

PSYCHOLOGY

Units 3 & 4 – Written examination



2014 Trial Examination

SOLUTIONS

Section A – Multiple-choice

Question 1

Answer: A

Explanation:

Other responses include irrelevant points such as tiredness, daydreaming and alcohol consumption.

Question 2

Answer: C

Explanation:

Focused selective attention, divided attention, daydreaming, sleep, anaesthetised, coma is the correct continuum for levels of awareness.

Question 3

Answer: B

Explanation:

Level of awareness refers to how conscious we are of internal & external events.

Question 4

Answer: D

Explanation:

Content limitation refers to having logical and organised thoughts.

Question 5

Answer: D

Explanation:

Selective attention refers to the ability to focus on one stimulus whilst ignoring others.

Question 6

Answer: B

Explanation:

Deep sleep consists of high amplitude, low frequency brainwaves.

Question 7

Answer: B

Explanation:

Hypnic jerks occur in a hypnagogic state.

Question 8

Answer: D

Explanation:

D represents the likely sleep cycle for the first two sleep cycles in the evening.

Question 9

Answer: B

Explanation:

A typical sleep cycle will be 90 minutes long.

Question 10

Answer: B

Explanation:

Broca's area is located in the left frontal lobe.

Question 11

Answer: A

Explanation:

The corpus callosum allows interaction between the two hemispheres.

Question 12

Answer: C

Explanation:

The primary somatosensory cortex is located in the parietal lobe.

Question 13

Answer: C

Explanation:

Motor neurons take information away from the CNS.

Question 14

Answer: B

Explanation:

Localisation of function refers to the fact that specific areas of the brain are responsible for specific functions.

Question 15

Answer: C

Explanation:

The parasympathetic nervous system is responsible for digestion.

Question 16

Answer: A

Explanation:

The sympathetic nervous system activates the stress response.

Question 17

Answer: B

Explanation:

The parasympathetic nervous system helps Maxine to relax.

Question 18

Answer: D

Explanation:

The left hemisphere is responsible for problem solving (puzzles), the right hemisphere is responsible for drawing.

Question 19

Answer: C

Explanation:

The hippocampus is responsible for memory consolidation.

Question 20

Answer: C

Explanation:

Task C is most likely to be affected by age related memory decline.

Question 21

Answer: C

Explanation:

The duration of STM is approximately 18 seconds.

Question 22

Answer: D

Explanation:

The amygdala is responsible for processing emotional memories.

Question 23

Answer: B

Explanation:

The longer the link between the nodes the weaker the connection, thus B is inaccurate.

Question 24

Answer: D

Explanation:

Decay refers to memory traces fading.

Question 25

Answer: D

Explanation:

Narrative chaining refers to a mnemonic whereby we create a story.

Question 26

Answer: A

Explanation:

Tip-of-the-tongue phenomenon explains Emily's partial recall.

Question 27

Answer: B

Explanation:

Approximately 40% is lost within 20 minutes.

Question 28

Answer: C

Explanation:

Cued recall is the most sensitive measure of 'recall'. It is not A, since A is a measure of retention not recall.

Question 29

Answer: C

Explanation:

Episodic memories can start to decline from the age of 30-50.

Question 30

Answer: A

Explanation:

Repression is not a technique for improving memory.

Question 31

Answer: D

Explanation:

Elderly people perform just as well as younger people on recognition tasks.

Question 32

Answer: C

Explanation:

This is an example of an acrostic.

Question 33

Answer: C

Explanation:

Anterograde amnesia refers to the inability to store memories after the trauma.

Question 34

Answer: D

Explanation:

The whistle is the discriminative (antecedent) stimulus.

Question 35

Answer: B

Explanation:

The bone is the consequence.

Question 36

Answer: A

Explanation:

The roll over is the operant (behavioural) response.

Question 37

Answer: B

Explanation:

Learned responses may become extinct if reinforcement discontinues.

Question 38

Answer: C

Explanation:

Observational learning occurred even in the absence of direct reinforcement/punishment.

Question 39

Answer: D

Explanation:

Crawling is dependent on maturation, NOT learning.

Question 40

Answer: D

Explanation:

Plasticity refers to neuronal changes that occur as a result of experience.

Question 41

Answer: C

Explanation:

Children's brains show both developmental and adaptive plasticity.

Question 42

Answer: A

Explanation:

The hippocampus, amygdala and cerebral cortex are involved in learning.

Question 43

Answer: B

Explanation:

Glutamate is a neurotransmitter involved in learning.

Question 44

Answer: C

Explanation:

Learning occurs when the CS produces a CR in the absence of the UCS.

Question 45

Answer: D

Explanation:

Fixed action patterns ensure the animal is able to meet its survival needs.

Question 46

Answer: A

Explanation:

The stages of observational learning are: attention, retention, reproduction, motivation and reinforcement.

Question 47

Answer: B

Explanation:

All other responses are NOT dependent on learning.

Question 48

Answer: B

Explanation:

Little Albert was left with a strong fear.

