

PSYCHOLOGY

Units 3&4 - Written examination



2024 Trial Examination

SOLUTIONS

SECTION A Multiple-choice questions (1 mark each)

Question 1

Answer: C

Explanation: Pupils dilating and sweating are both sympathetic responses and so therefore C is correct. The Somatic Nervous System is responsible for all movements.

Question 2

Answer: C

Explanation: The parasympathetic Nervous System is responsible for bringing the body back to a state of calm after heightened arousal.

Question 3

Answer: B

Explanation: It is important students can define Gut microbiota and Microorganisms this is the correct definition in answer B. Option A the gut microbiota and microorganisms are written the wrong way around.

Question 4

Answer: C

Explanation: This is a spinal reflex or involuntary response. The key factor is that she realises she has stepped on the nail afterwards.

Question 5

Answer: A

Explanation: Dopamine is involved in rewarding and addictive behaviours as seen with gambling in this scenario. Serotonin has no involvement in rewards or addictions.

Question 6

Answer: B

Explanation: GABA is an inhibitory neurotransmitter preventing the post synaptic neuron from firing.

Question 7

Answer: C

Explanation: Options A and B have features from both neurotransmitters and neuromodulators, Option D would also be incorrect because there is no effect on the pre synaptic neuron, only the post synaptic neuron.

Question 8

Answer: C

Explanation: LTP is the strengthening of the connections and LTD is weakening of connections. Given that the scenario indicates the person improving at the skill C is correct.

Question 9

Answer: B

Explanation: The Vagus nerve is responsible for the connection of the brain and gut.

Question 10

Answer: A

Explanation: Internal stressors originate from within individual and external stressors originate from outside an individual. Given this is an example of self-doubt it is an internal stressor.

Question 11

Answer: B

Explanation: See explanation from question 10- The mother in this situation is external and therefore B is correct. It is originating outside of the person.

Question 12

Answer: B

Explanation: A chronic stress is one that has gone on for a long time, acute stress is a temporary stress. Given this situation is about a dad being sick for 10 years B would be correct.

Question 13

Answer: B

Explanation: Acquisition stage is the same concept as during conditioning. During conditioning the NS and UCS needs to have a repeated association.

Question 14

Answer: B

Explanation: Positive punishment is giving an undesirable consequence to decrease the likelihood of the behaviour occurring again. Considering the student is receiving the detention they are more inclined to do their homework next time to avoid getting the detention.

Question 15

Answer: A

Explanation: EEG = Brainwaves. EOG = Muscles around the eyes and EMG = muscles in the body.

Question 16

Answer: D

Explanation- Sleep diaries are subjective and therefore would not show any brain waves. Duration, quality of sleep and individual thoughts are all factors that can be included in a sleep diary.

Question 17

Answer: A

Explanation: A video monitor allows the researcher to see patterns throughout the night. It cannot see anything happening internally.

Question 18

Answer: B

Explanation: Mark is a teenager and so his sleeping characteristics include 8 hours of sleep and 20%REM and 80% NREM

Question 19

Answer: C

Explanation: Melatonin is the sleep-inducing hormone so the use of bright light is suppressing this release. Cortisol is the hormone active in the morning when someone wakes up to keep them alert.

Question 20

Answer: A

Explanation: Affective refers to emotions, in this case A is the only option for emotions.

Question 21

Answer: A

Explanation- Given he likely has DSPS Bright light therapy should be used in the morning to wake him up at an appropriate time. If he had ASPD, Bright light therapy would be used in the evenings.

Question 22

Answer: B

Explanation- Body temperature is not considered when discussing Zeitgebers, it is only the temperature of the room.

Question 23

Answer: A

Explanation-. Advanced sleep disorder is common in elderly people and is when someone sleeps early e.g., 6pm and wakes up early such as 3-4am.

Question 24

Answer: D

Explanation-. Resilience is the ability of a person to adjust and cope with change that may occur. Options A, B and C all indicate the person is doing something to cope or adjust.

Question 25

Answer: B

Explanation-. Connection to culture is described as having a strong sense of identity, values, traditions and connections with the past, present and future that drives behaviours and beliefs.

Question 26

Answer: C

Explanation- 17 hours = 0.05 and 24 hours = 0.10. Students should be mindful of the decimal point as 0.5 would indicate 50% and not 5% that is why option D is not correct.

Question 27

Answer: A

Explanation. DSPS is a disorder in which the person goes to sleep late and wakes up late – this is most common in teenagers.

Question 28

Answer: C

Explanation- Sleep hygiene is habits an individual can do to improve their sleep wake patterns. If someone is trying to improve their sleep before bed using their phone should be avoided. All the other options would be a positive thing to do.

Question 29

Answer: A

Explanation- A is most correct because this relates to a phobia. The A is always the phobic stimulus, the B is the avoidance behaviour which then results in negative reinforcement.

