

YEAR 12 *Trial Exam Paper*

2015

PSYCHOLOGY

Written examination

Sample responses

This book presents:

- high-level sample responses
- explanatory notes
- mark allocations
- tips

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SECTION A – Multiple-choice questions

Question 1

Answer is C

Explanatory notes

A is incorrect. Daydreaming is characterised by a shift in thoughts to private scenarios that limit awareness of the world around us.

B is incorrect. Selective attention is characterised by a focus on a single stimulus to the exclusion of others.

C is correct. Soraya is clearly in normal waking consciousness (NWC). Her attention shifts from her study to the bell and she thinks about what she now needs to do in this situation.

D is incorrect. The scenario does not describe the characteristics of an altered state.

Question 2

Answer is B

Explanatory notes

A is incorrect. Beta waves are likely to be prevalent in NWC or during REM sleep, which produces beta like waves.

B is correct. A typical brainwave pattern for a person who is daydreaming would be the brainwaves of an alpha state. This would be slower in frequency and slightly higher amplitude than beta, but not as slow or high as theta.

C is incorrect. Theta waves are most likely during the early stages of sleep.

D is incorrect. Delta waves are prevalent during non-REM (NREM) deep sleep.

Question 3

Answer is C

Explanatory notes

A is incorrect. Both context-dependent cues and state-dependent cues are equally effective in assisting us to recall information from long-term memory (LTM).

B is incorrect. Emotionally charged memories are easier to recall than memories formed in normal calm circumstances.

C is correct. Elaboration is more effective than maintenance rehearsal when learning new material.

D is incorrect. Chunking increases the capacity of short-term memory but not LTM.

Chunking does not improve retention in LTM.

Question 4

Answer is A

Explanatory notes

A is correct. Both ICD-10 and DSM-5 use descriptors that are grouped under several categories of mental illness.

B is incorrect. ICD-10 was initially used only for diagnosing physiological illness while the DSM-5 has always only been used for diagnosing psychological disorder.

C is incorrect. Neither DSM-5 nor ICD-10 identify causes of mental illness.

D is incorrect. Both DSM-5 and ICD-10 use subjective data – symptoms reported by the patient, so are reliable only to the extent that the patient reports all relevant information to the clinician.

Question 5

Answer is B

Explanatory notes

A is incorrect. The type of controlled observational studies conducted in a sleep clinic are usually reliable due to the nature of the measurements taken.

B is correct. The scenario clearly describes the patient in a highly distressed state, risking psychological harm if the study continued.

C is incorrect. While self-reported data may be rich in personal detail, it is subjective and not as reliable as a controlled sleep study for collecting data about sleep.

D is incorrect. Sleep studies provide the best data in the controlled environment of the laboratory. However, patients may be more relaxed in their home environment (no artificiality) making it easier for them to sleep.

Question 6

Answer is D

Explanatory notes

A is incorrect. The electroencephalograph detects, amplifies and records electrical activity of the brain.

B is incorrect. The electromyograph detects, amplifies and records electrical activity of the skeletal muscles.

C is incorrect. The electrocardiograph detects, amplifies and records electrical activity of the heart muscles and measures the number of times the heart beats per minute.

D is correct. The electro-oculograph detects, amplifies and records electrical activity of the muscles that move the eye.

Question 7

Answer is A

Explanatory notes

A is correct. Sleep studies have shown that a complete sleep cycle lasts on average 90 minutes. Because Margaret slept for two hours, she would most likely have experienced one cycle.

B is incorrect. See the explanation for A.

C and D are incorrect. It is most likely that Margaret would have been in the first third of her second sleep cycle if she awoke after two hours because each sleep cycle lasts on average 90 minutes.

Question 8

Answer is C

Explanatory notes

A is incorrect. Sawtooth waves are characteristic of REM sleep.

B is incorrect. Although K complexes are a feature of Stage 2 sleep, beta waves are characteristic of an alert state or REM sleep.

C is correct. Theta waves and sleep spindles are characteristics of Stage 2 sleep.

