Psychology 2015 – Assessment Guide

SECTION A – Multiple-choice questions

levels of processing as informed by Fergus Craik and Robert Lockhart	Question 1 According to Craik and Lockhart's Levels of Processing theory, which of the following levels would be least likely to lead to storage of information in memory? A. deep encoding B. semantic encoding C. structural encoding D. acoustic encoding	*C*	*A structural level of processing is the shallowest level of encoding listed here. Encoding through analysing the physical features of a stimulus is not an effective method of encoding information into long term memory.*

allostasis (stability through change brought about by the brain's regulation of the body's response to stress) as a model that integrates biological, psychological and social factors that explain an individual's response to stress	Question 2 Allostatic systems include A. the immune system. B. the Autonomic Nervous System. C. the fight-flight response. D. all of the above.	*D*	*Allostatic systems include the immune system, the Autonomic Nervous System and the neuroendocrine system. The fight-flight response, a function of the ANS, is also an allostatic system. Allostasis turns on and off these systems to achieve homeostasis.*

retrieval failure theory including tip-of-the-tongue phenomenon	Question 3 Which of the following theories suggests that forgetting is caused by the failure to use, or a lack of, the correct cues to recover information stored in long term memory? A. retrieval failure theory B. interference theory C. motivated forgetting D. decay theory	*A*	*Retrieval failure theory suggests that forgetting is caused by the failure to use, or a lack of, the correct cues to retrieve information stored in long term memory.*

comparisons of classical and operant conditioning in terms of the processes of acquisition, extinction, stimulus generalisation, stimulus discrimination, spontaneous recovery, role of learner, timing of stimulus and response, and nature of response (reflexive/ voluntary)	**Question 4** When can stimulus discrimination occur in classical conditioning? **A.** when a stimulus similar to the unconditioned stimulus does not result in an unconditioned response **B.** when a stimulus similar to the conditioned stimulus does not result in an unconditioned response **C.** when a stimulus similar to the conditioned stimulus does not result in a conditioned response **D.** when a stimulus similar to the unconditioned stimulus does not result in a conditioned response	*C*	*An example of option C could be when someone has been repeatedly bitten (UCS) by bulldogs (CS) and fears them (CR), but is not fearful (no CR) when approached by a Chihuahua (stimulus similar to CS).*
systems of classification of mental conditions and disorders: underlying principles of classification; strengths and limitations of discrete categorical (DSM-IV and ICD-10) and dimensional (graded and transitional) approaches to classification of mental disorders	**Question 5** Which of the following approaches to the classification of mental illnesses would best account for the severity of symptoms a person is experiencing? **A.** the dimensional approach **B.** the cognitive approach **C.** the behavioural approach **D.** the categorical approach	*A*	*A dimensional approach to the classification of mental illnesses allows a clinician to determine the degree to which a person is suffering certain symptoms.*
comparisons of classical and operant conditioning in terms of the processes of acquisition, extinction, stimulus generalisation, stimulus discrimination, spontaneous recovery, role of learner, timing of stimulus and response, and nature of response (reflexive/ voluntary)	**Question 6** Jimmy tries to use bitter-tasting nail polish to condition himself to stop biting his nails. After a few days of nausea-inducing nail biting, Jimmy feels nauseous every time he bites his nails, even when he runs out of bitter-tasting nail polish. A few weeks later, Jimmy begins biting his nails again, which demonstrates the _____ of the conditioned response. **A.** spontaneous recovery **B.** acquisition **C.** stimulus generalisation **D.** extinction	*D*	*Jimmy's learned behaviour of not biting his nails has become extinct. Spontaneous recovery would imply that Jimmy reproduced the learned behaviour after apparent extinction.*

ethical principles and professional conduct: the role of the experimenter; protection and security of participants' rights; confidentiality; voluntary participation; withdrawal rights; informed consent procedures; use of deception in research; debriefing.	**Question 7** Which of the following scenarios would be considered unethical when conducting psychological research? A. paying participants for their time B. coercing participants to take part in a study C. informing participants of their right to discontinue their participation at any time D. both A and B	*B*	*Coercing (forcing) participants to take part in a study breaches the principle of voluntary participation. However, paying participants for their time is not considered coercion generally (unless the money is required by the participant to fulfil basic needs, which would make the money coercive).*

sleep-wake cycle shifts during adolescence compared with child and adult sleep including delayed onset of sleep and need for sleep	**Question 8** An elderly person over 90 years old will likely have A. 0-9% of their sleep as REM sleep. B. 10-19% of their sleep as REM sleep. C. 20-29% of their sleep as REM sleep. D. 40-50% of their sleep as REM sleep.	C	*An elderly person over 90 years old will reduce the number of total hours asleep, meaning that the proportion of REM sleep may increase relative to the total hours of sleep they have.*

concepts of normal waking consciousness and altered states of consciousness including daydreaming and alcohol-induced, in terms of levels of awareness, content limitations, controlled and automatic processes, perceptual and cognitive distortions, emotional awareness, self-control and time orientation	**Question 9** Automatic processes A. require selective attention. B. require divided attention. C. disable selective attention. D. enable divided attention.	*D*	*Automatic processes enable attention to be divided amongst other processes. For example, walking along a footpath may enable attention to be divided by also talking to the person next to you.*

concepts of normal waking consciousness and altered states of consciousness including daydreaming and alcohol-induced, in terms of levels of awareness, content limitations, controlled and automatic processes, perceptual and cognitive distortions, emotional awareness, self-control and time orientation	**Question 10** Controlled processes **A.** require selective attention. **B.** require divided attention. **C.** disable selective attention. **D.** enable divided attention.	*A*	*Controlled processes can only occur in a serial manner; that is, one controlled process after another. Therefore, they require selective attention.*

Use the following information to answer Questions 11-13.
Mary has an intact brain whereas Marco has had a split brain surgery to reduce the severity of his epileptic seizures.

split-brain studies including the work of Roger Sperry and Michael Gazzaniga	**Question 11** Mary and Marco are presented a picture of an apple only to their right visual field. Where would this visual information be initially processed for Mary and Marco? **A.** the left hemisphere for both Mary and Marco **B.** the right hemisphere for both Mary and Marco **C.** the left hemisphere for Mary, and the right hemisphere for Marco **D.** the left hemisphere for Mary, and neither hemisphere for Marco	*A*	*Visual information presented to the right visual field is always first processed by the left hemisphere, regardless of whether a split brain surgery has taken place.*

split-brain studies including the work of Roger Sperry and Michael Gazzaniga *hemispheric specialisation: the cognitive and behavioural functions of the right and left hemispheres of the cerebral cortex, non-verbal versus verbal and analytical functions*	**Question 12** Mary has her right eye closed. A picture of an orange is presented briefly, only to her left visual field. She is asked to verbalise what she saw. Which of the following represents how Mary would process this information? **A.** she would not be able to process the visual information **B.** information would be processed initially in the right hemisphere **C.** information would be processed only in the right hemisphere **D.** she would not be able to process the visual information, but could still verbalise what she saw	*B*	*Remembering that Mary has an intact brain, she will initially process the information by the right half of her left eye's retina, which will then initially be processed by the occipital lobe in her right hemisphere, before moving to language areas in her left hemisphere.*

split-brain studies including the work of Roger Sperry and Michael Gazzaniga	**Question 13** Marco has both eyes open and stares at the middle of a screen. A picture of an orange is presented briefly, only to his left visual field. Which of the following represents how Marco could demonstrate what he saw? **A.** Marco would not be able to verbalise what he saw, but could draw a picture of an orange with his right hand **B.** Marco would not be able to verbalise what he saw, but could draw a picture of an orange with his left hand **C.** Marco could verbalise what he saw, and draw a picture of an orange with his right hand **D.** Marco could verbalise what he saw, and draw a picture of an orange with his left hand	*B*	*Because Marco's corpus callosum is severed, he can only process the picture of an orange with his right hemisphere which receives information from his left visual field.* *The right hemisphere is not responsible for language, and therefore, he is not able to verbalise what he saw.* *However, he is able to draw a picture of the orange with his left hand which is controlled by his right hemisphere.*

roles of the four lobes of the cerebral cortex in the control of motor, somatosensory, visual and auditory processing in humans; primary cortex and association areas	**Question 14** In which lobe is visual information primarily processed? **A.** frontal lobe **B.** parietal lobe **C.** occipital lobe **D.** temporal lobe	C	*The occipital lobe holds the Primary Visual Cortex, where visual information is primarily processed.*

Use the following information to answer Questions 15-19.

