

PSYCHOLOGY

Units 3 & 4 – Written examination



2015 Trial Examination

SOLUTIONS

Section A – Multiple-choice

Question 1

Answer: B

Explanation:

Decreased level of awareness, fewer content limitations, poor performance on controlled and automatic processing, perceptual and cognitive distortions are all signs of intoxication.

Question 2

Answer: B

Explanation:

Automatic processes require divided attention.

Question 3

Answer: C

Explanation:

Neurofibrillary tangles refer to the build up of tau protein within a neuron.

Question 4

Answer: C

Explanation:

Alpha waves occur whilst daydreaming.

Question 5

Answer: D

Explanation:

Nightmares occur during REM sleep.

Question 6

Answer: B

Explanation:

Muscle cataplexy (paralysis) occurs when we are dreaming.

Question 7

Answer: A

Explanation:

EMG measures muscle activity.

Question 8

Answer: B

Explanation:

In REM beta like waves occur which are high frequency and low amplitude waves.

Question 9

Answer: D

Explanation:

We typically have an average of 5 cycles per evening (4-6 cycles for most)

Question 10

Answer: D

Explanation:

Wernicke's area is located in the left temporal lobe.

Question 11

Answer: B

Explanation:

The longitudinal fissure separates the two hemispheres.

Question 12

Answer: C

Explanation:

Spatial neglect is usually a result of damage to the right parietal lobe.

Question 13

Answer: B

Explanation:

Afferent neurons take information to the CNS.

Question 14

Answer: D

Explanation:

Lateralisation refers to the fact that each hemisphere may specialise in specific functions.

Question 15

Answer: B

Explanation:

The sympathetic nervous system is responsible for stimulating the endocrine system.

Question 16

Answer: A

Explanation:

Left frontal lobe damage can lead to Broca's aphasia

Question 17

Answer: D

Explanation:

Cheryl may experience anomia.

Question 18

Answer: C

Explanation:

Maths, Science, writing and logical reasoning are predominantly left hemisphere specific.

Question 19

Answer: C

Explanation:

The hippocampus is responsible for forming declarative explicit memories and the amygdala is responsible for fear conditioning.

Question 20

Answer: D

Explanation:

Retrograde refers to the inability to recall events prior to the accident.

Question 21

Answer: A

Explanation:

Recognition is rarely affected in old age.

Question 22

Answer: A

Explanation:

Information from echoic memory usually fades within 3-4 seconds.

Question 23

Answer: D

Explanation:

The cerebellum is involved in processing procedural memories

Question 24

Answer: D

Explanation:

All statements are true.

Question 25

Answer: C

Explanation:

Proactive interference occurs when previously learnt information interferes with newly learnt information.

Question 26

Answer: A

Explanation:

This is an example of an acrostic.

Question 27

Answer: B

Explanation:

The multiple-choice involves recognition which is a more sensitive level of retention than recall, which is required by the short response questions.

Question 28

Answer: C

Explanation:

Approximately 60% will be recalled after 20 minutes.

Question 29

Answer: B

Explanation:

Free recall is the least sensitive level of retention.

Question 30

Answer: B

Explanation:

Iconic memory has an unlimited capacity, encodes information visually and has a duration of approximately 0.3 seconds.

Question 31

Answer: B

Explanation:

Suppression refers to the deliberate effort to block a memory.

Question 32

Answer: D

Explanation:

Elderly people do not have problems with recognition so this is incorrect.

Question 33

Answer: B

Explanation:

Retrieval failure is concerned with lack of accessibility; despite the fact that the memory is available.

Question 34

Answer: B

Explanation:

The left primary auditory cortex is used to process words and the right primary auditory cortex is used to interpret music.

Question 35

Answer: B

Explanation:

Running water is the CS.

Question 36

Answer: C

Explanation:

The UCS was the fear of being trapped whilst water gushed over her.

Question 37

Answer: A

Explanation:

UCS is being trapped whilst water gushed over her.

Question 38

Answer: C

Explanation:

Extinction has occurred.

Question 39

Answer: D

Explanation:

Spontaneous recovery refers to the reappearance of the CS in response to the CR after a period of extinction.

Question 40

Answer: C

Explanation:

Gambling machines work on a variable ratio schedule of reinforcement.

Question 41

Answer: B

Explanation:

Jack's employer is using a fixed interval schedule of reinforcement.

Question 42

Answer: B

Explanation:

Fixed interval schedules lead to the quickest rate of extinction.

Question 43

Answer: D

Explanation:

Aversion therapy is used to remove undesirable behaviours.

Question 44

Answer: B

Explanation:

Dendrites are the part of the neuron that receives messages.

Question 45

Answer: A

Explanation:

The ventral tegmental area is responsible for learning via rewards.

Question 46

Answer: B

Explanation:

The basal ganglia works with the cerebellum to learn motor tasks.

Question 47

Answer: D

Explanation:

Driving is dependent on learning.

Question 48

Answer: B

Explanation:

Myelination is involved in developmental plasticity only, not adaptive plasticity.

Question 49

Answer: A

Explanation:

A child crying in fear of a strange noise is a reflex action.