Question 30

Answer: B

Explanation- Phobias always have a known stimulus and affects the person. Anxiety can be from any stimulus that is either known or known and is not usually irrational.

Question 31

Answer: C

Explanation- Adequate sleep is a protective factor for Mental health and not relevant to phobias.

Question 32

Answer: C

Explanation- Cultural determinants are cultural continuity and self-determination connection to different areas comes under the SEWB framework.

Question 33

Answer: D

Explanation- Within subjects means participants complete both conditions. Order effects refers to things like practise effects and fatigue effects which could be a major disadvantage to a study using within subjects.

Question 34

Answer: A

Explanation- External Validity refers to the extent in which results can be applied to the broader population, having a larger sample size is the best way to increase the external validity.

Question 35

Answer: C

Explanation- Patients with Alzheimer's are still able to participate in a study but a guardian or legal carer would need to sign on their behalf.

Question 36

Answer: C

Explanation – Alzheimer's is characterised by memory impairment, and aphantasia is an inability to visualise information in one's mind. In Alzheimer's the hippocampus is affected and the explicit memories.

Question 37

Answer: D

Explanation- Aphantasia is an inability to produce mental imagery.

Question 38

Answer: A

Explanation- Amygdala is responsible for all emotional components of memory.

Question 39

Answer: B

Explanation-. Neocortex stores explicit memories and the hippocampus consolidates.

Question 40

Answer: C

Explanation- The Cerebellum is responsible for all movements.

SECTION B - Short-answer questions

Question 1 (7 marks)

a. One mark is awarded for the following points (3 marks):

- *Lucy was using an approach strategy as she asked for help when needed and went to different shops to get ideas (1 marks)*
- *Mark was using an avoidance strategy because he was evading the stressor by playing play station or eating pizza. (1 mark)*
- *An advantage of an approach strategy is that it can help overcome the stressor over time. (1 mark)*

Other answers for advantages can be given a mark at teacher's discretion.

b. One mark is awarded for each of the following points (4 marks):

- *Lucy's primary appraisal was stressful and a challenge. This was because she was excited about the party and determined for it to go well (1 marks)*
- *Her secondary appraisal is that she had adequate resources to cope due to the advice she got from speaking to other people. (1 mark)*
- *Marks primary appraisal was a stress and a threat this was because he would not have a job if this does not go well (1 mark)*
- *His secondary appraisal indicates he did not have adequate resources and turned to PlayStation and binge eating. (1 mark)*

Question 2 (11 marks)

a. One mark is awarded for the following points (2 marks):

- *Sleep hygiene is the practises that someone does to improve their sleep patterns. (1 mark)*
- *She is not currently showing good sleep hygiene due to the use of her phone, eating before bed and exercising before bed (1 mark)*

Some improvements that students can list include any two points below for 1 mark each.

- *Avoiding her phone before bed as this inhibits the release of melatonin.*
 - *Not eating large meals before bed*
 - *Exercising in the day and not closet to bed*
 - *Making sure she uses her bed only for sleep and now study.*
- b. *Full sleep deprivation is when an individual has no sleep within a 24-hour period, and partial sleep deprivation is when an individual sleeps for some duration but there is a loss in quality or quantity of sleep. (2 marks)*
- c. Symptoms in your answer can include any of the following for one mark per category. Student must also refer to Tina to get the mark:

Affective:

- *Poor emotional regulation*
- *Irritability and moodiness*
- *Increase in negative emotions*
- *Difficulty judging others' emotions*
- *Reduced empathy*

Behavioural:

- *Sleep inertia*
- *Excessive sleepiness during the day*
- *Increased likelihood of engaging in risk taking behaviours*
- *Fatigue*
- *Microsleeps*
- *Reduced motor control*

Cognitive:

- *Reduced concentration*
- *Impairment of STM*
- *Lapses in attention*
- *Impaired decision making*
- *Illogical thinking.*

Other answers may be accepted at teachers' discretion.

- d.** *17 hours sleep deprivation has an effect equivalent to 0.05 BAC and 24 hours sleep deprivation has an effect equivalent to 0.10 BAC (2 marks)*

Question 3 (2 marks)

The information of the loud noise would enter her sensory memory (1 mark), the echoic component of this store would have been involved in the hearing of this sound, (1 mark) if she paid attention to it, the information would enter short-term memory.

Question 4 (5 marks)

- a.** One mark is allocated for one explanation from each category below. The name and explanation need to be correct for the mark.