Little Albert had learned to associate a white rat with a loud and scary noise. Although he was not initially afraid of the rat, he was naturally afraid of the loud noise and started to cry. Soon, every time Little Albert saw the rat, he started to cry.

classical conditioning as informed by Ivan Pavlov: roles of neutral, unconditioned, conditioned stimuli; unconditioned and conditioned responses	**Question 15** In Little Albert's case, what is the unconditioned response? **A.** the rat **B.** the loud and scary noise **C.** crying at the rat **D.** crying at the loud and scary noise	*D*	*The UCR is the naturally occurring response, which is crying at the loud and scary noise in this case.*

classical conditioning as informed by Ivan Pavlov: roles of neutral, unconditioned, conditioned stimuli; unconditioned and conditioned responses	**Question 16** In Little Albert's case, what is the conditioned response? **A.** the rat **B.** the loud and scary noise **C.** crying at the rat **D.** crying at the loud and scary noise	*C*	*The CR is the learned response, which is crying at the rat.*

comparisons of classical and operant conditioning in terms of the processes of acquisition, extinction, stimulus generalisation, stimulus discrimination, spontaneous recovery, role of learner, timing of stimulus and response, and nature of response (reflexive/ voluntary)	Question 17 In Little Albert's case, stimulus generalisation would occur when he responds to _____ in a similar way to the conditioned stimulus. A. white rats B. other white and furry objects such as a rabbit, but not white rats, C. other white and furry objects such as a rabbit D. no rats	*C*	*Stimulus generalisation occurs when a stimulus that is similar (but not identical) to the CS produces the CR. In this case, this is crying (CR) at other white and furry objects (stimuli similar to the CS).*

the extent to which ethical principles were applied to classic research investigations into learning including John Watson's 'Little Albert' experiment	Question 18 One reason why this study could be considered unethical is because A. Little Albert's name was not his real name B. there was no attempt to get Little Albert to have stimulus generalisation of the white rat to other white and furry objects C. there was an attempt to get Little Albert to have stimulus discrimination between a white rat and other white and furry objects D. there was no attempt to extinguish the learned response	*D*	*No attempt to extinguish the fear response was documented in the Little Albert study, which breaches the principle of debriefing which entails the reversing of any ill-effects of a study.*

role of the temporal lobe including the hippocampus and the amygdala	Question 19 Which of the following parts of the brain would have the most dominant role in consolidating the emotion of fear with white rats? A. hippocampus B. amygdala C. occipital lobe D. frontal lobe	*B*	*The consolidation of emotional information to memory is primarily facilitated by the amygdala.*

applications of classical conditioning: graduated exposure, aversion therapy, flooding

comparisons of classical and operant conditioning in terms of the processes of acquisition, extinction, stimulus generalisation, stimulus discrimination, spontaneous recovery, role of learner, timing of stimulus and response, and nature of response (reflexive/ voluntary)

Question 20

How could flooding be used to extinguish a fear of dogs?

A. repeated exposure of the actual conditioned stimulus (a dog) without the unconditioned stimulus (being bitten) would eventually lead to the conditioned response no longer being produced
B. repeated exposure of a stimulus that approximates the conditioned stimulus (such as a cartoon dog) without the unconditioned stimulus (being bitten) would eventually lead to the conditioned response no longer being produced
C. repeated exposure of the actual conditioned stimulus (a dog) with a new unconditioned stimulus (such as relaxing music) would eventually lead to the association of a relaxation response to the conditioned stimulus
D. repeated exposure of a stimulus that approximates the conditioned stimulus (such as a cartoon dog) with a new unconditioned stimulus (such as relaxing music) would eventually lead to the association of a relaxation response to the conditioned stimulus

A *The process of extinction involves the repeated exposure of the actual (not approximate) CS without the UCS, in order for the CR no longer being produced.*

classical conditioning as informed by Ivan Pavlov: roles of neutral, unconditioned, conditioned stimuli; unconditioned and conditioned responses

Question 21

What is the difference between the neutral stimulus and the conditioned stimulus in Pavlov's experiment using dogs to associate a bell and meat powder?

A. the neutral stimulus is the meat powder before acquisition, and the conditioned stimulus is the bell after acquisition
B. the neutral stimulus is the bell before acquisition, and the conditioned stimulus is the meat powder after acquisition
C. the neutral stimulus is the bell before acquisition, and the conditioned stimulus is the bell after acquisition
D. the neutral stimulus is the meat powder before acquisition, and the conditioned stimulus is the meat powder after acquisition

C *After acquisition, the NS becomes the CS, which then elicits the CR.*

sleep recovery patterns including amount of sleep required, REM rebound and microsleeps

loss of REM and NREM sleep

Question 22

If a person loses two hours of REM sleep, it is likely that the following night s/he will experience

A. microsleeps.
B. REM rebound.
C. REM recover.
D. even less REM.

B *REM sleep deprivation leads to REM rebound, which is where REM sleep increases in the following night of sleep in lieu of the lost REM.*

sleep recovery patterns including amount of sleep required, REM rebound and microsleeps	**Question 23** Rufus has just completed an intense Psychology exam, whereas Yen has just completed an intense ultra-marathon run. Which of the following statements is most likely to be true? **A.** Yen will have slightly more REM sleep than Rufus that night. **B.** Rufus will have significantly more REM sleep than Yen that night. **C.** Yen will have significantly more NREM sleep than Rufus that night. **D.** Both B and C.	*C*	*Whilst it may be true that Rufus would require more REM sleep to recover from the psychological cost of undertaking his Psychology exam, it is unlikely to be significantly greater than Yen's amount of REM. On the other hand, Yen is likely to have significantly greater proportions of NREM sleep than Rufus as this will help her to recover from the physiological cost of undertaking the ultra-marathon.*
spatial neglect caused by stroke or brain injury	**Question 24** Spatial neglect can be caused by stroke, affecting areas of the brain responsible for spatial reasoning. What is a stroke? **A.** A stroke occurs when blood supply to the brain is interrupted, which kills brain cells that rely on the oxygen that the blood carries. **B.** A stroke occurs when water supply to the brain is interrupted, which kills brain cells that rely on the oxygen that is carried in the water. **C.** A stroke is any brain injury. **D.** A stroke occurs when a person has a heart attack, and usually kills them.	*A*	*A stroke involves an interruption to the flow of blood to the brain.*
spatial neglect caused by stroke or brain injury	**Question 25** Which area of the brain is typically affected in spatial neglect patients? **A.** the occipital lobe of the right hemisphere **B.** the parietal lobe of the right hemisphere **C.** the occipital lobe of the left hemisphere **D.** the frontal lobe of the left hemisphere	*B*	*The posterior (rear area of the) parietal lobe of the right hemisphere is typically damaged in spatial neglect patients.*
the neuron in memory formation including the role of axons, dendrites, synapses and neuro-transmitters	**Question 26** The _____ of the post-synaptic neuron receive nerve impulses from the pre-synaptic neuron, whereas the _____ transfer nerve impulses away from the soma towards other neurons. **A.** axons; dendrites **B.** synapses; axons **C.** dendrites; axons **D.** neurotransmitters; dendrites	*C*	*The dendrites of the post-synaptic neuron receive nerve impulses/neurotransmitters from the pre-synaptic neuron, whereas axons transfer nerve impulses/neurotransmitters from a neuron to another adjoining neuron.*

forgetting curve as informed by the work of Hermann Ebbinghaus

Atkinson-Shiffrin's multi-store model of memory including maintenance and elaborative rehearsal, serial position effect and chunking

Question 27

When constructing the forgetting curve, Hermann Ebbinghaus used nonsense syllables so that

A. the meaningfulness of the items to be remembered was minimised as an extraneous variable.
B. the rehearsal of the items to be remembered was eliminated as an extraneous variable.
C. the memorisation of the items to be remembered was eliminated as an extraneous variable.
D. no extraneous variables would be present in his study.

