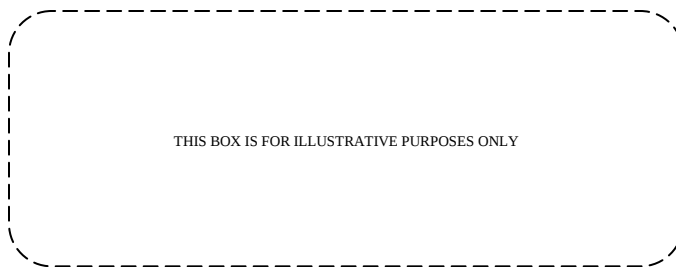




2023 Trial Examination



STUDENT
NUMBER

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Letter

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PSYCHOLOGY

Units 3 & 4 – Written examination

Reading time: 15 minutes

Writing time: 1 hour and 30 minutes

QUESTION AND ANSWER BOOK

Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	40	40	40
B	13	13	80
			Total 120

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is permitted in this examination.

Materials supplied

- Question and answer book of 31 pages.

Instructions

- Print your name in the space provided on the top of this page.
- All written responses must be in English.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic communication devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer all questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will not be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

The following information relates to questions 1-8

At the beach house, Juniper gets on her bike to ride around the block after a very warm day at the beach. Unfortunately, she must wait on the side of the road before she takes off as she notices the neighbour's car backing out of the driveway opposite her. Meanwhile, out of the corner of her eye she sees a black thing slithering towards her on the grass by the side of the road. With a further glance in that direction, Juniper realises that there is a snake moving towards her. Without hesitation, Juniper takes off on her bike at an accelerated pace to place a great distance between her and the snake. She gets to the end of the road with her heart racing and pounding. She feels puffed out and she is trembling with fear; she is trying to catch her breath, and she is extremely flushed and sweaty. She can see the snake from a distance slithering off into the grass towards the reserve situated behind the beach-house. She takes the phone out of her pocket quickly and phones her mum asking her to come and get her with the car because she is so frightened now to ride back to the house. She can barely speak when she calls her mum to urge her to come and get her. Her voice sounds hysterical and shaky. Once her mum arrives in the car to take her home, Juniper begins to calm down.

Question 1

Which parts of the Nervous System is triggered when Juniper takes off on her bike after seeing the snake?

- A. The Central Nervous System and the Parasympathetic Nervous System
- B. The Sympathetic and Somatic Nervous System
- C. The Enteric Nervous System and the Central Nervous System
- D. The Parasympathetic and Somatic Nervous System

SECTION A - continued

Question 2

The ability of Juniper to move her legs quickly to take off on his bike is due to the action predominantly of

- A. The Autonomic Nervous System
- B. The Somatic Nervous System
- C. The Central Nervous System
- D. The Parasympathetic Nervous System

Question 3

According to Selye's GAS model, which provides an explanation of the stress response, what stage of this model would Juniper find herself in when she takes off on her bike at a fast pace?

- A. The Resistance Stage
- B. The Shock Stage of the Alarm Stage
- C. The Exhaustion Stage
- D. The Counter-Shock Stage of the Alarm Stage

Question 4

A/An _____ stressor causes Juniper's response of _____ stress.

- A. Internal; Chronic
- B. Intrinsic; Distress
- C. External; Acute
- D. External; Chronic

Question 5

Which of the following function linked to Juniper's Stress Response is controlled by the Autonomic Nervous System?

- A. Voluntary Movement of the skeletal muscles and perspiration rate
- B. Voluntary Movement of the skeletal muscles and heart rate
- C. Increase in heart rate and perspiration rate, and dilation of pupils and blood vessels.
- D. Voluntary Movement and constriction of bronchioles

SECTION A – continued
TURN OVER

Question 6

Juniper's Fight-Flight-Freeze Response was dependent on the following neurohormones being released in the Circulatory System via the HPA Axis apart from

- A. Gamma-Amino-Butyric-Acid (GABA)
- B. Noradrenaline (Norepinephrine)
- C. Cortisol
- D. Adrenaline (Epinephrine)

Question 7

When Juniper dials her mother's number in her phone to call her to come and get her with the car due to her intense fear of riding back, Juniper is using which pathway of the Nervous system to carry out this action?