D is incorrect. Delta waves are characteristic of Stage 4 NREM sleep and do not feature sleep spindles.

Question 9

Answer is D

Explanatory notes

A is incorrect. Microsleeps occur when we are awake, not during a night's sleep.

B is incorrect. Following a period of sleep deprivation Margaret would be more likely to spend less time in NREM sleep than usual.

C is incorrect. During REM rebound dreams tend to be more intense than is usual.

D is correct. Following significant periods of sleep deprivation, Margaret would be inclined to experience REM rebound where she would spend a greater amount of time in REM than is usual.

Question 10

Answer is A

Explanatory notes

A is correct. A brain injury results in a physiological change to the brain so it is a biological factor and can be a risk factor for developing a mental illness.

B is incorrect. Personality is a psychological factor.

C and D are incorrect. Work stress and family dysfunction are both social factors.

Question 11*Answer is C***Explanatory notes**

A is incorrect. The hippocampus is a structure within the brain.

B is incorrect. The four lobes of the cerebral cortex are parts of the brain.

C is correct. The brain and the spinal cord are the primary structures of the central nervous system (CNS).

D is incorrect. The spinal cord is a primary structure but the hippocampus is a structure found within the brain.

Question 12*Answer is D***Explanatory notes**

A is incorrect. This is a general practice that is used in creating mnemonics to better encode the material to be learned. It is not specific to acrostics.

B is incorrect. This is an example of narrative chaining.

C is incorrect. This process describes creating an acronym.

D is correct. An acrostic is a mnemonic device in which a sentence is created where the first letter of each word is the same as the first letter of the words to be remembered (and in the sequence to be remembered).

Question 13*Answer is A***Explanatory notes**

A is correct. The association areas of the frontal lobes are the major structures used for higher-order thinking such as locating information stored in long-term memory and linking it with new information.

B is incorrect. The right parietal lobe would contribute to the task (e.g. in reading and writing) but would not be the most active structure.

C is incorrect. The primary auditory cortices are used to receive and process auditory information.

D is incorrect. Broca's area is primarily responsible for the coordination of the physical structures necessary for speech.

Question 14

Answer is D

Explanatory notes

A is incorrect. Although the consolidation process takes place within the temporal lobe, the specific structure that is most important in this process is the hippocampus.

B is incorrect. The amygdala is most important in the formation of emotional memories but not in consolidating declarative memories.

C is incorrect. The hypothalamus is active in triggering the fight-or-flight response (among other activities or responses) but not in the process of consolidation of explicit memories.

D is correct. The hippocampus is a structure within the temporal lobe that is most important in the consolidation phase of memory formation.

Question 15

Answer is C

Explanatory notes.

A is incorrect. Although this is a correct statement about learning, it does not use the terms of measures of retention, which are recall, recognition and relearning.

B is incorrect. The question refers to relearning rather than selecting correct information from among alternatives.

C is correct. Relearning is the most sensitive measure of retention so, when relearning, Kayla would locate the previously learned material more readily.

D is incorrect. Relearning does not require that the original order of learning be maintained, although serial recall can assist us to locate information previously learned if serial information is reviewed in order.

**Tip**

- *When the question uses the phrase 'in terms of', the specific language related to that topic must be used.*

Question 16

Answer is A

Explanatory notes

A is correct. During learning glutamate is released by the pre-synaptic neuron, which then stimulates the release of dopamine.

B, C and D are incorrect. See the explanation for A.

Question 17

Answer is B

Explanatory notes

A is incorrect. While imagining that she is at school may generate specific episodic memories, the best explanation is that the imagined context aids recall.

B is correct. The classroom acts as a context-dependent cue aiding recall.

C is incorrect. Kayla would need to imagine a feeling associated with the classroom to activate a state-dependent cue.

D is incorrect. Elaborative rehearsal involves linking new information to previously learned information.