A

The meaningfulness of the items to be remembered was minimised through the use of nonsense syllables. This would have made it difficult for semantic processing to occur, which may otherwise have been an extraneous variable.

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motivated forgetting as informed by the work of Sigmund Freud including repression and suppression

Question 28

Sigmund Freud was a prominent theorist in the study of the subconscious and unconscious mind. Which theory of forgetting involves deliberately forgetting unwanted information?

A. decay theory
B. repression
C. suppression
D. the tip-of-the-tongue phenomenon

C

Suppression is motivated forgetting that theoretically occurs through deliberately and consciously forgetting information that is typically unpleasant or upsetting to the individual.

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observational learning (modelling) processes in terms of the role of attention, retention, reproduction, motivation, reinforcement as informed by Albert Bandura's social learning theory

Question 29

Reinforcement in observational learning can occur _____, which does not occur in operant conditioning.

A. vicariously
B. directly
C. positively
D. negatively

A

Operant conditioning requires the learner to be directly reinforced or punished, whereas in observational learning, reinforcement or punishment can occur through someone else's experience (vicariously).

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physiological and psychological characteristics of responses to stress including fight-flight response, eustress and distress

Question 30

Eustress typically involves

A. no stress at all.
B. significant amounts of stress.
C. beneficial or desirable responses associated with the stressor.
D. detrimental or undesirable responses associated with the stressor.

C

Eustress is a positive psychological response to a stressor, such as when you feel excited (and also stressed) about an upcoming birthday party you're hosting.

Concepts of normality and differentiation of mental health from mental illness

Question 31

In the assessment of intelligence, the mean IQ is 100 and the standard deviation is 15. Having an IQ above 150 would be considered abnormal according to the _____ approach to normality.

A. medical
B. historical
C. statistical
D. functional

C

The statistical approach suggests that normality is defined by the frequency with which a characteristic is present in a population. A very high IQ is very infrequent in the population, and therefore would be considered statistically abnormal.

the effects of total and partial sleep deprivation	Question 32 Sustained concentration on simple tasks is _____ affected by sleep deprivation compared to short, complex tasks. A. less B. more C. not D. insignificantly	*B*	*Sustained concentration on simple tasks is most affected by sleep deprivation because they are difficult to pay attention to (given little mental stimulation to sustain wakefulness), compared to short, complex tasks which are not as affected by sleep deprivation.*

the effects of total and partial sleep deprivation	Question 33 Which of the following is not a psychological symptom of partial sleep deprivation? A. reduced ability to perform automatic processes B. reduced ability to perform controlled processes C. droopy eyelids D. difficulty paying attention	*C*	*Droopy eyelids is a physiological (not psychological) symptom of partial sleep deprivation.*

the effects of total and partial sleep deprivation	Question 34 After several good night's rest, what are the long term effects of sleep deprivation? A. reduced ability to perform automatic processes B. reduced ability to perform controlled processes C. persistent hallucinations D. none of the above	*D*	*There are no long term effects of sleep deprivation as long as several nights of good rest are undertaken to repay the sleep debt.*

developmental plasticity and adaptive plasticity of the brain: changes to the brain in response to learning and experience; timing of experiences	**Question 35** How do sensitive periods differ from critical periods? A. a sensitive period is the timeframe when experience-dependent learning ideally takes place, whereas a critical period is the timeframe when experience-dependent learning must take place in order for the organism to learn from that experience B. a sensitive period is the timeframe when experience-expectant learning ideally takes place, whereas a critical period is the timeframe when experience-expectant learning must take place in order for the organism to learn from that experience C. sensitive periods only occur in non-human animals, whereas critical periods only occur in humans D. sensitive periods only occur in humans, whereas critical periods only occur in non-human animals	*B*	*Experience-expectant learning can occur when all members of a species are typically exposed to a certain experience, such as hearing the sounds of language, in order to acquire spoken language.* *Sensitive periods are the optimal or best times that the learning of certain skills can take place, such as spoken language acquisition. Experience-expectant learning ideally occurs within a sensitive period.* *Critical periods are the only times that certain skills can be learnt for an organism. Once the critical period is over, the skill can no longer be learnt. Experience expectant learning must occur within that timeframe in order for the organism to learn from the experience.*
developmental plasticity and adaptive plasticity of the brain: changes to the brain in response to learning and experience; timing of experiences	**Question 36** Which of the following is not a similarity between developmental and adaptive plasticity? A. both developmental and adaptive plasticity involve changes to the brain B. both developmental and adaptive plasticity involve changes to the brain across the lifespan C. both developmental and adaptive plasticity involve synaptogenesis D. both developmental and adaptive plasticity decline as age progresses	*B*	*Adaptive plasticity involves changes to the brain across the lifespan, whereas developmental plasticity involves changes to the brain from birth to the end of adolescence.*
memory decline over the lifespan	**Question 37** Which of the following types of memory is likely to be most negatively affected with age? A. procedural memory B. semantic memory C. episodic memory D. factual memory	*C*	*Episodic memory, particularly prospective episodic memory (remembering to do things in future), is likely to be most affected with age.*

memory decline over the lifespan	**Question 38** Which of the following types of memory is likely to be least negatively affected with age? **A.** procedural memory **B.** semantic memory **C.** episodic memory **D.** factual memory	*A*	*Procedural memories are least likely to be affected with age. Older people tend to have difficulties with retrieving explicit rather than implicit memories.*

Use the following information to answer Questions 39-46.

Frederick is in the process of planning his 18th birthday party. He is deciding to hire a function room at either of his two favourite restaurants; the 'Jade Phoenix' restaurant and the 'Happy Dumpling' restaurant.

Alan Baddeley and Graham Hitch's model of working memory: central executive, phonological loop, visuo-spatial sketchpad, episodic buffer	**Question 39** Frederick rings up the restaurants for their function menu prices for 40 people. The Jade Phoenix restaurant quotes for $75 per person for a banquet, and the Happy Dumpling restaurant quotes for $12 per person for a banquet. His _____ will direct his _____ to update his memory of the two restaurants' function prices. **A.** visuo-spatial sketchpad; central executive **B.** phonological loop; episodic buffer **C.** central executive; episodic buffer **D.** episodic buffer; central executive	*C*	*The central executive is responsible for directing the episodic buffer to update information into long term memory.*

consolidation theory	**Question 40** In order for Frederick to remember the prices associated with each restaurant in the long term, the memories require a process of consolidation. This process requires **A.** time. **B.** no interference to the memory trace. **C.** a physical change to occur in the brain. **D.** all of the above.	*D*	*The process of consolidation requires time, no interference and a physical change to occur in the brain.*

consolidation theory *role of the temporal lobe including the hippocampus and the amygdala*	**Question 41** Which part of Frederick's brain is responsible for consolidating this information? **A.** the hippocampus **B.** the amygdala **C.** the primary visual cortex **D.** the primary auditory cortex	*A*	*The hippocampus is responsible for consolidating declarative information to long term memory.*

hemispheric specialisation: the cognitive and behavioural functions of the right and left hemispheres of the cerebral cortex, non-verbal versus verbal and analytical functions	**Question 42** Frederick's _____ would be most dominant while he imagines the function rooms at the restaurants and where all of his friends will sit, whereas when he weighs up the pros and cons of either venue, his _____ would be most dominant. **A.** right hemisphere; left hemisphere **B.** left hemisphere; right hemisphere **C.** frontal lobe; occipital lobe **D.** temporal lobe; parietal lobe	*A*	*The right hemisphere is more dominant in creativity and spatial processing, whereas the left hemisphere is more dominant in logically analysing the situation.*

interference theory

Question 43

After consulting his parents, Frederick decides to book the Happy Dumpling restaurant with the manager, Sofia.