- A. The Efferent pathway of Juniper's Autonomic system
- B. The Bi-directional Pathway between Juniper's brain and her gut
- C. The Afferent Pathway of Juniper's Autonomic Nervous System
- D. The Efferent Pathway of Juniper's Somatic Nervous System

Question 8

When Juniper dials her mother's number in her phone to call her, her Somatic Nervous System would be responsible for

- A. Carrying motor commands from the CNS about which keys to press with which finger, communicating this to the muscles in the hand and deciding which number to type next on the screen of the phone.
- B. Regulating perspiration, heart rate and the expansion of the lungs
- C. Carrying sensory information from the CNS to the hands about how the phone screen feels beneath her fingers.
- D. Deciding which number to type next on the screen of the phone.

The following information relates to questions 9-10

Because of Juniper's past encounter with a snake at the beach house, Juniper developed a phobia of snakes. She begins to feel persistent and intense anxiety every time she sees a picture or a television program with a snake in it. She even avoided entering or walking by the snake enclosure at the zoo last week. The more Juniper thinks about snakes, the more she feels anxious. On warm days she won't go for a walk or ride, or even do an outdoor activity especially when she is at the beach house due to the intensity of this fear of snakes.

SECTION A – continued

Question 9

The precipitation of Juniper's fear of snakes can be explained in terms of the _____ model of learning and its link to Long-Term Potentiation (LTP) and possibly lower levels of the neurotransmitter of _____.

- A. Operant Conditioning; Glutamate
- B. Classical Conditioning; Gamma-Amino Butyric Acid (GABA)
- C. Observational Learning; Adrenaline
- D. Implicit Conditioned Reflex Actions; Serotonin

Question 10

The perpetuation of Juniper's fear is caused by the _____ model of learning and she could try to deal with this phobia by being involved in _____ and _____.

- A. Social-Cognitive Learning; Psychoeducation; Breathing Retraining
- B. Classical Conditioning; Systematic Desensitisation; taking Benzodiazepine.
- C. A Multi-Modal System based on *Country* linked to Kinship and Ways of Knowing; Aerobic Exercise; Systematic Desensitisation.
- D. Operant Conditioning; Cognitive Behavioral Therapy; Systematic Desensitisation.

Question 11

Which parts of Juniper's brain would have been involved in the formation of such a strong memory bias with regard to Juniper's intense fear of snakes?

- A. The Basal Ganglia and the Hypothalamus
- B. The Hippocampus and the Amygdala
- C. The Cerebellum and the Basal Ganglia
- D. The Hippocampus and the Cerebellum

The following information relates to questions 12-14

Leila was baking muffins and she puts her hand in the oven to test with a toothpick if the muffins were ready. As she attempted to do this, she burnt the back of her hand against the oven's glass door. Consequently, she withdrew her hand quickly as she felt a surge of pain. Leila ran to the kitchen sink, turned on the tap and put her hand under the tap hoping the cold water would ease the pain.

SECTION A – continued
TURN OVER

Question 12

Which of the following pathways of neural transmission is involved in this process?

- A. Sensory receptors in the back of the hand – afferent neural pathway – interneurons in the Spinal cord – efferent neural pathway - muscles in the hand, arm, and shoulder-withdrawal of hand and arm from the oven.
- B. Sensory areas of the brain (Parietal Lobe)- spinal cord – efferent neural pathway – muscles in hand, arm, and shoulder – withdrawal of hand and arm from the oven
- C. Sensory receptors in the back of the hand – afferent pathway – interneurons in the spinal cord- Sensory Areas in the Brain (Parietal Lobe) – withdrawal of hand and arm from the oven
- D. Sensory Receptors in the back of the hand- efferent neural pathway - interneurons in the Spinal cord – afferent neural pathway - muscles in the hand, arm, and shoulder - withdrawal of hand and arm from the oven.

Question 13

Which parts of the nervous system would have been directly responsible for Leila carrying out the actions of running to the sink, turning on the tap on and putting her hand under the cold water to ease the pain on the back of her hand?

- A. The Central Nervous System and the Peripheral Nervous System
- B. The Enteric Nervous System and the Autonomic Nervous System
- C. The Peripheral Nervous System and the Autonomic Nervous System
- D. The Endocrine Nervous System and the Enteric Nervous System

Question 14

Complete the following-

Leila's response to burning the back of her hand against the oven door was a/an _____ response whereas Leila's efforts to ease the pain in her hand was a/an _____ response.

