B

Free Exam
for 2013-16 VCE study design

Engage Education Foundation

Units 3 and 4 Psychology

Practice Exam Solutions

Stop!

Don't look at these solutions until you have attempted the exam.

Any questions?

Check the Engage website for updated solutions, then email practiceexams@ee.org.au.

Section A – Multiple-choice questions

Question 1
The correct answer is A. Anterograde amnesia causes a loss of the ability to form new declarative memories (such as remembering new names) for information experienced after the person sustains brain damage.

Question 2
The correct answer is C. Retrieval cues are the central concept in the retrieval failure theory.

Question 3
The correct answer is C.

Question 4
The correct answer is D. The symptoms described in answers A, B and C are characteristic of total sleep deprivation, not partial.

Question 5
The correct answer is A.

Question 6
The correct answer is A.

Question 7
The correct answer is C. Sleep deprivation interferes with our ability to perform simple tasks like screwing the tops onto tubes of toothpaste.

Question 8
The correct answer is A.

Question 9
The correct answer is D. Since reinforcement cannot be predicted, a variable-interval schedule produces a very low but very steady rate of responding.

Question 10
The correct answer is B. The answer is not D as she only enjoys the occasional drink and does not drink excessively.

Question 11
The correct answer is A.

Question 12
The correct answer is C. By age 90, stage 3 and 4 NREM sleep, which is defined by the predominance of Delta waves is rarely, if at all, experienced. Option D is incorrect because the male would not enter REM sleep (Beta with sawtooth waves) straight from Stage 2 sleep (Theta).

Question 13
The correct answer is D. Sam's mother is taking something away in order to decrease an undesired behaviour, and this is therefore negative punishment.

Question 14
The correct answer is A. The parasympathetic nervous system counterbalances the activities of the sympathetic nervous system. The sympathetic nervous system dilates the pupils, therefore the parasympathetic nervous system contracts them.

Question 15
The correct answer is B. Joan is experiencing spatial neglect of the left side of her vision and therefore has damage to the right parietal lobe.

Question 16
The correct answer is C.

Question 17
The correct answer is D.

Question 18
The correct answer is D. The recognition of emotional responses is a function of the temporal lobe.

Question 19
The correct answer is B.

Question 20
The correct answer is B.

Question 21
The correct answer is D. The mouth and hands are two of the most sensitive body parts. The amount of cortex developed to a particular body part corresponds to the sensitivity of the body part.

Question 22
The correct answer is A.

Question 23
The correct answer is B. Content limitations decrease during daydreaming.

Question 24
The correct answer is B. A simple way to remember is that ALlostasis AL-ternates bodily functions.

Question 25
The correct answer is C. The temporal lobe is responsible for the storage and consolidation of declarative memories, such as phone numbers.

Question 26
The correct answer is B. Benzodiazepines stimulate the function of GABA (an inhibitory neurotransmitter) in order to produce a calming effect and they are therefore GABA agonists.

Question 27
The correct answer is D. Be careful to note that the question is asking for PHYSIOLOGICAL effects, NOT PSYCHOLOGICAL effects.

Question 28
The correct answer is B.

Question 29
The correct answer is A.

Question 30
The correct answer is D. The pons is a brain structure that is believed to control the activation of REM sleep.

Question 31
The correct answer is B. If you're having trouble remembering which axis is which, why not try using a memorisation technique such as rhyming eg. Axis 1 – clinically disordered fun, Axis 2 – is your personality true, Axis 3 – medical fee, Axis 4 – is your environment sure, Axis 5 – how good are you at being alive (do you make GAF-fes?). See which method works best for you.

Question 32
The correct answer is D.

Question 33
The correct answer is B.

Question 34
The correct answer is C. NREM stages 3 and 4 are the stages where the most physical growth, tissue repair and recovery from the effects of fatigue occurs.

Question 35
The correct answer is B. The somatic nervous system controls the skeletal muscles. Please note the spinal reflex is not used when moving our hand away from a WARM object. It would be used if moving our hand away from a HOT object.

Question 36
The correct answer is C. The recency effect does not occur when words are recalled in order, because by the time we try to recall words at the end of the list, they are no longer in our short term memory.

Question 37
The correct answer is D.

Question 38
The correct answer is D. She has coerced students into participating in the study by only giving revision classes to the students who are involved.

Question 39
The correct answer is B. It may seem that a matched participant design was used as there are an equal number of boys and girls in each group, however they have not been matched on any other participant characteristic. Considering this fact and the fact that both groups are involved in both conditions, it more closely resembles a repeated measures design.

Question 40
The correct answer is C. Experimenter effect is least to occur likely as Mr Euler conducts the experiment and does not know what the results obtained should indicate.

Question 41
The correct answer is B.

Question 42
The correct answer is C.

Question 43
The correct answer is A.

Question 44
The correct answer is A.

Question 45
The correct answer is A. Alzheimer's involves increased levels of amyloid, which is a neurotoxic substance that causes the development of plaques and tangles.

Question 46
The correct answer is D.

Question 47
The correct answer is D.

Question 48
The correct answer is A.