Question 50

Answer: C

Explanation:

The learner must be active when learning via operant conditioning.

Question 51

Answer: A

Explanation:

Jerome had not paid attention to his Dad's demonstration.

Question 52

Answer: B

Explanation:

Behaviour becoming controlled by its consequences refers to the law of effect.

Question 53

Answer: D

Explanation:

The cross-cultural approach to defining abnormality is not a formal approach.

Question 54

Answer: A

Explanation:

Acceptance of marijuana refers to normality in terms of the sociocultural approach (e.g. Amsterdam V's Australia)

Question 55

Answer: A

Explanation:

The functional approach refers to being able to support and care for oneself.

Question 56

Answer: B

Explanation:

Deviant behaviours are considered inappropriate.

Question 57

Answer: B

Explanation:

The DSM-IV-TR was developed by the American Psychiatric Association.

Question 58

Answer: D

Explanation:

Transitional approaches recognise that symptoms may worsen or improve over time.

Question 59

Answer: A

Explanation:

A graded approach recognises that symptoms can be graded in terms of severity.

Question 60

Answer: C

Explanation:

Categorical approaches do not avoid labelling.

Question 61

Answer: B

Explanation:

The IV is whether students used problem or emotion focused strategies.

Question 62

Answer: A

Explanation:

The DV is the students' test scores at the end of the week.

Question 63

Answer: A

Explanation:

Divorce was rated as number 2 of the stressful life events scale.

Question 64

Answer: C

Explanation:

An evaluation of our coping resources is part of the secondary appraisal.

Question 65

Answer: D

Explanation:

All of the above are strengths of the transactional model.

SECTION B - Short-answer responses

Question 1

- a. The association area of the frontal lobe includes all areas that are not part of the predominant primary cortex. Hence, areas such as the Broca's area is indeed an association area. The function of Broca's area is to enable the production of clear, fluent speech. Association areas are involved in integrating information between sensory and motor areas and higher-order mental processes (decision making, thinking, planning, initiating movement, analysis and language). 2 marks
- b. Jeremy may have problems producing clear and articulate speech if Broca's area is affected. Alternatively, if other areas are affected then mental processes such as decision making and planning may be affected.

Question 2

Dimensional systems can reduce the impact of labelling, they consider the severity of symptoms in more depth and consider how an individuals' condition has improved/declined and how treatment can be tailored for individual needs rather than a one size fits all approach. 2 marks

Question 3

- a. Variable ratio 1 mark
- b. Fixed Ratio 1 mark
- c. Fixed interval. This is because the reward will only occur at a certain time. Thus, there is no need to make any responses other than when the reward is actually due. 2 marks

Question 4

Key differences between classical and operant conditioning

	Observational Learning	Operant conditioning
Direct versus indirect learning	Indirect	Direct
The role of the learner	Active	Active
Observable versus unobservable evidence of learning	Not always observable	Observable

3 marks

Question 5

Experience dependent learning is when learning depends on specific experiences in order for learning to occur. This can happen at any time during an individual’s life as a result of experience.

Experience expectant learning occurs during sensitive periods and refers to the brain priming itself (getting ready) for exposure to certain experiences. For example, synaptogenesis occurs more readily in the first years of life in order to prepare the brain for learning. Experience is still necessary to learn.

Mark’s daughter is able to learn language easily during the early years of life as the brain has undergone proliferation of synapses to allow pathways for language to develop (experience expectant learning). However, the language Mark develops depends on the language he was exposed to during his early years (experience dependent learning).

4 marks

Question 6

Phase 1: Discriminative/antecedent stimulus – the command ‘sit’.

Phase 2: Operant response – Max sits

Phase 3: Consequence – Max receives a dog chew

3 marks

Question 7

Biological stress management techniques - Biofeedback is a technique that enables an individual to receive information ('feedback') about the state of a bodily process and, with appropriate training, learn to control a related physiological response using thought processes. During *biofeedback training*, electrical or mechanical sensors, like electrodes used on the EEG or a blood pressure cuff, are attached to the person. These sensors respond to a particular physiological response, such as tension in a particular muscle, blood pressure or skin temperature. The signals that are detected are then analysed and displayed, often visually (such as in a graph) or in an auditory form (such as sounds coming through earphones), to provide the person with information about the state of relevant bodily process. The person is then taught a series of physical and mental exercises designed to help them learn how to gain control over the physiological response that is being monitored.

A different biological treatment would be medication such as anti-anxiety drugs.

Psychological stress management techniques – Accept explanations of any suitable psychological methods such as counselling, meditation, relaxation, progressive muscle relaxation and physical exercise.

Social stress management techniques – Social support is help or assistance from other people when needed. The people who provide social support can vary from a network of family, friends, neighbours, and the community. Additionally, the nature of the support can also vary from emotional, physical and financial assistance. Social support may take the form of appraisal support, emotional support, tangible support or informational support.

6 marks

Question 8

Accept any suitable body system from HPA axis, sympathetic nervous system, cardiovascular system or the immune system. These systems help us to achieve physiological stability through change. For example, when we are exposed to an illness/virus/disease, white blood cells in the immune system increase their activity dramatically and this change helps us to achieve physiological stability. Similarly, when we take part in physical exercise the change that occurs in the cardiovascular system allows us to achieve a more stable and slow resting heart rate.