- A. Conscious; Unconscious
- B. Voluntary; Spinal Reflex
- C. Conscious; Unconscious
- D. Spinal Reflex; Voluntary

SECTION A – continued

Question 15

The Gut-Brain Axis can be explained as the

- A. Single directional efferent pathway linked to the gastrointestinal system and the brain.
- B. Bi-directional communication network between the Central Nervous System and the Enteric Nervous System which is part of the Autonomic Nervous System
- C. Bi-directional afferent pathway linking the Enteric Nervous System and the Somatic Nervous System
- D The uni-directional neural pathway between the intestine and the brain

The following information relates to questions 16-17

Orlando learned to ski when he was a child when he and his family visited relatives in Switzerland and as a younger child, he would often go skiing to Mount Hotham. After his parents separated, he didn't go skiing until he arranged to go as an adult with friends for a weekend away at a ski lodge. Although he knew how to ski quite well when he was a child, he found that he could manage to balance but he struggled with the tasks of stopping easily and turning corners. He was surprised that he had lost some of his skiing skills over time as he used to ski well as a child.

Question 16

Which statement is not true about the neural processes involved in Orlando learning to ski as a child in Switzerland and continuing to ski as part of his childhood experiences?

- A. With lots of practice over time, Glutamate, an excitatory neurotransmitter, would have helped to increase the firing of post-synaptic neurons to strengthen the neural pathways related to the skiing behaviour.
- B. The repeated activation of a pathway/pathways due to the skiing practices would have caused Long-Term-Potentiation (LTP) to occur. This would have helped Orlando's skiing behaviour to be consolidated as a memory.
- C. The Hippocampus, Cerebellum and Basal Ganglia in the brain would have implicitly been involved in forming the memory of the skiing skill set.
- D. While Orlando practises skiing, Long Term Depression causes Post-Synaptic Neurons to appear bushier because of filigree appendages growing longer.

SECTION A – continued
TURN OVER

Question 17

Orlando's deterioration of his skiing skills can be explained by

- A.** Sprouting of neural pathways by the formation of new connections linked to the skiing skill set developing as Orlando reduces his skiing behavior.
- B.** The process of Pruning via LTD which is responsible for removing and weakening excess neural pathways, that fire less frequently due to limited practice of skills over time.
- C.** The process of LTP which results from repeated low-level activation of the neural pathways related to the reduction of skiing behavior.
- D.** The neurotransmitter of GABA contributes to sprouting and rerouting reducing the neural pathways related to skiing behavior via the process of LTP.

Question 18

Which of the following is not true about the difference between neurotransmitters and neuromodulators?

- A.** Neuromodulators cause a quicker effect which lasts for longer periods as opposed to neurotransmitters which slowly alter the effectiveness of neural transmission in specific brain areas.
- B.** Neuromodulators are released outside of the synapse into the neural tissue, whereas neurotransmitters are released in the synapse.
- C.** Neurotransmitters target single post-synaptic neurons, whereas neuromodulators target groups of neurons
- D.** Neuromodulators act more slowly and last for longer periods, whereas Neurotransmitters act much faster in their effect from one synapse to the other.

Question 19

Which of the following is not true about Dopamine and its effect on brain functioning?

- A.** Thirst and consequently, the actual act of gulping water causes a surge of dopamine in the brain.
- B.** Dopamine acts as a motivating chemical agent that provides a reward pathway in the brain and a motivator of pleasurable and rewarding activities.
- C.** Dopamine release can increase just before a potential reward, or a win is achieved.
- D.** Hunger occurs due to an increase in the baseline levels of dopamine in the reward pathway of the brain. This results in the sensation of hunger and an increase in food seeking/eating behaviour.

SECTION A – continued

Question 20

Which of the following is true with regard to the Gut Microbiota?

- A. It is also referred to as the Microbiome which is made up of a highly diverse group of almost a 100 trillion bacteria and other microorganisms that live in the human gastrointestinal (GI) tract.
- B. It is connected to the brain by the Vagus Nerve which is the longest nerve in the human body running from the brainstem down to the intestines and it is the main contributor to the parasympathetic nervous system and it regulates or dysregulates the HPA Axis.
- C. In research, a Gut Microbiota which is not balanced or compromised has been linked to Antisocial behaviour, Issues with Memory and Cognition, Depression, Dysbiosis, and Anxiety.
- D. All of the above.