Why is it more likely that Frederick would confuse 'Sofia' and 'Sophie', compared to distinct names such as 'Bernadette' and 'Sophie'?

A. distinct information is more prone to retrieval failure
B. similar information is more prone to motivated forgetting
C. distinct information is more prone to decay
D. similar information is more prone to interference

D *Similar information is more prone to interference because it is more easily confused.*

interference theory

Question 44

Frederick discusses his birthday plans with his best friend, Jimbo, over dinner at Jimbo's place. Frederick is introduced to Jimbo's parents; Sophie and Sam.

Now each time Frederick calls Sofia about making arrangements at the Happy Dumpling restaurant, he finds it very difficult to call her by her correct name, and not by Sophie. This difficulty is due to

A. retroactive interference
B. proactive interference
C. retrograde amnesia
D. anterograde amnesia

A *New information (Sohpie) is inhibiting the recollection of old information (Sophia), and therefore, this is an example of retroactive interference.*

use of context dependent cues and state dependent cues

Question 45

Frederick has a great time at his 18th birthday party at the Happy Dumpling restaurant. Each time he revisits the Happy Dumpling restaurant, he is reminded of the great time he had at his 18th birthday. The Happy Dumpling restaurant is acting as a _____, which triggers the memory of his 18th birthday.

A. episodic memory
B. state-dependent cue
C. context-dependent cue
D. state-dependent and context-dependent cue

C *The Happy Dumpling restaurant is acting as a context-dependent cue to trigger related memories of Frederick's birthday that was held at this location. The restaurant is not a state-dependent cue, as it is not an emotional state in itself; rather, the restaurant has emotional states associated with it.*

decay theory

Question 46

62 years on, Frederick has not thought much of his 18th birthday party. At his 80th birthday party, Frederick's grandkids ask him what he did for his 18th birthday. Frederick fondly and vividly recalls his banquet at the Happy Dumpling restaurant. Remembering vivid memories that have not been recently rehearsed is said to be a limitation of

A. retrieval failure theory.
B. interference theory.
C. motivated forgetting.
D. decay theory.

D *A limitation of decay theory is that it cannot account for the recall of vivid memories that have not been rehearsed, as in theory, the memory trace would have faded over time.*

applications of operant conditioning: shaping, token economies

comparisons of classical and operant conditioning in terms of the processes of acquisition, extinction, stimulus generalisation, stimulus discrimination, spontaneous recovery, role of learner, timing of stimulus and response, and nature of response (reflexive/ voluntary)

Question 47

How could shaping be described in terms of acquisition?

A. the establishment of a learned response is achieved by punishing successful approximations of the desired behaviour
B. the establishment of a learned response is achieved by reinforcing successful approximations of the desired behaviour
C. the establishment of a learned response is achieved by punishing successive approximations of the desired behaviour
D. the establishment of a learned response is achieved by reinforcing successive approximations of the desired behaviour

D *Shaping involves reinforcing behaviours that gradually get closer to the desired behaviour. Acquisition in shaping is the establishment of a learned response through reinforcement of those successive approximations.*

Use the following information to answer Questions 48-52.

Rex, Liz's dog, runs towards Liz whenever he hears the electric tin opener being used.

trial-and-error learning

Question 48

At first, Rex used to run towards Liz in the hope of food whenever he heard a strange noise coming from the kitchen. This response was only reinforced when Liz was using the electric tin opener to open cans of dog food, not when Liz was blending her smoothies. Eventually, Rex learnt that running towards Liz when the electric tin opener was being used was the only response that resulted in a reward. Rex's process of learning is also known as

A. classical conditioning.
B. observational learning.
C. trial and error learning.
D. vicarious learning.

C *Trial and error learning involves attempts (trials) and incorrect behaviours (errors) before arriving at the desired response.*

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement

Question 49

Providing food to Rex could be seen as positive reinforcement because it would add a/n _____ stimulus that _____ the likelihood of the behaviour of running towards Liz at the sound of the electric tin opener.

A. aversive; increases
B. pleasant; increases
C. aversive; decreases
D. pleasant; decreases

B *Positive reinforcement involves providing a pleasant stimulus that increases the likelihood/strengthens the behaviour occurring in future.*

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement	**Question 50** Yelling at Rex could be seen as positive punishment because it would add a/n _____ stimulus that _____ the likelihood of the behaviour of running towards Liz at the sound of the blender. **A.** aversive; increases **B.** pleasant; increases **C.** aversive; decreases **D.** pleasant; decreases	*C*	*Positive punishment involves providing an unpleasant (aversive) stimulus that decreases the likelihood/weakens the behaviour from occurring in future.*

comparisons of classical and operant conditioning in terms of the processes of acquisition, extinction, stimulus generalisation, stimulus discrimination, spontaneous recovery, role of learner, timing of stimulus and response, and nature of response (reflexive/ voluntary)	**Question 51** The role of the learner (Rex) in this situation is relatively _____ and the nature of his response is _____. **A.** active; reflexive **B.** passive; voluntary **C.** passive; reflexive **D.** active; voluntary	*D*	*In operant conditioning, the role of the learner is relatively active and the nature of the response is voluntary, as opposed to classical conditioning where the role of the learner is relatively passive and the nature of the response is reflexive.*

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement	**Question 52** The sound of the electric tin can opener could be considered the **A.** response **B.** behaviour **C.** consequence **D.** discriminative stimulus	*D*	*The discriminative stimulus or antecedent signals to the organism that reinforcement could occur.*

strategies for coping with stress including biofeedback, meditation/ relaxation, physical exercise, social support	**Question 53** Biofeedback involves **A.** receiving information about physiological arousal **B.** receiving information about psychological arousal **C.** meditation about psychological wellbeing **D.** medication for physiological illness	*A*	*Biofeedback involves the measurement of autonomic, physiological responses that can then be used to inform psychological strategies to reduce physiological indicators of stress.*

roles of the four lobes of the cerebral cortex in the control of motor, somatosensory, visual and auditory processing in humans; primary cortex and association areas

Question 54

Tarryn accidentally knocks her big toe on the leg of a chair. Which area of her brain is primarily processing this information?

A. the upper part of her primary somatosensory cortex
B. the lower part of her primary somatosensory cortex
C. the upper part of her primary motor cortex
D. the lower part of her primary motor cortex

A

Touch sensation is processed by the primary somatosensory cortex.

The lower parts of the body (e.g. toes) are represented on the upper parts of the primary somatosensory and motor cortices.

The upper parts of the body (e.g. tongue) are represented on the lower parts of the primary somatosensory and motor cortices.

roles of the four lobes of the cerebral cortex in the control of motor, somatosensory, visual and auditory processing in humans; primary cortex and association areas

Question 55

Which lobe's association area is primarily involved in giving Tarryn spatial awareness?