Question 49

Answer: C

Explanation:

Jerome was unable to reproduce the behaviour.

Question 50

Answer: B

Explanation:

Instrumental learning refers to learning the association between behaviour and the consequences.

Question 51

Answer: C

Explanation:

Health is a state of physical, mental and social wellbeing.

Question 52

Answer: A

Explanation:

Polygamy is abnormal in terms of a sociocultural perspective.

Question 53

Answer: D

Explanation:

Tom's behaviour is abnormal according to the situational approach.

Question 54

Answer: C

Explanation:

Thoughts, feelings and behaviours that interfere with our ability to function are dysfunctional.

Question 55

Answer: B

Explanation:

ICD and DSM are both categorical systems.

Question 56

Answer: D

Explanation:

A – C are all correct in terms of a dimensional approach.

Question 57

Answer: C

Explanation:

DSM – V has been recently published.

Question 58

Answer: C

Explanation:

Dimensional approaches do not label in the same way that a categorical approach would.

Question 59

Answer: D

Explanation:

Chemical imbalances in the brain are a biological factor.

Question 60

Answer: B

Explanation:

Whether students exercise or carry out relaxation techniques is the IV.

Question 61

Answer: C

Explanation:

The DV is students' stress levels at the end of the week.

Question 62

Answer: C

Explanation:

Independent groups design was used, since two separate groups were used for each condition.

Question 63

Answer: D

Explanation:

Death of a spouse has 100 LCU's.

Question 64

Answer: A

Explanation:

‘Emotional forecasting’ refers to predicting what feelings a given situation will produce.

Question 65

Answer: A

Explanation:

Rapid heart rate (physical), poor concentration (cognitive), anxiety (emotional/affective) and nail biting (behavioural).

SECTION B - Short-answer response**Question 1**

The primary motor cortex; frontal lobe.

2 marks

Question 2

Homunculus – Represents the disproportionate area of the primary somatosensory cortex devoted to different parts of the body. The smaller and more sensitive the body part the larger the area in the cortex.

1 mark

Question 3

The DSM is preferable to the ICD because the DSM is more detailed and includes information about the course, prognosis and prevalence of each disorder, whereas the ICD does not.

2 marks

Question 4

Shaping is a procedure in which a reinforcer is given for any response that successively approximates and ultimately leads to the final desired response, or target behaviour. (1 mark) Thus Louise will be reinforced for successive approximations that work towards completing the task of being able to handwrite. Initially she may be rewarded for writing isolated letters and then for writing words (1mark) etc.

(Must relate to Louise and the scenario to gain both marks).

2 marks

Question 5

	Classical Conditioning	Operant Conditioning
Role of the Learner	Passive (no control over the learning process)	Active (control over the learning process)
Timing of Stimulus and Response	CS should be presented shortly before the UCS.	Reinforcement and punishment is given as soon as possible after the desired response.
Nature of the Response	Reflexive (involuntary)	Voluntary

5 marks

Question 6

- a. Variable ratio (e.g., gambling)
Variable interval (e.g., fishing)
Accept any suitable examples.

2 marks

- b. Variable ratio is so resistant to extinction because every response has the potential to be rewarded. Variable interval is so resistant to extinction because reinforcement can occur at any time.

2 marks

Question 7

- a. CS = The sound of Katy's car engine pulling into the driveway. UCR = Sam being very excited and barking at the prospect of being taken for a walk.
2 marks
- b. Stimulus discrimination has occurred whereby Sam only responds to the sound of Katy's car and not other cars.
2 marks

Question 8

- a. Longitudinal fissure; Corpus Callosum
- b. Language comprehension and language production (also accept other suitable functions of the left hemisphere).
3 marks

Question 9

- a. Allostasis refers to the body's ability to maintain a stable physiological environment by adjusting and changing to meet internal and external demands. However, homeostasis refers to the body's ability to maintain a stable physiological environment by staying the same (or within set limits).
2 marks
- b. Problem focused coping strategies involves efforts to manage or change the cause of the stressor, and tend to be used when we have the potential to change the stressor. For example, we might decide to complete all work promptly when we have many deadlines. However, emotion focused strategies attend to our emotional responses to the stressor, thus strategies look at decreasing the emotional component of a stressor (e.g. denial).

Responses must have a definition and example for each for the 2 marks.

2 marks

Question 10

- a. GSR – A physiological response that indicates the changes in the resistance of the skin to an electrical current (electrical conductivity of the skin).
1 mark
- b. EEG detects, amplifies and records the electrical activity of the brain. If students are in an alert state then Beta waves would be evident.
2 marks

Question 11

- a. Psychological effect – accept any suitable examples. For instance, memory problems, distorted perceptions, mood disturbances, poor decision making and so on.
Physiological effect – slower physical reflexes, droopy eyelids, headaches, lower energy and so on.