Question 21

Which of the following is not a strength of the Lazarus and Folkman's Transactional Model of Stress and Coping?

- A. It explains why different individuals respond to the same stressor in different ways.
- B. It caters to an understanding that people experience the same physiological responses to stressors and it explains the same pattern of actions triggered by the Sympathetic Nervous System and modified by the Parasympathetic System
- C. It views stress as an interaction with the environment in which the individual plays an active role in dealing with stress on a psychological level.
- D. It allows us to change our thinking about a stressor and re-evaluate our responses and make changes accordingly to deal with the circumstances of the stressor.

Question 22

Jaylene begins Year 7 and she is excited to go to a new school. But before long she is targeted by a group of students before school as she is a petite year 7 student who looks younger than most of the girls and she has not experienced a growth spurt yet, as many of the other girls in her level had already. Jaylene is a softly spoken individual and she does not like to cause trouble. She has only a few friends who came from the primary school she attended. Which behaviors could represent avoidance behaviors when it comes to possible coping strategies that Jaylene could use to deal with the bullying behavior that she is subjected to?

- A. Taking Days off regularly.
- B. Going to school late so as not to be seen by the girls that bullied her.
- C. Smoking Marijuana on the way to school so that she could feel better.
- D. All of the Above

SECTION A – continued
TURN OVER

Question 23

Aboriginal and Torres Strait Islanders Ways of Knowing are

- A. Multimodal ways of sharing knowledge within a system of relationships linked to geographical locations.
- B. An all-encompassing understanding of Country involving the land, the plants, the animals, human beings, the ancestors, and other entities such as the stars, the heavens.
- C. Mainly written sacred texts which include Indigenous Art and Narrative Stories and Song-Lines passed on by Elders.
- D. Oral and Visual ways of disseminating knowledge and participating within a system of Relationships linked to Kinship.

Question 24

The Indigenous Framework of Learning includes the following ways of learning such as

- A. Internalising maps based on Country and constructing and deconstructing ideas via story-telling, Songlines or yarns.
- B. Using symbols, images, and kinesthetic movements and other verbal means to understand ideas and concepts and represent them in various ways.
- C. Linking Knowledge to Community Relationships and links to local land and landmarks in nature and in the heavens.
- D. All of the Above

The following information relates to questions 25-29

A group of ten friends who went to High-School together forty years ago regularly meet and socialise together 2-3 times a year. They reminisce over their school days and talk about their former teachers, other students, and memorable events, even past High-School reunions. They talk enthusiastically about these days, and they picture the memorable incidences in their minds and certain characters and friends that stand out in their minds. Consequently, the group of friends laugh a lot as if it was just yesterday. Jenny, especially, vividly remembers certain details and relays this information to the others. They can't believe how well she recalls the details of forty years ago and how she fills in the blanks for them as if it were just the other day, given that she can picture these events vividly. The group of friends discuss what they want to be doing in the future as they get close to retirement, and they discuss future gatherings and the sorts of things they may do together as well as the places they may choose for these outings.

SECTION A – continued

Question 25

What type of memory is the group of friends using to recall former teachers, other students and memorable events, even past High-School reunions?

- A. Echoic Sensory Memory
- B. Iconic Sensory Memory
- C. Explicit Episodic Autobiographical Memory
- D. Implicit Procedural memory

Question 26

It is believed that individuals, like Jenny, who recall vivid and detailed past events, have a _____ and greater neural links between the _____ associated with mental imagery.

- A. unique type of sensory memory that persists longer than normal; Frontal and Temporal lobes
- B. highly superior autobiographical memory; Parietal and Occipital regions
- C. a highly developed ability to visualise a scene or image after the physical stimulus is no longer visible; cerebellum and hippocampus
- D. have a neurodiverse brain that amplifies sounds and heightens visual imagery with time; neocortex and thalamus

Question 27

In order for the group of friends to discuss and picture what they want to be doing in the future as they get close to retirement as well as activities and places for future gatherings, they need to use _____ and rely on their _____.