Question 49
The correct answer is C.

Question 50
The correct answer is B.

Question 51
The correct answer is D.

Question 52
The correct answer is A.

Question 53
The correct answer is A.

Question 54
The correct answer is D.

Question 55
The correct answer is B.

Question 56
The correct answer is D.

Question 57
The correct answer is C. The knowledge of *where* her seat (rather than the number of the seat for example) is spatial memory, which is a subset of episodic memory.

Question 58
The correct answer is C.

Question 59
The correct answer is A. Fixed action patterns develop through maturation.

Question 60
The correct answer is D.

Question 61
The correct answer is C. The amygdala is responsible for emotional memory and classical conditioning.

Question 62
The correct answer is B.

Question 63
The correct answer is A.

Question 64
The correct answer is A.

Question 65
The correct answer is C.

Section B – Short-answer questions

Marks allocated are indicated by a number in square brackets, for example, [1] indicates that the line is worth one mark.

Question 1a

- Classical conditioning is a form of learning involving the repeated association of two (or more different stimuli), until one stimuli consistently produces a response it did not previously produce. [1]
- Operant conditioning is a form of learning that depends on the association of a particular behaviour with the presentation of reward or punishment. [1]
- Both types of conditioning come about as a result of the repeated association of two events that occur close together in time. [1]
- In classical conditioning the role of the learner is usually passive as the reaction is a reflexive involuntary one, whereas in operant conditioning the role of the learner is active as the response is usually voluntary (however it may be involuntary). [1]

Question 1b

- In classical conditioning, acquisition involves the association of a conditioned stimulus and an unconditioned stimulus through their appearance close together in time. [1] In relation to Jenna, an association has formed between talking to her friend on the phone (a conditioned stimulus) and being in a car accident (an unconditioned stimulus). [1]
- Extinction is the gradual decrease in the strength or rate of a conditioned response when the conditioned stimulus is repeatedly presented without the unconditioned stimulus accompanying it. [1] In Jenna's situation, extinction may occur if she keeps taking Rebecca's calls and no second car accident occurs. [1]
- Spontaneous recovery is the reappearance of a conditioned response after it has been extinguished. [1] This would be considered to have occurred with Jenna if she stopped fearing talking to Rebecca on the phone, but then randomly became fearful again when Jenna called. [1]

Question 2

- Consciousness is the awareness of objects and events in the external world and of our own existence and mental experiences at any given moment [1]
- Consciousness is personal, selective, continuous and changing. [1]

Question 3

Phobias are learnt through experience, or the association of two stimuli or events such as in classical conditioning. [1] For example, Sam may have a phobia due to forming an association with spiders and a spider bite since being bitten by one. [1]

Phobias are maintained through operant conditioning. [1] For example, when he begins to become anxious when confronted with spiders, his parents may cuddle and comfort him in an attempt to make him feel better. Through cuddling and comforting Sam, his parents are positively reinforcing him to fear spiders. [1]

Question 4

Any four of:

- Less control over the content of consciousness [1]
- Lower level of awareness of external stimuli and personal awareness [1]
- High level perceptual distortions [1]
- High level cognitive distortions [1]
- Distorted time orientation [1]
- Distorted emotional awareness [1]
- Low-level self-control [1]

Question 5a

- Oliver may have experienced a sleep-wake shift cycle, meaning he has had a hormonally induced shift of the body clock forward by one to two hours, making him sleepier one or two hours later. [1]
- This may mean he is getting insufficient sleep (less than the recommended 9-10 hours) as although he is falling asleep later, he still has to get up early for school. [1]
- Oliver may also be experiencing disrupted sleep patterns because he stays up doing homework or socialising on the internet. [1]
- This would mean his sleep cycle is irregular as he may stay up on week nights and then wait until the weekend to catch up on this lost sleep by sleeping in. [1]

Question 5b

- An EEG detects, amplifies and records the electrical activity spontaneously generated by the brain during sleep and dreaming. [1]
- It can be used to determine which stage of NREM sleep one is in or if they are in REM sleep. [1]
- An EMG detects, amplifies and records the electrical activity of muscles. [1]
- It can be used to indicate changes in muscle activity and tone or tension. [1]
- An EOG is a device used for measuring eye movements or eye positions by detecting, amplifying and recording electrical activity in eye muscles that control eye movements. [1]
- It is used to determine whether a sleeper is in REM or NREM sleep. [1]

Question 6

- For Alison, driving is a controlled process as it is a new activity for her, meaning it requires selective attention. [1]
- Therefore her processing of information involves conscious, alert awareness and mental effort in which she actively focuses her attention on driving.
- For Alison's mother, driving is an automatic process because she has practiced it many times. [1]
- Therefore it requires little conscious awareness and mental effort and minimal attention. Consequently driving does not interfere with the performance of other activities such as conducting a conversation. [1]

Question 7

1) Inhibition [1] – involved in screening out irrelevant material (e.g. Simba may not notice a flock of birds in the sky above him because this is irrelevant to him at that moment) [1]

2) Switching [1] – changing attention from one item to another (e.g. Simba may switch his attention from how far away the flock is behind him to the tree ahead of him) [1]

3) Updating [1] – modifying items brought in from LTM before re-committing them to memory through the episodic buffer (e.g. the way Simba perceives wildebeests may change after this experience as the memory of them will be updated to accommodate for the new information that they are dangerous) [1]

Question 8

- He would be incapable of forming new declarative memories, including both episodic and semantic memories. [1]
- He would still be able to form new procedural memories. [1]
- It can therefore be concluded that the hippocampus is a memory formation area where the brain temporarily holds and processes declarative information to be remembered. [1]

Question 9

Changes in the brain's neural structure that occur to enable adjustment to experience, to compensate for lost function of to maximise remaining function in the event of brain damage.