A. frontal
B. parietal
C. occipital
D. temporal

B

The parietal lobe is involved in spatial awareness, as damage to this area can lead to spatial neglect.

roles of the four lobes of the cerebral cortex in the control of motor, somatosensory, visual and auditory processing in humans; primary cortex and association areas

Question 56

Which of the following is false?

A. the cerebral cortex is larger than the frontal lobe
B. the cerebral cortex is approximately 2-5cm thick
C. the cerebral cortex covers two cerebral hemispheres
D. the cerebral cortex is convoluted

B

The cerebral cortex is approximately 2-5 millimetres thick, not 2-5 centimetres thick.

amnesia resulting from brain trauma and neuro-degenerative diseases including dementia and Alzheimer's disease

Question 57

The first sign of Alzheimer's disease is often _____, but a conclusive diagnosis of the disease can only be made _____.

A. loss of short term memory; through an autopsy.
B. loss of short term memory; using psychological tests such as asking the patient whether s/he remembers a series of numbers
C. loss of long term memory; through an autopsy.
D. loss of long term memory; using psychological tests such as asking the patient whether s/he remembers a series of numbers

A

Loss of short term memory function is often one of the first signs of Alzheimer's disease. A conclusive diagnosis can only be made through an autopsy, after death.

amnesia resulting from brain trauma and neuro-degenerative diseases including dementia and Alzheimer's disease	**Question 58** Alzheimer's disease is a neurodegenerative disease which eventually results in A. anterograde amnesia B. retrograde amnesia C. retroactive interference D. both anterograde and retrograde amnesia	*D*	*Severely progressed Alzheimer's disease results in both the inability to encode new memories (anterograde amnesia) and the inability to recall old memories (retrograde amnesia).*

sleep as an altered state of consciousness: purpose of sleep, characteristics and patterns of the stages of sleep including rapid eye movement (REM) and the non-rapid eye movement (NREM) stages of sleep	**Question 59** Stage 4 NREM sleep can be indicated on an electroencephalograph which would likely show A. low amplitude, low frequency waves B. low amplitude, high frequency waves C. high amplitude, low frequency waves D. high amplitude, high frequency waves	*C*	*Delta waves are most common in stage 4 NREM sleep, which are characterised by their high amplitude and low frequency.*

sleep as an altered state of consciousness: purpose of sleep, characteristics and patterns of the stages of sleep including rapid eye movement (REM) and the non-rapid eye movement (NREM) stages of sleep	**Question 60** K complexes are typical of which stage of sleep? A. stage 1 NREM sleep B. stage 2 NREM sleep C. stage 3&4 NREM sleep D. REM sleep	*B*	*K complexes (and sleep spindles) are typical of stage 2 NREM sleep.*

sleep as an altered state of consciousness: purpose of sleep, characteristics and patterns of the stages of sleep including rapid eye movement (REM) and the non-rapid eye movement (NREM) stages of sleep	**Question 61** Which of the following is true about the survival theory of sleep? A. it explains why sleep involves a loss of awareness, given that prey are more vulnerable to being preyed upon if they do not respond quickly to dangers in the environment B. it explains why sleep is necessary C. it explains why sleep depends an animal's vulnerability to predators D. it does not explain why animals that need to graze for long periods of time, such as cows, sleep relatively less	*C*	*The survival theory suggests that sleep enhances the survival of an animal by making it inactive during the most risky time of day to move about or when it may be most likely to be exposed to predators.*

behaviours not dependent on learning including reflex action, fixed action patterns and behaviours due to physical growth and development (maturation)	**Question 62** How are fixed action patterns different from reflexes? A. fixed action patterns are not species-specific and tend to involve simplistic responses, whereas reflexes are species-specific and tend to involve complex behaviours B. fixed action patterns are not species-specific and tend to involve complex behaviours, whereas reflexes are species-specific and tend to involve simplistic responses C. fixed action patterns are species-specific and tend to involve simplistic responses, whereas reflexes are not species-specific and tend to involve complex behaviours D. fixed action patterns are species-specific and tend to involve complex behaviours, whereas reflexes are not species-specific and tend to involve simplistic responses	*D*	*Fixed action patterns are specific to a species (such as a funnel-web spider spinning a tubular web), whereas reflexes can occur across species and tend to involve single, simplistic responses (such as retracting a limb from a hot surface).*
mnemonic devices including acronyms, acrostics and narrative chaining	**Question 63** The mnemonic EFTPOS to remember 'Electronic Funds Transfer at Point Of Sale', could be considered a/n A. acrostic. B. acronym. C. antonym. D. narrative chain.	*B*	*This is an example of an acronym because it is a pronounceable word formed from the first letter of a series of words.*
effect of misleading questions on eye-witness testimonies including the reconstructive nature of memory informed by the work of Elizabeth Loftus	**Question 64** How could a leading question produce incorrect memories of a witnessed event? A. leading questions will most likely guide a witness to recall details of what actually occurred B. the process of memory search can be influenced by words in a leading question, which may contain cues that lead to the recall of incorrect information C. misinformation that is presupposed by a leading question may be stored as part of an updated version of the memory D. both B and C	*D*	*Leading questions can influence both the process of memory search (recall) as well as updating misleading information to existing memories of a witnessed event.*
Atkinson-Shiffrin's multi-store model of memory including maintenance and elaborative rehearsal, serial position effect and chunking *Alan Baddeley and Graham Hitch's model of working memory: central executive, phonological loop, visuo-spatial sketchpad, episodic buffer*	**Question 65** Which of the following is true about auditory memory and the phonological loop? A. echoic memory is the same as the phonological loop B. echoic memory is a type of working memory, whereas the phonological loop is a type of sensory memory C. echoic memory is a type of sensory memory, whereas the phonological loop is a type of working memory D. echoic memory and the phonological loop both process visual information	*C*	*Echoic memory is a form of sensory memory, part of the Atkinson-Shiffrin multi-store model of memory.* *The phonological loop is a type of working memory, part of Baddeley and Hitch's model of working memory.* *Both are stores of auditory information.*

SECTION B – Short-answer questions

concepts of normal waking consciousness and altered states of consciousness including daydreaming and alcohol-induced, in terms of levels of awareness, content limitations, controlled and automatic processes, perceptual and cognitive distortions, emotional awareness, self-control and time orientation	**Question 1** (3 marks) Describe the changes to content limitations, perception and cognition that would be likely to occur when in an alcohol-induced altered state of consciousness, as compared to normal waking consciousness.	**Answer:** • *A person in an alcohol-induced altered state of consciousness would likely have fewer content limitations, which would lead the person to have more information entering consciousness, leading to more illogical thought, than in normal waking consciousness.* • *Perception of sensory information (such as vision or pain) would likely be dulled compared to normal waking consciousness.* • *Cognition would likely be impaired, with possible disruptions to memory consolidation, decision making, or other thought processes, compared to normal waking consciousness.* **Marking protocol:** One mark for each of the above points.

concepts of normal waking consciousness and altered states of consciousness including daydreaming and alcohol-induced, in terms of levels of awareness, content limitations, controlled and automatic processes, perceptual and cognitive distortions, emotional awareness, self-control and time orientation	**Question 2** (2 marks) Can a person process information when they are not consciously aware of it? Justify your answer with an example.	**Answer:** • *Yes (information processing can take place outside of conscious awareness or outside of what you are attending to at the time.)* • *The cocktail party phenomenon, where being focused on a current conversation can be diverted to another conversation in the background when your name is mentioned, suggests that information is being processed outside of conscious awareness.* **Marking protocol:** One mark for each of the above points.