- A. visual imagery; echoic Sensory Memory
- B. echoic input; Procedural Memory
- C. mental imagery; Explicit Autobiographical Episodic and Semantic Memory
- D. mental imagery; Implicit Memory

SECTION A – continued
TURN OVER

Question 28

One of the former high-school friends, Susan, had difficulty carrying out the episodic future thinking of picturing what they might all be doing in the future as they get close to retirement as well as activities and places for future gatherings. He had blurred images in his head with minimal detail. His inability to construct possible imagined futures is due to having

- A. Aphantasia
- B. Parkinson's Disease
- C. Anterograde Amnesia
- D. Lewy Bodies

Question 29

If one of the individuals of the high-school friendship group developed Alzheimer's Disease and it is slowly progressing, which of the following would they eventually develop?

- A. They may have trouble recognizing faces.
- B. They may have difficulty with Episodic Future Thinking
- C. They may struggle to remember or picture autobiographical events and past factual information.
- D. All of the Above

Question 30

Which of the following features are not characteristic of someone who has Alzheimer's Disease?

- A. Brain Atrophy – Shrinkage of areas of the brain especially in the Substantia Nigra
- B. The presence of Amyloid plaques due to the build-up of Beta-Amyloid Proteins
- C. The symptoms of synaesthesia
- D. Anterograde Amnesia and eventually, Retrograde Amnesia

Question 31

Which of the following is not true about the part of the brain and its link to the type of Long-Term Memory?

- A. The Hippocampus encodes and retrieves personal and semantic information and the Neocortex stores personal memories and information related to facts and figures.
- B. The Amygdala is involved in encoding implicit memories related to one's emotions.
- C. The Cerebellum encodes and temporarily stores implicit memories related to movement.
- D. The Basal Ganglia encodes explicit memories related to sequences of movement and habits.

SECTION A – continued

The following information relates to questions 32-33

Raffy, the Pomeranian, begins barking at the birds on the tree outside the window every time her owner, Marcus, puts on Zoom when having meetings with other colleagues online, when working from home. The dog's owner, Marcus, gets annoyed and runs after him to stop him from barking and he begins yelling at the dog who takes delight in the attention he is given because he is bored while the owner works. This happens consistently day after day. The dog continues this behavior even more often.

Question 32

What type of conditioning is causing Raffy to consistently repeat this behavior?

- A. Classical Conditioning
- B. Operant Conditioning
- C. Counterconditioning
- D. Observational Learning/ Conditioning

Question 33

What type of reinforcement is Raffy, the Pomeranian, exposed to in response to his barking behaviour?

- A. Negative Reinforcement
- B. Negative Punishment
- C. Positive Reinforcement
- D. Positive Punishment

The following information relates to question 34

Marcus goes to consult an animal behavioral psychologist to work out if he can help him to change Raffy's behaviour which is stressing him out while he tries to work from home. Zack, the psychologist, suggests that he ignore the barking behaviour and give Raffy a treat when he is quiet, rewarding his good behaviour, instead. Marcus begins trying to do what the behavioural psychologist suggests but he finds that it is slow going. When Raffy begins barking incessantly he decides to take away his favorite toy and ball, trying to change Raffy's behaviour in this manner because he is fast losing patience.

Question 34

Marcus initially uses _____ to change Raffy's behaviour by rewarding Raffy's quiet behaviour but then he loses his patience and he takes away Raffy's favourite toy and ball and he uses _____ to change this dog's behavior once and for all.

- A. Negative Reinforcement; Positive Punishment
- B. Positive Reinforcement; Negative Reinforcement
- C. Negative Punishment; Positive Reinforcement
- D. Positive Punishment; Negative Punishment

SECTION A – continued
TURN OVER

Question 35

The aim of Positive and Negative Reinforcement is to _____ desirable behaviour whereas Positive and Negative Punishment is to _____ undesirable behaviour.

- A. Increase, decrease
- B. Decrease; increase
- C. Increase; increase
- D. Decrease; decrease

Question 36

The following response is not a cognitive effect of partial sleep deprivation:

- A. Impaired problem-solving and decision-making.
- B. A shortened attention span and decreased alertness
- C. Participate in more risk-taking behaviour
- D. Impaired memory skills

Question 37

Which of the following is not true with regard to research findings related to specific hours of partial sleep deprivation and similarities to blood alcohol concentration (BAC) levels and links to cognitive functioning?