Question 10

- Stress may be caused by social factors including social readjustment which refers to the amount of change in lifestyle is forced to make following a specific event in their life. Any adjustment in lifestyle can cause stress in varying amounts, depending how great a change of behaviour, thinking or feeling it involves. [1]
- Cultural factors such as racism-related stress may cause stress. Being a victim of racism is associated with anxiety disorders, depression, diabetes and hypertension. [1]
- Environmental factors such as crowding (the feeling of being cramped or having less space than preferred) may contribute to the stress response. People living in higher population areas commonly exhibit more stress than those living in lower population areas. [1]

Question 11

Answers are not provided for this question as they will vary depending on which disorder and which technique is chosen. Ask your teacher or tutor to look over your work and suggest improvements.

Question 12

Any 3 of the following:

- Proliferation [1]: the unborn baby's cells that will become neurons divide and multiply [1]
- Migration [1]: newly formed neurons move outward to their destined location [1]
- Circuit formation [1]: the axons of new neurons grow out to target cells and form synapses with them (e.g. axons of motor neurons grow to the spinal cord where synapses are formed with other neurons on this location). [1]
- Circuit/synaptic pruning [1]: elimination of excess neurons and synapses, that is, those that have not established a connection with a target cell die. [1] During this process, synapses may be strengthened or weakened in accordance to whether their presynaptic and postsynaptic neurons fire together (if a neuron does not fire together with its neighbouring neurons, it is probably in an inappropriate area, and may be part of circuit pruning).
- Myelination [1]: the process whereby the axons of the neurons in the brain become covered in myelin (white, fatty, waxy substance) which protects the axons from electrical interference from other neurons and speeds up the rate of transmission of signals within the neuron. [1]

Question 13

Any one of the following:

- Acetycholine – responsible for memory, learning, muscle movement, cerebral cortex activation, REM sleep, hippocampus [1 mark for any function]
- Dopamine – facilitates movement, attention, learning, reinforcement [1 mark for any function]
- Serotonin – regulates mood, eating, sleep, arousal, pain [1 mark for any function]
- Glutamate – necessary for changes in synapses that occur with memory formation [1 mark]

Section C – Extended response questions

Question 1
A research hypothesis for this question must identify the research population [1], the independent variable [1] and the effect this variable is hypothesised to have on the dependent variable [1]

Question 2
Dr Gilderoy is breaching the ethical principle of voluntary participation by offering participants a financial incentive [1] and he has failed to debrief participants on the deception used in the study [1]

Question 3
A variety of answers may be acceptable for this question and it is important to receive individual feedback on the way you have answered it – ask your teacher or tutor to look over your work and suggest improvements. Section C is marked more on the overall standard of the question than on specific points for which marks are allocated, but high-scoring answers could mention the following:

- The hypothesis cannot be considered supported due to the p value being 0.07 and there therefore being a higher than 5% chance that the difference in results between experimental conditions was due to chance factors alone.
- Conclusions cannot be drawn, due both to the hypothesis being rejected and the fact that the sample of brain surgery patients cannot be considered to be representative of the human population.
- The relevance of this study to Craik and Lockhart's theory of Levels of Processing, including mention of how the experiment tested the strength of various types of encoding and an evaluation of how this experiment, if conducted in such a way as to be statistically significant, could aid in further investigating this theory. The inclusion of the percentages of words that are recalled after each type of encoding according to Craik and Lockhart would further elevate the quality of the answer.
- The following weaknesses could be discussed, along with appropriate measures to combat them in future research:
    - The use of a non-representative sample. Solution: use stratified-random sampling
    - The use of convenience sampling (making the sample more likely to be non-representative). Solution: as above
    - Non-standardised environment and procedure for each question – the fact that different researchers asked each question and each question was asked in a different room means that these factors may have acted as confounding variables and influenced the extent to which words from the different experimental conditions were recalled. Solution: standardise environment and procedures, same researcher asking all the questions
    - Boredom effects may have acted as a confounding variable, as by the time participants got to the 3rd experimental condition (Question 3) their memorisation of the words in this condition could have been impaired by boredom. Solution – Instead of asking one question about 20 consecutive words, the researcher should not ask the same question for more than 2 consecutive words.
- A concluding sentence stating that the elimination of confounding variables through the above procedures could aid in making this research more statistically significant and thus enabling Craik and Lockhart's theories of memory encoding to be further tested.