



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.

Question 2

The correct answer is C.

Question 3

The correct answer is C.

Question 4

The correct answer is B.

Question 5

The correct answer is C.

Question 6

The correct answer is A.

Question 7

The correct answer is B.

Question 8

The correct answer is C.

Question 9

The correct answer is D.

Question 10

The correct answer is A.

Question 11

The correct answer is C.

Question 12

The correct answer is A.

Question 13

The correct answer is C.

Question 14

The correct answer is D.

Question 15

The correct answer is B.

Question 16

The correct answer is A.

Question 17

The correct answer is A.

Question 18

The correct answer is A.

Question 19

The correct answer is A.

Question 20

The correct answer is B.

Question 21

The correct answer is B.

Question 22

The correct answer is B.

Question 23

The correct answer is A.

Question 24

The correct answer is C.

Question 25

The correct answer is C.

Question 26

The correct answer is A.

Question 27

The correct answer is B.

Question 28

The correct answer is A.

Question 29

The correct answer is C.

Question 30

The correct answer is C.

Question 31

The correct answer is C.

Question 32

The correct answer is C.

Question 33

The correct answer is B.

Question 34

The correct answer is C.

Question 35

The correct answer is B.

Question 36

The correct answer is D.

Question 37

The correct answer is C.

Question 38

The correct answer is C.

Question 39

The correct answer is A.

Question 40

The correct answer is C.

Question 41

The correct answer is A.

Question 42

The correct answer is A.

Question 43

The correct answer is C.

Question 44

The correct answer is A.

Question 45

The correct answer is B.

Question 46

The correct answer is B.

Question 47

The correct answer is B.

Question 48

The correct answer is C.

Question 49

The correct answer is A.

Question 50

The correct answer is A.

Question 51

The correct answer is B.

Question 52

The correct answer is B.

Question 53

The correct answer is B.

Question 54

The correct answer is D.

Question 55

The correct answer is C.

Question 56

The correct answer is B.

Question 57

The correct answer is B.

Question 58

The correct answer is D.

Question 59

The correct answer is B.

Question 60

The correct answer is B.

Question 61

The correct answer is D.

Question 62

The correct answer is B.

Question 63

The correct answer is C.

Question 64

The correct answer is C.

Question 65

The correct answer is D.

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

Reuben is using controlled processing.

Question 1b

Monica is using automatic processing.

Question 1c

Because Reuben is still learning to drive, and is undertaking controlled processing, he needs to actively focus his attention on achieving his goal (driving). This active focus is needed to consolidate information and form neural connections. Interruptions in attention to Reuben, therefore, slow down his learning processes. For Monica, as she is already autonomous in the task of driving, she requires little conscious awareness and mental effort to drive. Therefore, conversing with passengers does not affect her driving.

[1 mark for describing a difference of controlled/automatic processing, 1 mark for describing how that difference interferes with the transition from controlled to automatic processing]

Question 2a

Three of:

- hand tremors
- droopy eyelids
- slurred speech
- increased sensitivity to pain

[1 mark for each correct physical sign, up to 3 marks]

Question 2b

Two of:

- depression
- hallucinations
- delusions
- paranoia

[1 mark for each correct psychological symptom]

Question 3a

Fixed action patterns are more complex responses, consisting of a sequence of actions, whereas reflexes are usually a single/simple response. [1]

Question 3b

Answers to this question will vary.

Fixed action pattern: Kelp Gulls pecking the red spot on the mother bird's beak to induce regurgitation.

Reflex: blinking when air is blown into your eye.

[1 mark for an appropriate fixed action pattern, 1 mark for an appropriate reflex]

Question 4

Sensitive periods: certain periods in development when humans are suited to learning particular things [1]. For example, young children/toddlers learning language [1].

Critical periods: more definite, and only occur in animals - if learning does not occur during this time, it will not be learned [1]. For example, imprinting with ducklings on their mother must occur within hours of being born [1].