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement	**Question 3** (3 marks) Would a ratio schedule of reinforcement or an interval schedule of reinforcement more likely to lead to a relatively high rate of responding, and why?	**Answer:** • *A ratio schedule of reinforcement would be more likely to lead to an overall high rate of responding than an interval schedule.* • *In a ratio schedule of reinforcement, there is a direct relationship between the rate of responding and the rate of reinforcement. This leads to a relatively high rate of responding because increased responses lead to more reinforcement.* • *On the other hand, with an interval schedule of reinforcement, the rate of reinforcement is almost independent of the rate of responding. This leads to a relatively low rate of responding because increased responses do not lead to more reinforcement (e.g. even rapid responding is not reinforced until the end of an interval).* **Marking protocol:** One mark for each of the above points.

organisation of long-term memory including declarative (episodic and semantic) and procedural memory, and semantic network theory	**Question 4** (4 marks) Using examples, describe the difference between explicit and implicit memories.	**Answer:** • *Explicit memories (such as declarative memories) can be stated, whereas implicit memories (such as procedural memories) can be retrieved with little conscious awareness and are usually difficult to state.* • Examples of explicit memories could include: o *knowing that 2x2=4* o *knowing a definition* o *knowing the date of the Psychology exam* o *knowing who was at your 18th birthday party* o *knowing the name of your Psychology teacher* • Examples of implicit memories could include: o *knowing how to ride a bike* o *knowing how to kick a goal* o *knowing how to play a musical instrument* o *knowing how to open a door* o *an emotional reaction, such as anger towards a teacher who punishes you* **An alternative answer:** *Implicit memories can only be tested by being implied through certain behaviours; for example, I would only know that you have an implicit memory of riding a bike if I saw you riding a bike. Explicit memories can be tested by asking a person to state facts about a certain thing/event; for example, stating that a standard bike has two wheels.* **Marking protocol:** Two marks for the first point, comparing explicit versus implicit memories. Any example of explicit memories (such as semantic or episodic memories) and implicit memories (such as any procedural memory) are acceptable for one mark each.
measures of retention including the relative sensitivity of recall, recognition and relearning	**Question 5a** (4 marks) Using examples, explain the difference between cued recall and recognition.	***Answer:*** • *Cued recall tasks involve the use of prompts to assist in the retrieval of information (with no mention of the actual answer), whereas recognition tasks involve the selection/identification of the correct answer from a range of distractors.* • *For example, a cued recall task could involve writing down the names of your Year 7 class with the assistance of a class photo, whereas a recognition task could involve selecting the names of students in your Year 7 class from a list that have all of their names amongst other names.* **Marking protocol:** Two marks for each of the above points. Any relevant example which contrasts cued recall and recognition tasks will be awarded two marks.

measures of retention including the relative sensitivity of recall, recognition and relearning	**Question 5b** (3 marks) Which is a less sensitive measure of retention; cued recall or recognition? Why?	**Answer:** • *Cued recall would be considered a less sensitive measure of retention.* • *This is because cued recall provides fewer cues that are closer to the actual answer, leading to a lower likelihood that the answer can be detected in one's memory.* • *On the other hand, recognition provides the actual answer amongst a list of distractors, which increases the likelihood of the answer being detected in one's memory.* **Marking protocol:** One mark for each of the above points.

Atkinson-Shiffrin's multi-store model of memory including maintenance and elaborative rehearsal, serial position effect and chunking	**Question 6** (4 marks) Short Term Memory (STM) is a limited capacity store. Name and explain two ways information can be lost from STM.	**Answer:** • *Displacement – information in Short Term Memory is pushed out by other incoming information, because of its limited capacity.* • *Decay – information (or the neural trace) fades away, typically due to disuse, because of its limited duration.* **Marking protocol:** Two marks for each of the above points; one for the key term, and one for its definition.

Use the following information to answer Question 7.

When she was younger, Lily experienced many episodes of frightening turbulence on several flights from Melbourne to Sydney. Lily now has a persistent, intense and irrational fear of flying.

classical conditioning as informed by Ivan Pavlov: roles of neutral, unconditioned, conditioned stimuli; unconditioned and conditioned responses	**Question 7a** (6 marks) Using the language of classical conditioning, explain how Lily may have acquired a fear of flying.	**Answer:** • *The unconditioned stimulus of turbulence would have resulted in the unconditioned response of fear to the turbulence.* • *Through repeated pairings of the neutral stimulus of flying and the unconditioned stimulus of turbulence, this would eventually result in creating a conditioned stimulus of flying, and a conditioned response of a fear of flying.* **Marking protocol:** One mark for describing the UCS, UCR, NS, CS and CR, as well as mentioning 'repeated pairings', as this is an essential part of the acquisition process in classical conditioning.

psychological determinants of the stress response; strengths and limitations of Richard Lazarus and Susan Folkman's Transactional Model of Stress and Coping	**Question 7b** (3 marks) Describe the primary and secondary appraisals that Lily is likely to make if she flies from Melbourne to Sydney again and how these may lead her to feel stressed.	**Answer:** • *Primary appraisal: evaluating that the flight will be a stressful event (as opposed to a benign or irrelevant event).* o Extra information not required for the first mark, but part of primary appraisal: *The flight will likely be a threat to Lily as she assesses the harm that may occur to her (such as the turbulence) when she takes the flight.* • *Secondary appraisal: Lily will assess the coping resources that she has, which may include problem-focused coping strategies (for example, by learning about the relative safety of flying) or emotion-focused coping strategies (for example, avoiding thoughts about being high in the air while she is flying).* • *If Lily's coping resources are inadequate, she will be stressed when taking the flight.* **Marking protocol:** One mark for each of the above points.

allostasis (stability through change brought about by the brain's regulation of the body's response to stress) as a model that integrates biological, psychological and social factors that explain an individual's response to stress	**Question 7c** (2 marks) Lily has worked with a Psychologist who seems to have reduced her fear of flying. Lily decides to take a flight to Sydney for a major business deal. As the flight takes off, Lily begins to panic. Unfortunately, she experiences several periods of turbulence on the flight, which results in her becoming very anxious. Is it likely that Lily would have an increased or decreased allostatic load on the flight? Justify your answer.	**Answer:** • *It is likely that Lily would have an increased allostatic load.* AND • *An increased allostatic load has occurred because Lily's anxiety has increased the demands on her allostatic systems.* OR • *Given that Lily is already distressed at flying, it is likely that her allostatic systems would be inefficient at turning on and off, leading to the cumulative negative effects of these allostatic changes.* OR • *An increased allostatic load has occurred because an increased intensity of the stressors associated with flying has led to increased demand on her allostatic systems.* **Marking protocol:** One mark for each of the above points.

allostasis (stability through change brought about by the brain's regulation of the body's response to stress) as a model that integrates biological, psychological and social factors that explain an individual's response to stress	**Question 7d** (1 mark) How could we know if Lily is experiencing allostatic overload?	**Answer:** • *We could know if Lily is experiencing allostatic overload if Lily's experience of flying and her fear leads to a serious health problem.* • *We could know if Lily is experiencing allostatic overload if Lily was unable to cope with her body's stress response.* **Marking protocol:** One mark for either of the above points.

allostasis (stability through change brought about by the brain's regulation of the body's response to stress) as a model that integrates biological, psychological and social factors that explain an individual's response to stress *roles of the central nervous system, peripheral nervous system (somatic and autonomic), and autonomic nervous system (sympathetic and parasympathetic)*	**Question 7e** (3 marks) Lily is relieved and feels calm when she walks into Sydney airport. Now that she is on the ground, her body will move into a state of _____, which is maintained by the _____ division of the _____ nervous system, which is part of the peripheral nervous system.	**Answer:** • homeostasis • parasympathetic • autonomic **Marking protocol:** One mark for each of the above points, in order.

social, cultural and environmental factors that exacerbate and alleviate the stress response *strategies for coping with stress including biofeedback, meditation/relaxation, physical exercise, social support*	**Question 7f** (1 mark) Describe a social factor that may alleviate Lily's stress.	**Answer:** • Having friends/family/colleagues accompany Lily on flights could help take her mind off being in the air and provide her with emotional support. • A psychologist could help Lily reappraise flying as a non-threatening event. • An aviation expert may provide information support to assure Lily that she is in no danger when turbulence occurs, supported with statistics on aviation safety. **Marking protocol:** One mark for any of the above points, or any other relevant alleviating social factor.