2 marks

- b. Accept any of the following two points:

- a very short period of drowsiness or sleeping
- the person appears to be awake
- EEG patterns resemble that of early stage NREM sleep
- individuals usually have no recollection of events following a micro-sleep

2 marks

- c. Sarah is likely to sleep for longer in the few nights following sleep deprivation. For example, she may sleep for 12-15 hours on the first evening, 10-13 hours on the second evening and 9-10.5 hours on the third evening. She will not make up the full amount of sleep debt. She may also experience REM rebound due to missed REM sleep, whereby she will spend longer time in REM sleep.

2 marks

Question 12

Sleep cycle of a neonate – A neonate will sleep for an average of 16 hours per day and spend 50% of this time in REM sleep.

Sleep cycle of an elderly person – Average sleep time may be 6-7 hours with approximately 30% spent in REM sleep. Sleep also tends to be lighter with more awakenings. NREM stages 3 & 4 reduce, as do sleep spindles and K-complexes that are experienced in NREM stage 2 sleep.

2 marks

Question 13

The sensory receptors in Ian's skin would send a message via afferent neurons up the ascending tract to the spinal cord that something very hot has been touched. The afferent neurons would then connect to the interneurons in the spinal cord, which would relay the message to efferent neurons to pull the hand away. This is the spinal reflex/reflex arc.

4 marks

Question 14

Structural/visual processing – Is the word in capitals? ACETONE.

Phonetic processing – Does this word rhyme with dome?

Semantic processing – Is acetone used in nail polish remover?

3 marks

Question 15**a.**

	Capacity	Duration	Encoding
Short Term Memory	5-9 items/average 7	15-30 seconds/18 average	Acoustic, visual
Long Term Memory	Unlimited	Unlimited	Semantic

3 marks

- b.** Chunking (1), this is the grouping of bits of separate information into a larger unit that can be remembered as a single unit (2).

3 marks

Question 16

Cortical atrophy – shrinkage of the cerebral cortex.

Degeneration of brain neurons.

Amyloid plaques – amyloid plaque is a neurotoxic substance that kills the brain cells, they are a build up of proteins which prevent communication between neuron.

Neurofibrillary tangles – blobs and tangles of nerve fibres preventing communication between neurons.

2 marks

Question 17

Mental health is the capacity of an individual to interact with others in the environment in ways that promote subjective wellbeing, optimal development throughout the life span and effective use of their cognitive, emotional and social abilities. However, mental illness refers to a psychological dysfunction that usually involves impairment in the ability to cope with everyday life, distress, and thoughts, feelings and/or behaviour that are atypical of the person and may be inappropriate within their culture.

2 marks

Question 18

Biological factors – discussion of fight/flight response, HPA axis, allostasis and homeostasis.

Psychological factors – the transactional model of stress and coping, coping strategies used such as relaxation, exercise.

Social factors – major life events, acculturation, environment (crowding).

3 marks

Question 19

Accept any appropriate type of social support such as:

Appraisal Support:

Support that helps our understanding of the stressful event, resources and coping strategies for dealing with it. Through the exchange of appraisals, a person can determine how threatening a stressor is likely to be and reduce uncertainty about the stressor and its impact.

Tangible Support:

The provision of material support. For example, services, financial assistance/goods. We may cook a meal for someone who has lost a loved one so they do not have to perform routine chores at a time when their energy for such tasks is low.

Information Support:

Information about how to cope with stressful life events may help. For example, a student struggling with workload may get information from another student about how they cope with the demands.

Emotional Support:

Targets the emotional reactions by assuring the individual experiencing stress that they are loved and valued. Warmth and nurturance provided by others can enable a stressed person to approach the situation more confidently.

2 marks

SECTION C – Extended response question

Question 1

Independent groups were used. A disadvantage is participant variables.

2 marks

Question 2

Participant variables could be eliminated by using a repeated groups design, whereby the same participants take part in both conditions.

2 marks

Question 3

Convenience sampling.

1 mark

Question 4

Introduction:

A mnemonic device is a technique for enhancing memory.

Acronym is a mnemonic device used whereby a word or pronounceable syllable is made up of the first letters of the items we are trying to remember or the words in the phrase we are trying to remember. For example, ANZAC (Australian and New Zealand Army Corps). However, an acrostic is a mnemonic device that involves making verbal associations for items to be remembered by constructing phrases containing words that begin with the first letters of the information to be remembered. For example, old aged pensioners like greens (oral, anal, phallic, latency, genital).

A suitable aim may be:

The aim of this experiment is to investigate whether acrostics or acronyms lead to higher recall.

The independent variable is whether participants use acrostics or acronyms to learn the 20 Sociology key terms.

The dependent variable is how many of the 20 Sociology terms are recalled.

Discussion:

There is no significant difference between the conditions, thus there is no difference in the rate of recall depending on whether participants use acronyms or acrostics. Therefore the hypothesis would be rejected since the level of probability the results were due to chance is higher than 5%.

The results cannot be generalised to a wider population of students since a convenience sample was used which is not representative. Additionally, there was not a significant difference between the conditions since the probability of the results occurring by chance is greater than 5%.