- A. 17 hours of sustained wakefulness is equivalent to the effects of BAC levels of 0.50%
- B. 24 hours of sustained wakefulness is equivalent to the effects of BAC levels of 0.10%
- C. 21 hours of sustained wakefulness is equivalent to the effects of BAC levels of 0.25%
- D. 15 hours of sustained wakefulness is equivalent to the effects of BAC levels of 0.01%

Question 38

Circadian Rhythm Sleep Disorders do not include the following-

- A. Delayed Sleep Phase Syndrome
- B. Advanced Sleep Phase
- C. Sleep-Walking Disorder
- D. Shift Work Disorder

SECTION A – continued

Question 39

The Aboriginal and Torres Strait Islander People's Social and Emotional Wellbeing framework includes the following aspects which are intertwined and place the individual at the center of these connections and relationships to

- A.** Country, Culture, Spirit, Spirituality, and Ancestors
- B.** Body, Mind & Emotions,
- C.** Family, Kinship and Community
- D.** All of the Above

Question 40

Which dysfunction of the following Neurotransmitter or Neuromodulator is linked to the disorder of specific phobia?

- A.** Glutamate
- B.** Gamma-Aminobutyric Acid (GABA)
- C.** Acetylcholine
- D.** Dopamine

**END OF SECTION A
TURN OVER**

SECTION B- Short Answer Questions

Instructions for Section B

Answer **all** questions in the spaces provided.

Question 1 (7 marks)

Zoran, Julian, and Patrick are nineteen-year-olds who go to a music festival during the long weekend where they listen to various bands throughout the day until the early hours of the next morning. They partied all night at the rave parties that were held in various tent locations after the bands finished playing. They drank alcohol, but they did not eat much food. This routine was repeated over several days, so the group of boys didn't get much sleep over those three days at the music festival.

- a.** Explain how the sleep deprivation the boys experienced could have affected their Cognitive, Behavioural, and Affective functioning.

3 marks

SECTION B – continued

- b. By the end of the first night, Patrick had consumed 10 drinks and Zoran, who is a more cautious person, had drunk 5 drinks. How could Patrick and Zoran's BAC levels be compared to the hours of sleep deprivation which research has shown to have similar cognitive, affective, and behavioural effects on the individual?

4 marks

Question 2 (11 marks)

- a. Jacinta is a 52-year-old middle-aged woman who is going through menopause and from the onset, her sleep-wake patterns have changed. She is frustrated because she has difficulty getting to sleep at the times she used to in the past between such as between 10 and 11 pm. Jacinta does not feel sleepy until midnight or 1 am in the morning but then she struggles to get up for work the next morning and she keeps hitting the snooze button until she makes herself late for work. When Jacinta tries to go to sleep at 10 or 11 pm she stays awake and struggles to fall asleep and tosses and turns. This problem has been going on for months and Jacinta is very frustrated as to how to change this situation. What type of Circadian Rhythm Disorder is Jacinta experiencing? (Explain) How can her situation be compared to Sasha, her seventeen-year-old daughter's situation, who also can't get to sleep until at least 11 pm and is unable to wake up easily for school the next morning, and complains about feeling tired all the time? Explain Sasha's sleep-wake cycle and how it could be influenced by her being at the adolescence stage of her life.

4 marks

SECTION B – continued
TURN OVER

- b. Frederick, Jacinta's 80-year-old father, lives with her family and for the last six months he has begun falling asleep on the couch at 8 pm and then goes to bed earlier than anyone else in the family but he has begun waking up at 3 or 4 am in the morning and he finds it difficult to get to sleep again. Frederick gets up early making noise downstairs and feels frustrated as no matter what he tries he keeps waking up too early. If Frederick's situation persists, explain what sort of Circadian Rhythm Disorder Frederick may develop and why?

2 marks

SECTION B – continued

- c. Explain how Jacinta, Sasha and Frederick could regulate their sleep-wake cycle patterns more and deal with the Circadian Rhythm Disorders they face? (Refer to Sleep Hygiene strategies).

3 marks

- d. Explain how Jacinta, Sasha and Frederick could use **bright light therapy** to regulate their sleep-wake cycle patterns and deal with the Circadian Rhythm Disorders they face.

