mark each for:** Terminal button (axon terminal etc.)

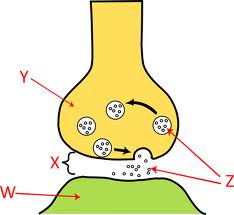
Axon

Soma (cell body, nucleus etc.)

Dendrite

**(Round up total)**

**b.**

****

With reference to the diagram of a synapse (above) identify the labelled parts as indicated below 4 marks

**Answer:**

W – the *dendrite* of the *post-synaptic* neuron

X – the *synaptic cleft*

Y - the *axon terminal* of the *pre-synaptic* neuron

Z – *(molecules; sacs of) neurotransmitter*

**Marking Protocol:**

**1 mark each for:** W, X, Y and Z

**Question 3**

Max has been diagnosed with Parkinson’s disease.

1. What are two possible **physical** symptoms that have led to this diagnosis? 2 marks

**Answer:** *Slowed movement*

*Involuntary movement (especially shaking & tremors)*

*Rigidity*

*Difficulty starting or stopping movements*

**Marking Protocol:**

1. **mark for any of the above to maximum 2**
2. What are two possible **psychological** symptoms that have led to this diagnosis? 2 marks

**Answer:** *Depression*

*Anxiety*

*Sleeping problems*

*Dementia*

**Marking Protocol:**

1. **mark for any of the above to maximum 2**
2. Choose ONE neurotransmitter and indicate how it is involved in creating the symptoms of Parkinson’s disease. 2 marks

**Answer:** *Dopamine – reduced levels (in substantia nigra) causes reduced ability to inhibit movement*

*Acetylcholine – reduced levels also affect levels of dopamine*

*GABA – possibly leads to tremors in hands and legs*

**Marking Protocol:**

**1 mark for any of the above to maximum 2 (name and effect required)**

**Question 4**

In the space below, draw and label the response to a stressor as illustrated by Selye’s General Adaptation Syndrome. 4 marks

**Marking protocol: 1 mark for each of:** Alarm; Reaction; Exhaustion

**1 mark for:** shock & countershock

**Question 5**

George received a text with his VCE results and was disappointed that his ATAR was some way below the expected cut-off score for the course he wants to take at university.

Indicate how he might manage his disappointment using Lazarus and Folkman’s model as indicated below: 2 + 2 = 4 marks

1. Using a constructive, problem-focused coping strategy

**Answer:** *Repeat the year but manage his study habits more effectively*

*Enrol in a course with a lower cut-off and aim to perform well enough to transfer at the end of the year or semester*

*Keep working to save money but take another (or repeat one) subject at TAFE to improve ATAR*

**Marking protocol: 2 marks** Students identify and explain an appropriate strategy

1. Using an adaptive (approach) emotion-focused strategy

**Answer:** *See a psychologist (e.g. for CBT) to reduce negative emotion (name emotion)*

**Marking protocol: 2 marks** Students identify and explain an appropriate *approach* strategy

**Question 6**

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

**Answer:** *Joe had been highly stressed for several weeks because of tight deadlines at work and he found his blood pressure and heart-rate raised and he was often hyperventilating. To overcome this, he asked his manager to re-schedule some of the tasks and also made sure that he went for a 20-minute run at lunch-times (Allostasis). After two days, he found that his breathing, heart-rate and blood-pressure were at normal levels (a state of homeostasis).*

**Marking protocol: 2 marks:** Students use an appropriate example and show understanding of both terms.

**1 mark:** One term explained **or** no clear differentiation is made

**0 marks:** No example used

**Question 7**

There was an accident at the school sports when part of a stand collapsed and some students sustained minor injuries.

When an enquiry was being held, students were taken back to the sports ground and asked to recount their memories.

Using your knowledge of state-dependent and context-dependent cues, suggest how re-visiting the scene would be likely to improve their recall of the event. 4 marks

**Answer:** *By returning to the scene, context-dependent cues (the external environment) would assist in recall of the events. The investigator would also ask students to picture the scene and recall their feelings of anxiety at the time, therefore creating state-dependent cues (internal conditions).*

**Marking protocol: 4 marks:** Both state- and context-dependent cues are identified and explained

**2 marks:** Only one form of cue is explained

**3 or 1 mark:** Attempts at one or both are made but the environmental features (internal or external) are not adequately identified

**Question 8**

Zoe has a six-month old border collie puppy, Jett.

Using the language of operant conditioning, explain how Zoe could teach Jett to sit at the edge of the footpath before crossing the road. 4 marks

**Answer:** *Zoe has a bag of small doggy-treats that Jett loves. Zoe leads Jett to the kerb - the antecedent stimulus-and tells him to sit - the desired behaviour. At first Zoe will positively reinforce Jett with a treat - the consequence - when he bends his back legs, starting to sit; next time she will give the reinforcement only when Jett has fully sat on the pavement (shaping). After this, Zoe will reinforce Jett (from time to time) when he voluntarily sits when at the kerbside.*

**Marking protocol: 1 mark for each of:** Antecedent

Behaviour

Consequence

Positive reinforcement

Shaping

**To maximum 4 marks**

**Question 9**

How does *stimulus discrimination* occur in operant conditioning? Explain with the use of an example. 4 marks

**Answer:** *It is the antecedent stimulus that is generalized and then discriminated. Little Johnny has learned that if he is in the supermarket – Supermarket door is antecedent, and he yells for a lolly (Behaviour) his mum will give him a lolly (Consequence - reinforcer). He then yells for a lolly as soon as they enter the door of any shop (Stimulus Generalisation) but if he only receives a lolly at the supermarket then he will cease yelling at other shop door and only yell at the supermarket door – Stimulus Discrimination has occurred.*

**Marking protocol: 1 mark for each of:**

Antecedent; Behaviour; Consequence; Stimulus generalization, **to maximum 3**.