Biological:

- *Adequate nutrition and hydration -Ensuring the amount of food and drink that an individual consumes meets their needs.*
- *Adequate sleep – Having an adequate quality and quantity of sleep.*

Psychological:

- *Cognitive behavioural strategies – strategies that recognise and change dysfunctional thoughts and behavioural patterns.*

- *Mindfulness meditation – an individual focuses on the present to promote feelings of calm and peace.*

Social:

- *Support – genuine and effective assistance provided from family, friends and community.*

- b.** *This refers to Cognitive behavioural Strategies which is when dysfunctional thoughts and behaviours are recognised. (2 marks)*

Note: CBT will not be accepted as that relates to a phobia not mental health.

Question 5 (4 marks)

One mark given for two correct measures and correct explanation of what occurs in REM.
Any 2 of the below:

- *EEG – Detects amplifies and records electrical activity of the brain. In REM high frequency and low amplitude would be seen.*
- *EMG – Detects amplifies and records electrical activity in the muscles. In REM sleep muscles will show little movement as if paralysed.*
- *EOG – Detects amplifies and records electrical activity of muscles surrounding the eyes – In REM we would see high amounts of movement.*

Question 6 (2 marks)

- a.** *A circadian rhythm is a biological and behavioural changes that occur as part of a cycle that lasts for 24 hours and an ultradian rhythm is biological and behavioural changes that occur in a cycle less than 24 hours. (2 marks)*
- b.** *Bright light therapy is a method used to adjust a person's circadian rhythm through exposure to a high intensity light source (1 mark)*
For someone with advanced sleep disorder it would be used in the evening to keep the person awake (1 mark)
For someone with delayed sleep phase disorder it would be used in the morning to wake them up at an appropriate time (1 mark)

Question 7 (4 marks)

For full marks students need to be specific to heights.

Someone with a fear of heights would first be taught to relax using breathing retraining. (1 mark). There will be a development of a hierarchy such as watching a video of someone jumping from a tall building, to standing and watching someone on a tall building in person. (1 mark). There will be gradual step by step exposure of the hierarchy (1 mark. The hierarchy will be continued until the person can confront their fear of heights without a fear response. (1 mark).

Question 8 (4 marks)

This was an unconscious response and the steps are as followed.

*Dangerous or harmful stimulus was detected by the sensory receptors on Tom's foot (1 mark)
Interneuron in the spinal cord immediately relays the sensory neural signal from a sensory neuron to a motor neuron as a motor neural signal, initiating an automatic and unconscious response. (1 mark). The motor message is transmitted via motor neurons in the somatic nervous system to skeletal muscles, which carry out this unconscious motor response to the dangerous stimuli. (1 mark). The sensory message continues to travel via afferent tracts in the spinal cord to the brain. Then the brain registers what has happened. (1 mark).*

Question 9 (6 marks)

When Claire was initially told she would no longer have work she entered the Alarm reaction (shock) stage. (1 mark). This can be seen by her slumping in her chair. (1 mark). When Claire then decided to get up and begin looking for work, she entered the Countershock stage of the Alarm reaction. (1 mark). This would be characterised by an increase in heart rate and a willingness for her to find work. (1 mark). When Claire noticed herself getting sick with a cough and cold, she was in the resistance stage, this is characterised by the ongoing release of cortisol in her body which is sustaining her. (1 mark). Finally, when Claire ends up in the hospital, she is in the exhaustion stage as her body's immune system is depleted and she can no longer complete the task. (1 mark).

Question 10 (7 marks)

a.

- *Attention: You will closely focus on the basketball player doing the skill of throwing and catching. (1 mark)*
- *Retention- You will store a mental representation of the skill in your mind (1 mark)*
- *Reproduction- You will have the capabilities to do the action of throwing and catching a ball (1 mark)*
- *Motivation- You will have desire to throw and catch a ball (1 mark)*
- *Reinforcement- you will have an incentive or reward for throwing and catching the ball. (1 mark)*

b. *An individual is more likely to be motivated because the person is famous player. (1 mark).
We are more inclined to observe someone who we know or look up too (1 mark).*

Question 11 (5 marks)

One mark for any 5 of the following – name and definition need to be correct for the mark.

- *Connection to Body – Connecting to physical body and health in order to participate in aspects of life.*
- *Connection to mind and emotions – Ability to effectively manage thoughts and feelings*
- *Connection to family and kinship- Connection to immediate and wider family group and community*

- *Connection to community – Connection to wider social systems*
- *Connection to Culture – A strong sense of identity, values and traditions between the past and present.*
- *Connection to Country – The traditional lands of a particular language or cultural group.*
- *Connection to spirituality and Ancestors – Spirituality refers to a concept that connects all things and shapes beliefs and ancestors is the belief that a family and community's and ancestors are interconnected.*

Question 12 (10 marks)