Question 18

Answer is B

Explanatory notes

A is incorrect because the primary visual cortex is located in the occipital lobes and the primary auditory cortex is located in the temporal lobes.

B is correct. The frontal lobes contain the primary motor cortex and the visual cortex is in the occipital lobes.

C is incorrect. See the explanations for A and B.

D is incorrect. The somatosensory cortex is located in the parietal lobes.

Question 19

Answer is D

Explanatory notes

A is incorrect. The degree of brain shrinkage is a possible dependent variable for this study.

B is incorrect. The extent of abnormal connectivity would also be a possible dependent variable in this study.

C is incorrect. While older cannabis users may be likely to have used the drug for a longer time, this is not assured. An individual may take up cannabis use at an advanced age.

D is correct. The most obvious independent variable is the length of time that cannabis is used because the research question is: Does long-term cannabis use cause brain damage?

**Tip**

- *When assessing whether a variable is dependent or independent, it is useful to consider what end result is being measured, or what is the effect on the dependent variable. The dependent variable (DV) is likely to change as a result of the influence of the manipulation of the independent variable (IV). The IV is manipulated with the expectation that this manipulation will cause a measurable change (the effect) in the DV.*

Question 20

Answer is C

Explanatory notes

A and B are incorrect because the important aspect of this study is the length of time that cannabis is used, not the age of the user. While older users are likely to have used the drug for longer, this is not assured. They may have taken it up at a later age than another user. C is correct. The study is examining the effect of cannabis use, so the non-cannabis user is a useful comparison.

D is incorrect. The term 'drugs' is not defined. This could be anything from aspirin to cocaine. It is too vague and likely to be impossible to measure.

**Tip**

- *The control group is used as a comparison. The data gained from this group provides the baseline against which the experimental group can be measured. So the control group needs to have no link to the independent variable.*

Question 21

Answer is B

Explanatory notes

A is incorrect. Brain plasticity is too general a term because the question asked for the *best* explanation.

B is correct. The brain has formed new neural connections in adulthood to adapt to the damage caused by the drug use. Adaptive plasticity is a form of brain plasticity. So while brain plasticity is correct, adaptive plasticity is a better response and, in this case, the *only* correct response.

C is incorrect. Developmental plasticity is confined to the very young.

D is incorrect. Proliferation occurs in utero when the foetus's cells are dividing.

**Tip**

- *If the question asks for the best answer, there is likely to be another, less complete, correct response. The best answer is the most correct answer.*

Question 22

Answer is A

Explanatory notes

A is correct. The frontal lobes are responsible for planning, judgement, problem solving and decision-making.

B is incorrect. The parietal lobes are most important in perception rather than higher order thinking.

C is incorrect. The primary motor cortex is responsible for motor movement rather than higher order thinking.

D is incorrect. The primary auditory cortex is responsible for the processing of auditory information.

Question 23

Answer is C

Explanatory notes

A is incorrect. Retroactive interference occurs when newly learned material blocks the retrieval of previously learned material.

B is incorrect. Retrograde amnesia refers to difficulty in recalling previously stored memories.

C is correct. Anterograde amnesia refers to difficulty in encoding and storing new memories.

D is incorrect. Proactive interference occurs when previously learned material blocks the retrieval of newly learned material.

Question 24

Answer is A

Explanatory notes

A is correct. Damage to the temporal lobe and hippocampus is often related to anterograde amnesia, as the hippocampus is important in the consolidation of new memories.

B is incorrect. The amygdala is most important in the formation of emotional memories, and in activating the hippocampus.

C and D are incorrect. The lobe most commonly associated with anterograde amnesia is the temporal lobe, not the frontal.

Question 25

Answer is B

Explanatory notes

A is incorrect. The scenario doesn't suggest that Andrew was paying attention to multiple stimuli when riding.

B is correct. It is likely that the accident interrupted the consolidation of memories that were forming just before the accident.

C is incorrect. While retrieval failure could be argued, the question asks for the *best* explanation. Consolidation theory is a better response.