**1 mark for:** Stimulus discrimination

**Question 10**

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

**Answer:** *The model is not similar to the child*

*The child does not like the model*

*The child is frightened of the model*

**Marking protocol: 1 mark:** For each of the above (or other appropriate characteristic) to maximum of 2 marks

**b.** Nick wants to use observational learning teach his six year old son, Billy, to put his toy train-set away when he has finished playing with it.

Describe the steps that Nick should use to achieve this. 5 marks

**Answer:** *Attention – Nick should put Billy’s toys away himself whilst ensuring that Billy is watching carefully, perhaps saying “Look Billy, I can put these back in the box two at a time…”*

*Retention – “Now Billy, did you remember how I put those toys away?”*

*Reproduction – “Can you show me that you are able to put this toy in a box?”*

*Motivation – Next time Billy has played with toys and puts them away to please Nick.*

*Reinforcement – “Hey, Billy, what a good boy, I’ll come out and play with you!”*

**Marking protocol: 1 mark for each of the five stages illustrated with an example.**

**Question 11**

Using the language of *classical conditioning* explain how Watson conditioned ‘Little Albert’ to fear a white rat and explain what Watson should have done to minimize possible harm to ‘Albert’. 5 marks

**Answer:** *Watson presented a white rat (neutral stimulus) to Albert who crawled towards it to play with it.*

*Watson struck an iron bar with a hammer just behind Albert’s head, making a loud noise (unconditioned stimulus).*

*Albert was frightened (unconditioned response) – fear of the loud noise.*

*This scenario was repeated several times in the phase of acquisition.*

*When the white rat was brought near to Albert (conditioned stimulus) he was frightened (conditioned response).*

*Watson should have presented the white rat to Albert many times and never accompanied it with an unpleasant stimulus, therefore extinguishing the conditioned response.*

**Marking protocol: 1 mark for each correct**

NS; UCS; UCR; CS; CR. To maximum of 4

**1 mark for Extinction**

**Question 12**

*This question refers to the research described below*

John is a VCE Psychology teacher at Riverside Secondary College, who is studying for a master’s degree in psychology.

He believes that students who exercise regularly will achieve a higher level of knowledge and understanding of psychology in Units 3 & 4 than those who take little exercise or have irregular exercise programs.

He considers students’ results in Units 1 & 2 Psychology and lists them in order of performance

There are 72 students in his psychology classes and all agree to take part when he outlines his proposed research. He obtains written consent from those aged 18 or over, and parental consent from younger students.

Each student is then asked to keep an ‘exercise diary’ for the year.

From the exercise diaries, John discovers that there are two clear groups of students, those who do 30 minutes or more of high aerobic exercise each day and those who take little exercise or exercise only once or twice each week.

The results of John’s research are shown below:

|  |  |  |
| --- | --- | --- |
|  | Average score in Units 1 & 2 (out of 50) | Average score in Units 3 & 4 (VCE Study Score) |
| Regular exercise | 37 | 38 |
| Irregular exercise | 35 | 33 |

Inferential statistics on the difference in change in mean score for the two groups showed that the difference was statistically significant.

Further analysis showed that the mean score for the exercise group was significantly greater than the mean score for the ‘irregular or no exercise group’.

**Question**

Construct a discussion containing identification of variables, a statement of hypothesis and

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

You should also identify weaknesses of the study in terms of sampling procedures; experimental procedures. 10 marks

***Variables:***

*Independent Variable (IV): Exercise; operationalized as regular exercise of 30 minutes or more per day vs irregular or no exercise*

*Dependent Variable (DV): Knowledge and understanding of psychology; operationalized as VCE study score in psychology.*

***Hypothesis:***

*It is hypothesized that students at Riverside Secondary College who take regular exercise during the year of studying Units 3 & 4 Psychology will lead to improved knowledge and understanding of psychology, compared with students who do not take regular exercise.*

*OR*

*It is hypothesized students at Riverside Secondary College undertaking VCE Units 3 & 4 Psychology who take regular exercise during the year of studying Units 3 & 4 Psychology will show greater improvement in their knowledge and understanding of psychology over the year, compared with students who do not take regular exercise.*

***Discussion***

*It was shown that the difference in scores between the students who engaged in regular exercise and those who did was statistically significant. Thus the hypothesis was supported.*

*(Similar comment for second possible hypothesis)*

*A convenience sample was used, thus the results may not be generalized beyond the psychology Unit 3 and 4 students at Riverside Secondary College.*

*It is therefore recommended that students of Units 3 & 4 Psychology at Riverside Secondary College should engage in regular exercise during the school year in order to gain a higher study score.*

**Marking protocol:**

Students adequately address each of the following content items:

Independent variable

Operationalisation of IV

Dependent variable

Operationalisation of DV

Statement of experimental (research) hypothesis

Statement of conclusion

Statement of generalisation and implications of conclusion

The VCAA has published criteria for the assessment of the extended response as follows:

The extended-answer question in Section B that is worth 10 marks and that does not have multiple parts will be assessed against 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

(VCAA Examination specifications 2016)

**Suggested distribution of marks:**

**8 – 10:** All criteria are addressed and the quality is well above that expected of the average VCE student

**6 – 7:** Most or all criteria are addressed but there are one or two that are not completely or competently addressed. The quality of the response is good but not outstanding

**4 – 5:** Attempts have been made to address most of the criteria but the quality of the response is barely adequate for a VCE student

**2 – 3:** A minority of the criteria have been attempted and the quality is inferior to that expected in a VCE student

**0 – 1:** No attempt or a very poor attempt has been made