Question 5a

Bell [1]

Question 5b

Unconditioned [1]

Question 5c

Bell: Conditioned stimulus [1]

Salivation in response to the bell: Conditioned response [1]

Question 5d

Stimulus discrimination [1]

Question 5e

Extinction [1]

The bell (CS) is no longer presented with the food (UCS), so the salivation (CR) no longer occurs. [2]

Question 6a

Sympathetic nervous system [1]

Question 6b

- pupils dilate
- tear ducts open
- saliva dries up
- respiration increases
- digestion slows

[1 mark for each correct example, maximum 2 marks]

Question 6c

Parasympathetic nervous system [1]

Question 7a

Spatial neglect [1]

Jason would be unaware of any stimuli in the left visual field [1]

Question 7b

Adaptive plasticity refers to the changes occurring in the brain's neural structure that enable adjustment to experience, lost function and maximise remaining functions in the event of brain damage. [1]

Adam may be able to adjust his neural connections to maximise the remaining functions, and lessen the severity of his condition that resulted from the accident. [1]

Question 7c

Adaptive plasticity can occur at any point in the life span, however it is more substantial during infancy as the brain is more malleable and is also undergoing developmental plasticity. [1]

Adaptive plasticity may occur to Adam, even as an adult, and he may regain some function in the right parietal lobe, lessening the severity of his spatial neglect [1]

Question 8a

Consolidation theory [1]

Question 8b

30 minutes for the physical changes in the brain to occur [1]. There must be no interruptions during this time, for example, brain damage or interference of contradicting information, as this will result in the information not being embedded in long-term memory. The hippocampus plays an important role in memory formation and must not be damaged. [1]

Question 8c

Two of:

- sprouting and rerouting of dendrites
- bushier dendrites
- more neural connections
- strengthening of synapses/shortening of synapses

[1 mark for each correct example, maximum 2 marks]

Question 9a

Stress: a state of psychological or physiological arousal produced by an internal or external stressor that is perceived by the individual as challenging or exceeding their ability or resources to cope [1]

Question 9b

Eustress is a positive psychological response to a stressor, as indicated by positive psychological states such as feeling enthused [1].

Distress is a negative psychological response to a stressor, as indicated by negative psychological states such as feeling angry [1].

Eustress example: Feeling jittery on your wedding day.

Distress example: being angry about being stuck in traffic, and the increasing possibility of being late to work.

[1 mark for both examples being correct]

Question 10a

Intense light, intense heat, dehydration and so on.

[1 mark for each correct example of a physical stressor, maximum 2 marks]

Question 10b

Worry of school homework, work deadlines, upcoming sporting tournament, looming chores to do at home and so on. [1 mark for each correct example, maximum 2 marks]

Question 11a

The serial position effect explains that there is often superior recall of the first few and last few items in a list to remember. [1]

The primacy effect explains why the first few items are recalled more readily than the rest. It is because the items have undergone 'maintenance rehearsal' and have been repeated, allowing them to move into the LTM. For the list above, dog, hat and mug would be more likely to be recalled than plate, pillow, book etc. [1]

The recency effect explains why the last few items are recalled more readily than the rest. It is because the last few items are still available in the short term memory [1]. The items cat, chalk and milk, are still likely to be recalled, as they are still fresh in the short term memory. [1]

Question 11b

Primacy effect [1]

Question 11c

Recency effect [1]

Question 12

According to meaning. [1]

Information is encoded in overlapping networks (grids/hierarchy), of concepts (nodes). These nodes are linked to each other, and as they activate each other, information can be retrieved. [1]

Question 13

Attention - Daniel would watch volleyball videos and pay attention to the spiking action [1]

Retention - Daniel would take in the information and play it in his mind (visual representation) [1]

Reproduction - Daniel would attempt a volleyball spike [1]

Motivation - Daniel must have adequate motivation to want to learn how to spike. [1]

Reinforcement - if Daniel is reinforced after each attempt, he will be more likely to learn the skill and reproduce the behaviour. [1]

Question 14

1 mark for appropriate statement about the ICD, 1 mark for correct statement about the DSM and comparative statement about its distinction from the ICD, for example:

The DSM is manual produced by the American Psychiatric Association it includes information of mental disorders exclusively, and provides information about the course, prognosis and the prevalence of the disorder [1]. By comparison the ICD includes information about all medical disorders, instead of just mental disorders, it also distinguishes between mental and behavioural disorders a distinction the DSM does not recognise, and furthermore, unlike the DSM, the ICD does not provide information on course, prognosis and prevalence [1].

Section C – Extended response

Question 1

Dependent variable: the dependent variable for this study is the amount of time first year psychology students spent in REM sleep as measured by the EOG [1]

Independent variable: The independent variable for this study is whether the first year psychology student was administered 100mg of caffeine two hours before bed for the period of seven days or whether they consumed no caffeine or whether the student consumed no caffeine two hours before bed.