2 marks

SECTION B – continued
TURN OVER

Question 3 (2 marks)

Vera runs the water to wash her 6-month baby in the bath running both cold and hot water together, so it is luke-warm. Vera then goes to check the temperature of the bath water with the back of her elbow, and she quickly withdraws her arm as she scalds her arm and runs to put it under the cold water at the basin, and then promptly runs to the fridge to get some ice to put on the back of her arm. Explain what sort of response Vera has made and what parts of the Nervous System have been involved in carrying out such an immediate response. Identify if this is a conscious or an unconscious response.

Question 4 (5 marks)

In the cabin at Brighton Caravan Park located in the countryside, Raji's family were sleeping when they heard a screeching and swooshing sound during the night, and in the darkness, Raji saw a small black animal flying around in the bedroom. He went to put the table lamp on, and soon realised that it was a small fruit bat flying around hysterically. From the doorway, he realised that another small bat was flying around in the living room area. He initially froze in shock not knowing what to do and he hid underneath the covers yelling out to the rest of the family members to duck under the covers. He then mustered enough courage to slowly to get up and open the front and back doors wide open. He grabbed the long duster from the laundry to encourage the bats to fly out and waved it around toward the door. He was sweating profusely, flushed in the face, shaking, and looking quickly around the room to locate both bats as one had gone behind the curtain to hide, and the other bat flew towards the door. He shook the curtain so the other bat would come out and fly out as well. Eventually, both bats flew out the door and he ran to shut the door so quickly while his heart pounded and then went to check on his wife and his children in the other bedrooms. After this, he slowly calmed down and checked the rest of the house and he couldn't believe what had happened during the night.

SECTION B – continued

- a.** According to Selye's GAS model, explain Raji's response to the emergency of the bats flying in the house during the night while he and his family are sleeping. Explain the various stages linked to the different responses Raji makes and discuss the various physiological responses that occur within Raji's body and the parts of the nervous system involved. 3 marks

- b.** Explain whether Raji's stress related to the stressors of the bats entering the cabin would be described as acute or chronic stress. 2 marks

SECTION B – continued
TURN OVER

Question 5 (3 marks)

Identify two coping strategies that can help relieve the effects of chronic stress and explain why they may be effective.

Question 6 (8 marks)

- a. Neuroplasticity via the neural processes of LTP (Long Term Potentiation) and LTD (Long Term Depression) enables individuals to learn and form consolidated Explicit or Implicit memories related to semantic memory and skills, respectively. Using one example for either type of memory, explain how LTP and LTD are responsible for forming each type of memory. 4 marks

SECTION B – continued

- b. Which brain structures are involved in the encoding, consolidation, and storage of the following and explain why?

4 marks

i Explicit Memories- (2 marks)

ii Implicit Memories- (2 marks)

Question 7 (6 marks)

Jesse attempts to learn the structure and main points of a pre-prepared essay for a SAC task by using the Method of Loci. Explain what process she needs to follow in order to learn the points of the essay by using this method. Could he use acronyms or acrostics to learn the points of the essay as an alternative? Which method would be more effective to achieve this purpose?

SECTION B continued

TURN OVER

Question 8 (4 marks)

The Seven Sisters Songline is the largest sung narrative trail in the world based on the story of the Ancestral Beings of Seven Sisters. These Ancestral Beings attempt to possess these sisters in their journey across Country. Consequently, during the journey multiple landmarks and entities as part of Country are created. During this process, vast amounts of knowledge are embedded in the locations of the landmarks and are recalled throughout the Songline. Explain the similarities and differences of Songlines with the mnemonic technique of the Method of Loci.

Question 9 (4 marks)

Explain how Aboriginal and Torres Strait Islander Ways of Knowing is based on a knowledge system which is oral and multi-modal. Compare this approach with the Western ways of imparting knowledge to the younger generation and preserving historical information.

SECTION B continued

Question 10 (6 marks)

- a. Mohammed is an inner-city young doctor who has worked in the emergency department of a major hospital for the last couple of years doing nightshift quite often. His work hours are based on a rotating shift schedule. Mohammed also has a very stressful job given that the nights and most days that he works are so busy and he is run off his feet having no time to think, and no evening is the same. Consequently, Mohammed's work is based on very unpredictable situations with patients that arrive at emergency with all sorts of drastic issues. Explain how working night shift consistently, in the emergency department could affect Mohammed in a cognitive, behavioural, affective, or physical manner?