3 marks

Question 9

- a. Sally will have increased REM sleep as she is exhausted from mental activity. However, her husband Scott will have more NREM deep sleep as he is training for a marathon. This is because the restoration theory of sleep suggests REM sleep predominantly restores the activity of the brain by replenishing neural pathways and consolidating memories while NREM sleep replenishes the body and muscles.

3 marks

- b. An EEG could be used to support the restoration theory. Since deep NREM restores the body we would expect an EEG to show an increase in delta waves when Scott sleeps compared to Sally, since delta waves are displayed during deep sleep. Sally is likely to show an increase in beta like waves/sawtooth waves compared to her husband Scott. This is because beta waves are displayed during REM.

2 marks

Question 10

Proactive interference – information learned previously can interfere with our ability to remember new information, e.g. you use your old phone number instead of your new phone number.

Retroactive interference – new information interferes with the ability to remember old information. For example, you cannot recall your old phone number because you use digits from your new phone number.

3 marks

Question 11

Central Executive – This component will be attending to delivery of the theory and blocking out other distractions such as noises outside the classroom. The central executive will allow Simone to focus on the delivery of the theory as well as any students who are chatting.

Phonological Loop – This will be used by Simone so she can use sub-vocal rehearsal of what she is about to say, hence using her inner voice. She will also be using her inner ear to hold the sounds of student speech for several seconds until their whole sentences are spoken and she can interpret what they are saying.

Visuo-spatial sketchpad – This will be used by Simone when she visualises the concepts she is referring to (e.g. visualising the structure of a neuron).

6 marks

Question 12

- a. Accept any suitable non-leading question. For example, can you describe the offender's appearance?

1 mark

- b. This is a non-leading question. No clues are given regarding the expected appearance of the offender. Also, gender is not implied. For example, if a question was to ask 'describe the male's appearance' then there would be a presupposition that the offender was a male in order for the question to make sense.

2 mark

Question 13

- a. Implicit memories such as procedural memories do not tend to decline as we age. Explicit memories can decline as we age. Episodic memories can decline from the age of 30; we will not forget major significant episodes in our life but may forget some of the more mundane details. Semantic memories will decline at a slower rate than episodic.

4 marks

- b. Memory decline in old age is often a result of loss of confidence and motivation rather than neurological factors. However, Alzheimer's disease involves neuronal death as a result of amyloid plaques and neurofibrillary tangles. These processes are not involved in usual old age memory decline, although there may be some slowing down within the central nervous system.

3 marks

Question 14

Extraneous variables are variables other than the independent variable that can have an unwanted effect on the dependent variable.

Confounding variables are variables that have a systematic or measureable effect on the dependent variable and have acted as an additional unwanted variable. If confounding variables have had a systematic influence on the study, a researcher will be unable to draw conclusions.

Extraneous variables can become confounding variables if they are not controlled and have a systematic effect on the dependent variable. When potential extraneous variables are controlled they do not become confounding variables.

3 marks

Question 15

Critical period implies a behaviour must be learnt within a specific time & if something is not learnt then the window of opportunity has been missed & it can never be learnt. E.g. Some studies have suggested if we don't learn any language by a certain age, such as 13 years we will never learn a language. However, such studies rely on rare case studies as very few people have suffered such severe deprivation/isolation that they do not have 1 language and we can't generalise from such studies.

Many psychologists believe critical is a little too deterministic & the term sensitive period should be used to suggest certain behaviours are more easily learnt within a certain time & may be difficult to learn outside this time. We know infancy is a key sensitive period to learn multiple languages & it is more difficult outside this time to learn other languages.

4 marks

SECTION C – Extended response question

Question 1

Descriptive statistic: Mean (mean scores of 62 for the teaching strategy 1 condition and 88 for the teaching strategy 2 condition).

Inferential statistic: P-Value ($p=0.03$)

2 marks

Question 2

We can draw conclusions regarding the generalisability of these results since the results were statistically significant as there was a less than 5% possibility that the results were due to chance. Additionally a stratified sample was used since participants were selected from different sub-groups in terms of academic ability.

3 marks

Question 3

A suitable hypothesis may be;

Year 12 VCE students will achieve different test scores depending on the learning style used (visual, verbal or kinaesthetic).

The hypothesis must include the population, IV and DV to obtain the maximum marks.

Accept any suitable explanation of a sampling technique such as convenience, random, stratified or stratified random sampling. For example, the researcher used convenience sampling as he used the participants at the school where he worked. Once participants had been selected their names were placed into a hat and the first 10 selected were placed in the visual learning group, the second 10 selected were placed in the verbal learning group and the final 10 selected were placed in the kinaesthetic learning group. Thus, random allocation was used.

Since participants only took part in one condition, then an independent groups design was used.

Potential extraneous variables might include individual differences. Some participants will be more able than others regardless of which teaching style is used. Another extraneous variable might be the kind of homework students engage in; for example, they may take part in learning activities that are different to the condition to which they have been allocated.

10 marks