Question 2

Professor Ainsworth used an independent groups study design. Participants were randomly allocated into either the control (where they consumed no caffeine) or the experimental group (where they did consume caffeine) [1]

Question 3

Rights that Professor Ainsworth failed to respect in this experiment include:

- withdrawal rights – the participant must not be forced to participate in a psychological experiment, the right to leave at any time ensures that the participant feelings and beliefs are respected. For participation to be truly voluntary, they must have the right to leave at any time. It does not matter that the participant leaving may inconvenience the experimenter.
- informed consent – ensures that the participant is given all the information and has knowledge of what they are signing up to participate in.
- voluntary participation – this is important as the principle of justice states that an unfair burden of research should not be placed on one group of individuals, without voluntary participation there is no way to ensure that the participant is taking part in the experiment because they feel obligated or because they have been coerced

[1 mark for naming a principle, 1 mark for an appropriate explanation of its importance]

Question 4

A range of responses may be acceptable for this question and not all of them are represented in this sample response below. The marker is looking for the quality of the information given in an extended response question, not just that you have the information on the page. If you are confused about the standard of response, ask your teacher or tutor for detailed feedback.

The conclusion that can be drawn from this experiment is that for first year psychology students from the State University there is no statistically significant difference in quality of sleep between students who consume 100 mg of caffeine two hours before bed as opposed to those who do not consume 100mg of caffeine and those who do not. The calculated p value for this experiment was above 0.05 which was the set limit, this means that there is a greater than 5% probability that the results of the experiment were due to chance instead of the independent variable. As the experiment did not have statistical significance, the experiment did not support the hypothesis.

The results of the experiment suggest that though caffeine may affect the time it takes an individual to fall asleep, and may result in a less total sleep experience, caffeine consumption did not have a significant impact on the amount of time that an individual spent in REM sleep. This would seem to support the restorative theory of sleep, as it shows that REM is critically important for everyday functioning. If REM was not critically important for daily functioning, individuals would be likely to spend less time in REM when they have slightly less sleep. It shows that the body will compensate for less REM sleep across a night, thus asserting its importance in everyday functioning.

These results could not be generalised to the population of the study, all people, for several reasons. The age of undergraduate students could create a bias, as caffeine could have a more pronounced effect on sleep as we age, and therefore the sample was not representative of individuals across the lifespan. The sample was also a convenience sample, thus it could be supposed that the type of students who might choose to participate in this study may not be representative of the population, in that they already show engagement with the subject matter. The fact that Professor Ainsworth only selected students in the process of attaining a university level education is also worth noting, as students participating in the experiment could be assumed to possess a relatively high level of intelligence, and this could impede upon the ability of the results to be generalized.

Perhaps the biggest limitation of this experiment is that Professor Ainsworth did not control for a placebo effect. Students who were not receiving caffeine should have been given a drink that did not contain caffeine (a placebo). This would have ensured that participants' expectations about how they were going to sleep, because of the caffeine, did not interfere with the results. The expectation that they were going to have a 'bad sleep' because of the caffeine may have become a self-fulfilling prophecy for participants.

Another limitation of this experiment is its artificiality. The condition of the laboratory itself is an extraneous variable, as there is no way of knowing whether the artificial nature of the setting influenced the way in which the students slept or impacted on the quality. This could have been overcome by assessing participants in their own homes, however, this is potentially difficult if you are defining quality as the amount of time spent in REM, as this requires EOG monitoring.

An alternate limitation is the narrow way in which sleep quality is defined in this experiment, the 'quality' of sleep is difficult to quantify and is often a subjective experience for individuals. This is a flaw with the experimental design itself, and impedes on the validity. It could consequently be suggested that the experiment does not have construct validity. This could be overcome by measuring quality of sleep through a series of measures for example Professor Ainsworth could have recorded the overall amount of time spent sleeping, time spent in NREM sleep, and the time spent in each particular stage. This would have given her a more holistic measure of sleep quality.

Marking scheme:

2 marks – correct identification of the p-value, reference to this in the response and ability to explain why the experiment was or was not supported on the basis of the p-value.

2 marks – a supported suggestion about what the experiment implies about sleep theory, identification of what the theory implies about sleep research.

2 marks – comment on whether the results of the experiment could be generalized and a justification of why or why not based on the experiment.

4 marks – one mark awarded for identifying the limitation, the other for how the limitation could be fixed. The student needs to give an example to be awarded all 4 marks.