3 marks

- b. Identify biological, social, and psychological protective factors that will help Mohammed from not becoming mentally ill, and to maintain a healthy mind given the demands of his work?

3 marks

SECTION B- continued
TURN OVER

Question 11 (4 marks)

Explain how Cultural Determinants linked to Cultural Continuity and Self-Determination can be viewed as Protective factors for the social and emotional wellbeing of Aboriginal and Torres Strait Islander Peoples.

Question 12 (10 marks)

- a. In terms of an individual's demand for sleep discuss how sleep pressure is created. Include references to the brain structures involved and explain the process. 2 marks

SECTION B- continued

- b. Explain how the phenomenon of sleep involves Circadian Rhythms as well as Ultradian Rhythms. What is the difference between REM and NREM sleep? 4 marks

- c. Explain how sleep is considered to be a psychological construct and describe the role of the various measurements of sleep in providing an understanding of sleep as a phenomenon. 4 marks

SECTION B- continued
TURN OVER

Question 13 (10 marks)

Professor Sian Beilock from the University of Chicago investigated how student performance on highly pressurised exams, that provide entry to the US College system, could be improved if students are exposed to an intervention beforehand to relieve anxiety. Professor Beilock took this the idea for the writing exercise based on the use of writing to treat mental disorders such as anxiety and depression. Expressive writing over several weeks has been shown to help decrease feelings of anxiety in people with mental disorders. Professor Beilock believes that the technique works by ‘freeing cognitive resources from worry, leaving ‘more brain power’ for exam performance.’

It has been shown that high levels of anxiety impair exam performance. The focus of this study was to use intervention such as the students writing about their worries and fears regarding the upcoming exam before sitting the exam. The study involved creating a high-stake and highly pressurised environment in a laboratory. In the study 20 college students had to sit two short maths pre-tests and they filled in consent forms to participate in the study. Before the tests they were simply told to perform to the best of their ability. In the second trial of the research, the students were divided into two randomly selected groups.

Both groups in trial 2 underwent a second test in a highly pressured scenario which mimicked the admissions tests to the American College System. Both groups were told that they would receive money as a reward if both, they, and a partner, who they had been paired up with, performed well on the maths exam. To increase the pressure, the participants were also told that their partner had already completed the test and that they had performed very well. Consequently, they were made to believe that it depended on them now if the pair would win the money as a reward. The participant was also told that their performance was being video-taped and that it would be watched by teachers.

Before the second test, Group A had to spend 10 minutes sitting quietly and Group B had to spend 10 minutes writing about their fears, worries and feelings regarding the upcoming test in the second trial. After the 10 minutes, both groups took the test which was sat in a highly pressurised situation. The participants were debriefed after the study and the purpose of the study was explained to them.

The researchers analysed the percentage of correct responses in the maths test for group A with no intervention and Group B with intervention. The results showed that in trial 1 (the Pre-Test Condition) performance on the maths test did not significantly differ amongst the two groups. In the second trial, Group A, who just sat quietly showed a 12% decrease in maths accuracy from the pre-test (trial 1) to the post-test (trial 2). **(the mean = 82% vs 70%)**. On the other hand, Group B who wrote out their thoughts, fears and worries before the post-test (trial 2) showed a significant 5% improvement in their performance when comparing their performance between the pre-test and post-test. **(mean= 86% vs 91%)**

(Source-Ramirez, G., & Beilock, S. L.(2011) Writing about testing worries boosts exam performance in the classroom. *Science*, 331(6014), 211. Cited in VICScience Psychology Units 3 & 4, 2022, K. Bradley, et al., p.351)

SECTION B- continued

You are a Psychology teacher and need to explain this study to your Unit 3 & 4 Psychology students. Write the teacher's notes that he/she will use to outline the key features of this research including aspects for consideration such as-

- The Research Hypothesis
- Independent and Dependent Variables
- The Design
- Sampling Method
- The Results and their Implications
- Factors such as Possible Extraneous Variables and Generalisation of Results
- Suggestions for Improvement of Aspects of the study
- Ethical Principles and Other Considerations

SECTION B- continued

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END OF QUESTION AND ANSWER BOOK