Use the following information to answer Question 8.

Rhonda is unable to speak meaningfully and Charlotte is unable to speak fluently.

studies of aphasia including Broca's aphasia and Wernicke's aphasia	**Question 8a** (1 mark) What is aphasia?	**Answer:** • *Aphasia refers to a language impairment.* **Marking protocol:** One mark for the above point.

studies of aphasia including Broca's aphasia and Wernicke's aphasia	**Question 8b** (2 marks) What kind of aphasia is Rhonda likely to have? Describe a cognitive symptom (other than being unable to speak meaningfully) that Rhonda may have, that distinguishes her condition from Charlotte.	**Answer:** • *Rhonda is likely to have Wernicke's aphasia.* • *One other cognitive symptom of Wernicke's aphasia that Rhonda may have is the inability to understand language.* Another possible cognitive symptom of Wernicke's aphasia: • *One other cognitive symptom of Wernicke's aphasia that Rhonda may have is the lack of awareness of her language difficulties.* **Marking protocol:** One mark for identifying that Rhonda is likely to have Wernicke's aphasia and a further mark for a distinguishing cognitive symptom of this aphasia.

studies of aphasia including Broca's aphasia and Wernicke's aphasia	**Question 8c** (2 marks) What kind of aphasia is Charlotte likely to have? Describe a cognitive symptom (other than being unable to retrieve the articulation codes for language) that Charlotte may have, that distinguishes her condition from Rhonda.	**Answer:** • *Charlotte is likely to have Broca's aphasia.* • *One other cognitive symptom of Broca's aphasia that Charlotte may have is the inability to understand complex sentences that depend on grammatical words.* **Marking protocol:** One mark for identifying that Charlotte is likely to have Broca's aphasia, and a further mark for a distinguishing cognitive symptom of this aphasia. Note: it could be argued that another cognitive symptom of Broca's aphasia that Charlotte may have is 'the awareness of her language difficulties', but arguably this is only applicable in a direct comparison against Wernicke's aphasia. This is because the same logic could apply to 'Charlotte's ability to count', or any other cognitive ability, as another possible cognitive symptom that she may have.

Use the following information to answer Question 9.

Bec is having her sleep monitored in a sleep laboratory. She has electrodes placed over her jaw muscles and near her eyes.

measurement of physiological responses including electroencephalograph (EEG), electromyograph (EMG), electro-oculargraph (EOG), heart rate, body temperature and galvanic skin response (GSR)	**Question 9a** (2 marks) Which device is likely to be placed over her jaw muscles, and what does this device measure?	**Answer:** • *An electromyograph (EMG)* • *An EMG detects, amplifies and records electrical activity of the muscles.* **Marking protocol:** One mark for each of the above points.

measurement of physiological responses including electroencephalograph (EEG), electromyograph (EMG), electro-oculargraph (EOG), heart rate, body temperature and galvanic skin response (GSR)	**Question 9b** (2 marks) Which device is likely to be placed near her eyes, and what does this device measure?	**Answer:** • *An electro-oculargraph (EOG)* • *An EOG detects, amplifies and records electrical activity of the muscles that move the eye.* **Marking protocol:** One mark for each of the above points.

sleep as an altered state of consciousness: purpose of sleep, characteristics and patterns of the stages of sleep including rapid eye movement (REM) and the non-rapid eye movement (NREM) stages of sleep	**Question 9c** (1 mark) What stage of sleep would the device outlined in 9b be best at identifying?	**Answer:** • *Rapid eye movement (REM) sleep, as compared to non-rapid eye movement (NREM) sleep.* **Marking protocol:** One mark for the above point.

the use of sleep laboratories, video monitoring and self-reports	**Question 9d** (1 mark) Describe one limitation for using a sleep laboratory to study sleep.	**Answer:** • *The unusual environment can be challenging for people to sleep normally.* • *The polysomnography devices (EEG, EOG, EMG) may be uncomfortable for people to sleep with.* • *The participant may feel self-conscious knowing that others are monitoring them as they sleep.* • *The participant's sleep may be intentionally interrupted for the purposes of studying sleep patterns.* **Marking protocol:** One mark for any of the above points, or for any other relevant limitation.

Use the following information to answer Question 10.

Linda is 7 years old, and is learning Indonesian as a second language at school.

developmental plasticity and adaptive plasticity of the brain: changes to the brain in response to learning and experience; timing of experiences	**Question 10a** (2 marks) With reference to developmental and adaptive plasticity, why would it be easier for her to learn Indonesian as a second language at her age, compared to when she is 50 years old?	**Answer:** • *Linda is able to learn Indonesian with the use of developmental plasticity (and her sensitive period for spoken language acquisition), which she will not have at the age of 50.* • *Linda's adaptive plasticity decreases as she ages, which would reduce her ability to learn.* **Marking protocol:** One mark for each of the above points.

the development of neural pathways including the role of axons, dendrites, synapses and neurotransmitters	**Question 10b** (2 marks) The more that Linda rehearses Indonesian vocabulary, the more the activated neuronal connections are strengthened. Describe two of the changes that would occur in order to strengthen these neural connections.	**Answer:** • *An increase in the amount of neurotransmitter (such as glutamate and dopamine) being sent from the pre-synaptic neuron to the post-synaptic neuron would occur, enhancing the efficiency of neurotransmission.* • *The growth of dendritic spines would occur, strengthening the connection between the pre-synaptic and post-synaptic neuron.* • *The growth of axon terminals would occur, strengthening the connection between the pre-synaptic and post-synaptic neuron.* • *Synaptogenesis (new synaptic connections) may occur with other neurons, allowing for more efficient neurotransmission.* **Marking protocol:** One mark for any of the above points, to a maximum of two. Note: these changes could be collectively described as Long Term Potentiation (LTP).

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement	**Question 10c** (3 marks) Linda receives praise from her Indonesian teacher every time she studies in the library, which leads her to study there often. Linda is always spotted in the library each time she goes to study, because her Indonesian teacher also runs the library. Describe how the three phase model of operant conditioning could be applied to this scenario.	**Answer:** • *Antecedent/discriminative stimulus: the library* • *Behaviour/response: studying in the library* • *Consequence/environmental stimulus: praise (positive reinforcement)* **Marking protocol:** One mark for each of the above points.

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement	**Question 10d** (2 marks) Which schedule of reinforcement is her Indonesian teacher applying to Linda, and why might the teacher do this?	**Answer:** • *A continuous schedule of reinforcement.* • *A continuous schedule of reinforcement incentivises Linda to rapidly acquire the target behaviour of studying, compared to a partial schedule of reinforcement.* **Marking protocol:** One mark for each of the above points.

three-phase model of operant conditioning as informed by B.F. Skinner: positive and negative reinforcement, response cost, punishment and schedules of reinforcement	**Question 10e** (1 mark) Linda's Indonesian teacher falls ill and is unable to praise Linda each time she studies in the library. Explain why Linda's behaviour is likely to be extinguished.	**Answer:** • *Linda is no longer receiving reinforcement.* • *A continuous schedule of reinforcement is most prone to extinction compared to other schedules of reinforcement, particularly when the consequence is no longer provided.* **Marking protocol:** One mark for either of the above points.