D is incorrect. While the trauma of the accident could have created a motivation to repress the memory, this is not alluded to in the question. So again, consolidation theory is a better response.

Question 26

Answer is B

Explanatory notes

A is incorrect. Damage to the right frontal lobe would perhaps result in difficulty moving the left side of the body.

B is correct. Spatial awareness is an important function of the parietal lobes. Loss of the ability to perceive three-dimensional shapes and a tendency to ignore objects in the left visual field (spatial neglect syndrome) result from damage to the right parietal lobe.

C is incorrect. Damage to the left temporal lobe may result in Wernicke's aphasia.

D is incorrect. Damage to the left occipital lobe would likely result in difficulties with perceiving and processing images from the right visual field.

Question 27

Answer is C

Explanatory notes

A is incorrect. The neighbouring pre-synaptic neurons will stimulate increased firing.

B is incorrect. Dopamine excretion will be increased.

C is correct. New dendritic spines will change the structure of the dendrites and make their operation more efficient.

D is incorrect. There will be increased likelihood of firing when stimulated by neighbouring pre-synaptic neurons.

Question 28*Answer is C***Explanatory notes**

A is incorrect. Building the shelves is primarily a procedural memory, not a semantic memory.

B is incorrect. Episodic memories are of events in life and not of how to do things.

C is correct. Building the shelves is primarily a procedural memory, implicit and skill based. These memories are particularly resistant to decay.

D is incorrect. Declarative memory is a category under which episodic and semantic memories are studied. Some forms of dementia will result in loss of declarative memories in old age.

Question 29*Answer is A***Explanatory notes**

A is correct. Connor was motivated by the desire to learn to build his own furniture so he paid close attention to his grandfather's actions.

B is incorrect. Retention is the forming of a mental representation in memory of the observed behaviour. This is not described explicitly in the scenario.

C is incorrect. Reinforcement refers to the perception of a possible reward for performing the behaviour. There is no explicit reference to a reward in this scenario.

D is incorrect. Reproduction is the physical act of reproducing the observed behaviour. This is not referred to in the scenario.

Question 30*Answer is D***Explanatory notes**

A is incorrect. Negative reinforcement involves strengthening a response by removing a negative stimulus.

B is incorrect. Aversion therapy is a concept related to classical conditioning, not operant conditioning.

C is incorrect. Extinction occurs when a behaviour ceases following the removal of reinforcement.

D is correct. By being deprived of the opportunity to help his grandfather, Connor had something desirable removed. This is the cost of his response and is a form of punishment.

Question 31*Answer is C***Explanatory notes**

A is incorrect. Connor's appraisal was primary but he did not view the event as a challenge; he saw no opportunity in the event.

B is incorrect. This is a primary, not a secondary, appraisal.

C is correct. In Connor's initial response, he viewed the event as a threat. His immediate reaction (primary) was to see this as a permanent loss (threat).

D is incorrect. Connor felt upset and saw the situation as having a personally negative outcome to, so it was not benign.

Question 32*Answer is C***Explanatory notes**

A is incorrect. Spatial neglect is evidenced by a tendency to ignore objects primarily on the left side.

B is incorrect. Broca's aphasia is characterised by difficulty producing clear and fluent speech.

C is correct. One of the earliest indicators of Alzheimer's disease is loss of semantic memories.

D is incorrect. This term refers to the ability of an organism to perform certain behaviours only after attaining an appropriate level of maturation.

Question 33*Answer is D***Explanatory notes**

A is incorrect. The sympathetic nervous system stimulates the arousal, while the parasympathetic returns the body to a state of homeostasis.

B is incorrect. Cortisol stimulates an increase in glucose providing increased energy to deal with the threat.

C is incorrect. The response of the autonomic nervous system is unconscious and automatic.

D is correct. The increased heart and respiratory rates are the direct result of stimulation of receptors throughout the body due to the release of epinephrine and norepinephrine.

Question 34*Answer is B***Explanatory notes**

A is incorrect. The calming response is due to the parasympathetic nervous system.