- a. *IV is the variable that is manipulated by the researcher (controlled and changed by the researcher) (1 mark). DV is the variable that the researcher measures in an experiment. This may change due to the IV's effect on the DV.*
- b. Any 4 of the following can be accepted for one mark each.
- ***Participant related variables*** – *Characteristics of the participants that may affect the results.*
 - ***Experimenter effects*** – *When the expectations of the researcher affect the results of an experiment.*
 - ***Situational variables*** – *Any environmental factor that may affect the DV*
 - ***Non standardised procedures*** -*When directions and procedures differ across participants or experimental conditions.*
 - ***Demand characteristics***- *Cues in an experiment that may signal to a participant the intention of the study and therefore influence their behaviour.*
- c. Any 4 of the following is accepted. One mark is awarded for each of the following:
- *Sampling size and procedures*
 - *Experimental design choice*
 - *single or double blind*
 - *Standardised instructions*
 - *Controlled variables*

Question 13 (10 marks)

Students should be reminded that their mark for the extended response follows the following criteria and students are encouraged to ask their teacher to check over the extended response. Below this table you will see some ideas that could be discussed in your extended response. This is a guide only and please seek individual feedback from your classroom teacher.

High 8-10	• is very detailed, clearly organised and cohesive. • addresses <u>all</u> aspects of the question. • demonstrates confident, sophisticated utilisation of psychological terminology relevant to the question. • shows insightful understanding and extensive use of perceptive examples that are from/applied to the scenario. • offers a highly considered and balanced review of relevant psychological information, ideas, concepts, theories and/or models, by confidently drawing links between a range of arguments, factors or hypotheses. • assuredly breaks down the data, methods or models and clearly highlights the important elements. • considers the evidence in relation to scenario or question and investigates possible explanations. • makes an appraisal or assess the value of the evidence, by weighing up the strengths and limitations. • draws clearly presented conclusions, supported by appropriate evidence and gives a detailed account of the limitations of these conclusions, including reasons/causes and implications.
Medium 5-7	• is satisfactorily detailed and organised. • addresses <u>most</u> aspects of the question <u>OR</u> addresses all aspects <u>but shows weaknesses in some areas</u>. • demonstrates consistent and effective use of psychological terminology relevant to the question. • shows accurate use of relevant examples from/applied to the scenario. • offers a review of relevant psychological information (may be biased or one sided), ideas, concepts, theories and/or models, by drawing links between arguments, factors or hypotheses. • breaks down the data, methods or models and highlights most of the important elements. • considers the evidence in relation to scenario or question and investigates possible explanations. • makes an appraisal or assess the value of the evidence, by weighing up the strengths and limitations. • draws clearly presented conclusions, supported by appropriate evidence and gives a detailed account of the limitations of these conclusions, including reasons/causes and implications.
Low 1-4	• is below satisfactory in its level of detail and is somewhat disorganised. • demonstrates little understanding of the concepts addressed in the question with some inaccuracies or irrelevancies. • demonstrates some use of psychological terminology relevant to the question with minimal accuracy. • provides few relevant examples from/applied to the scenario with some inaccuracies or incomplete descriptions. • offers a review of some psychological information (may be biased or one sided), ideas, concepts, theories and/or models and may fail to draw links between arguments, factors or

	hypotheses. • breaks down the data, methods or models but misses or fails to highlight some of the important elements. • Shows limited consideration of the evidence or provides evidence that is irrelevant to the scenario or question and neglects to provide possible explanations for these. • makes an appraisal or assess the value of the evidence, by weighing up the strengths and limitations. • draws clearly presented conclusions, supported by appropriate evidence and gives a detailed account of the limitations of these conclusions, including reasons/causes and implications.
NA 0	was not attempted or not submitted or has no relevance to the question/scenario or criteria.

Contributing factors

- *GABA dysfunction – This is when there is insufficient neural transmission or reception of GABA in the body. GABA is the inhibitory/calming neurotransmitter and so insufficient GABA could result in anxiety around the clowns. It may cause someone's fight- flight- freeze response to activate.*
- *Classical conditioning. The fear of clowns can be precipitated by classical conditioning. For this part of the answer students should use critical thinking skills and come up with a scenario that incorporates the concepts of Classical Conditioning.*
- *Specific environmental triggers – This is a stimuli or experience in a person's environment that evokes an extreme stress response leading to the development of a phobia. Students should create a scenario showing specific environmental triggers in their explanation.*

Interventions:

- *Benzodiazepines – These are a type of medication that depresses Central Nervous System activity and is often used as a short- acting anti-anxiety medication. Students should discuss this in the concept of them being GABA agonists and link it to fear of clowns.*
- *CBT – This is when a person's maladaptive thoughts and behaviors are challenged. This should be discussed with relation to a fear of clowns in the answer.*
- *Psychoeducation – This is teaching families and supporters of individuals with a specific phobia how to better understand, deal with and treat the disorder. This should be explained with reference to a fear of clowns.*