SECTION C – Research scenario

Dr Waters has spent many years formulating a new pill that she believes enhances memory. To test this, she randomly sampled 50 participants from a population of VCE Psychology students at Uptown High School, then randomly allocated them into two groups. Dr Waters also used a single-blind procedure to ensure that participants did not know which group they had been allocated to.

Group 1 consumed the 'memory pill' one hour before undertaking a memory test, whereas Group 2 consumed a sugar pill one hour before undertaking the same memory test. The memory test involved participants memorising a list of 20 unrelated words for two minutes, then recalling them in any order immediately afterwards. The alpha level, or significance level, was set at $p \leq 0.05$.

The results were summarised in the table below.

	Group 1	Group 2
Mean words correctly recalled out of 20	13.5	9.8
Median words correctly recalled out of 20	13.5	12

Dr Waters found a p value of p = 0.09 from her data.

Experimental research: construction of research hypotheses; identification and operationalisation of independent and dependent variables; identification of extraneous and potential confounding variables including individual participant differences, non-standardised instructions and procedures, order effects, experimenter effect, placebo effects; ways of minimising confounding and extraneous variables including type of sampling procedures, type of experiment, counterbalancing, single and double blind procedures, placebos, standardised instructions and procedures; evaluation of different types of experimental research designs including independent-groups, matched-participants, repeated-measures; reporting conventions as per American Psychological Association (APA) format

Question 1 (4 marks)
Describe how a placebo differs from the placebo effect, using examples from Dr Waters' experiment.

Answer:

- *A placebo refers to an inactive substance that is used as a substitute for the actual treatment, whereas the placebo effect refers to any changes in behaviour that the participants may exhibit due to their expectations of a certain treatment.*
- *In Dr Waters' experiment, the placebo is the sugar pill that is given to Group 2, whereas the placebo effect is the change in behaviour that either Group 1 or 2 participants may exhibit due to their belief that they have received either the memory pill or the sugar pill.*

Marking protocol:
Two marks for each of the above points.

sampling procedures in selection and allocation of participants: random sampling; stratified sampling; random-stratified sampling; convenience sampling; random allocation of participants to groups; control and experimental groups *ethical principles and professional conduct: the role of the experimenter; protection and security of participants' rights; confidentiality; voluntary participation; withdrawal rights; informed consent procedures; use of deception in research; debriefing.*	**Question 2** (1 mark) What is one ethical challenge that Dr Waters may face in getting a truly random sample?	**Answer:** • *Random sampling assumes that all participants within a population of research interest are willing to take part in a study; otherwise, this would breach the principle of voluntary participation as it means that participants are being coerced into taking part in the study.* *(However, as soon as participants have a choice to participate [either before they have been randomly selected or afterwards], this creates a biased sample.)* **Marking protocol:** One mark for the above point.

Experimental research: construction of research hypotheses; identification and operationalisation of independent and dependent variables; identification of extraneous and potential confounding variables including individual participant differences, non-standardised instructions and procedures, order effects, experimenter effect, placebo effects; ways of minimising confounding and extraneous variables including type of sampling procedures, type of experiment, counterbalancing, single and double blind procedures, placebos, standardised instructions and procedures; evaluation of different types of experimental research designs including independent-groups, matched-participants, repeated-measures; reporting conventions as per American Psychological Association (APA) format *statistics: measures of central tendency including mean, median and mode; interpretation of p-values and conclusions; evaluation of research in terms of generalising the findings to the population*	**Question 3** (10 marks) Write components of a research report for Dr Waters' experiment. You should include: • A research hypothesis and whether or not it was supported • An interpretation of the descriptive and inferential statistics in relation to the hypothesis • A discussion of limitations and suggestions for suitable improvements if the research were to be repeated.	**Answer:** An excellent response would: • Write a testable hypothesis which would include the IV, DV, population, direction (e.g. would recall more words than…) and control group. • Accurately describe and interpret the statistics provided in the scenario in relation to the hypothesis. • Outline the effects of any potential extraneous variables on the DV and provide suitable suggestions for future research. • Use the reporting conventions of APA format. **Sample answer:** (note that answers will vary, and that 10 points are not necessary for 10 marks, as the question is marked holistically) • *The hypothesis that VCE Psychology students at Uptown High School who consumed the 'memory pill' would be more likely to correctly recall more words from a memory test compared to the students who consumed a placebo was not supported.* • *Dr Waters found a mean and median of 13.5 words out of 20 correctly recalled for the experimental group, and a mean of 9.8 and a median of 12 words out of 20 correctly recalled for the control group.* • *The lower mean compared to the median for the control group indicates that there were outliers in the dataset, possibly with one or more participants in Group 2 recalling far fewer words than the rest of the group. The large variability in this group makes it difficult to make conclusions.* • *Further, a p value of 0.09 means that the probability that the results were due to chance alone was 9 in 100. If the alpha (significance) level is set at $p \leq 0.05$, then the results are not statistically significant, and therefore, no conclusions can be drawn from the research.* • *Given the independent-groups design, individual participant differences, such as a better memory for words in some students, may have increased free recall, irrespective of the 'memory pill' or placebo. To control for memory ability in future, Dr Waters could employ a matched-participants design where participants undergo a memory pre-test and be evenly allocated to Group 1 or Group 2.* • *Another potential extraneous variable could have been experimenter effects, which refer to bias created through either the collection or interpretation of data by the experimenter, Dr Waters, particularly given that she likely has a vested interest in ensuring the memory pill's success. For example, Dr Waters may have inadvertently made the memory task easier to the experimental group by hinting that the use of a mnemonic might help to remember the words, and not giving the same treatment to the control group. To increase the reliability and validity of the data, it is suggested that Dr Waters uses a double-blind procedure by employing a research assistant that administers the pills without knowing which participants belonged to the experimental or control groups.*

VCE PSYCHOLOGY
Written Examination
ANSWER SHEET – 2015

STUDENT NAME:

Use a **PENCIL** for **ALL** entries. For each question, shade the box which indicates your answer.

Marks will **NOT** be deducted for incorrect answers.

NO MARK will be given if more than one answer is completed for any question.

If you make a mistake, **ERASE** the incorrect answer – **DO NOT** cross it out.

1	A	B	■	D	23	A	B	■	D	45	A	B	■	D
2	A	B	C	■	24	■	B	C	D	46	A	B	C	■
3	■	B	C	D	25	A	■	C	D	47	A	B	C	■
4	A	B	■	D	26	A	B	■	D	48	A	B	■	D
5	■	B	C	D	27	■	B	C	D	49	A	■	C	D
6	A	B	C	■	28	A	B	■	D	50	A	B	■	D
7	A	■	C	D	29	■	B	C	D	51	A	B	C	■
8	A	B	■	D	30	A	B	■	D	52	A	B	C	■
9	A	B	C	■	31	A	B	■	D	53	■	B	C	D
10	■	B	C	D	32	A	■	C	D	54	■	B	C	D
11	■	B	C	D	33	A	B	■	D	55	A	■	C	D
12	A	■	C	D	34	A	B	C	■	56	A	■	C	D
13	A	■	C	D	35	A	■	C	D	57	■	B	C	D
14	A	B	■	D	36	A	■	C	D	58	A	B	C	■
15	A	B	C	■	37	A	B	■	D	59	A	B	■	D
16	A	B	■	D	38	■	B	C	D	60	A	■	C	D
17	A	B	■	D	39	A	B	■	D	61	A	B	■	D
18	A	B	C	■	40	A	B	C	■	62	A	B	C	■
19	A	■	C	D	41	■	B	C	D	63	A	■	C	D
20	■	B	C	D	42	■	B	C	D	64	A	B	C	■
21	A	B	■	D	43	A	B	C	■	65	A	B	■	D
22	A	■	C	D	44	■	B	C	D					