B is correct. The parasympathetic nervous system calms the body when the perceived threat has passed. This returns the systems of the body to a state of equilibrium or homeostasis.

C is incorrect. This describes the initial response to the fright.

D is incorrect. The impact of the parasympathetic nervous system is physiological. Allostasis refers to the physiological and psychological effects on the person in response to the threat. The body changes to adapt to the perceived threat.

Question 35*Answer is A***Explanatory notes**

A is correct. Meditating is a way of bringing emotions under control by exerting a calming, mindful influence on the mind and body.

B is incorrect. This is an example of information seeking, a problem-focused strategy.

C is incorrect. Taking control of the situation is an example of problem-focused coping.

D is incorrect. Emotion-focused coping uses ways of easing the emotional distress related to a problem. Obsessing about the problem would have the opposite effect.

Question 36*Answer is B***Explanatory notes**

A is incorrect. Wernicke's area is in the temporal lobe. An important function of Wernicke's area is interpretation of the spoken word.

B is correct. Wernicke's area is responsible for interpreting the sounds of speech and is located adjacent to the primary auditory cortex in the temporal lobe.

C and D are incorrect. Broca's area is located in the frontal lobe and is responsible for the production, not interpretation, of speech.

Question 37*Answer is D***Explanatory notes**

A is incorrect. An experimental investigation involves using independent and dependent variables to test a hypothesis.

B is incorrect. An observational study involves observing participants and noting their behaviours.

C is incorrect. A longitudinal study involves measuring or recording information about participants over an extended period of time.

D is correct. Case studies involve the examination of individual cases to collect data.

Question 38

Answer is A

Explanatory notes

A is correct. Case studies rely on data collected from just one case. This can't be generalised to the wider population.

B is incorrect. No research relies on subjectivity. Case studies of this nature, i.e. post-mortem examinations, are very objective.

C is incorrect. This weakness applies mostly to self-completed questionnaires. As the participant in Broca's case was deceased, clearly there is no way that the participant can present itself in any particular way.

D is incorrect. Case studies do not use independent variables.

**Tip**

- *All research relies to a certain extent on the objectivity of the researcher, not the subjectivity. Experiments reduce the capacity for subjectivity and provided the results are collected, analysed and interpreted appropriately, objectivity is maintained.*

Question 39

Answer is C

Explanatory notes

A is incorrect. Trial and error learning is learning that results from repeated incorrect trials or responses before the correct response is discovered. The organism learns what not to do before learning what the correct response is to complete the task.

B is incorrect. Operant conditioning was the result of the work of B F Skinner and uses an operant (reinforcement) to change or teach a response (behaviour).

C is correct. Watson and Rayner introduced Little Albert to a neutral stimulus (white rat) and instilled a conditioned response (fear of the rat) by pairing it with an unconditioned stimulus (loud bang). This is classical conditioning.

D is incorrect. Observational learning was the work of A Bandura who formed a theory of the way we learn based on our ability to learn by watching or imitating others, and on our motivations and our exposure to role models.

Question 40

Answer is B

Explanatory notes

A is incorrect. The food was the unconditioned stimulus.

B is correct. The dogs naturally salivated when food was presented. The salivation didn't need to be learned or conditioned.

C is incorrect. Salivation was the response conditioned through pairing the bell with the food.

D is incorrect. The bell was a stimulus, not a response.

Question 41

Answer is A

Explanatory notes

A is correct. The dogs learned to associate the presence of the technician with food, so they salivated.

B is incorrect. The salivation was the conditioned response.

C is incorrect. Salivation to food was the unconditioned response.

D is incorrect. Food was the unconditioned stimulus.

Question 42

Answer is B

Explanatory notes

A is incorrect. Retroactive interference occurs when newly learned material interferes with the ability to recall previously learned material.

B is correct. When we are unable to recall specific information fully, but have some small piece of the information available to us, it is called tip-of-the-tongue phenomenon (TOT).

C is incorrect. Motivated forgetting occurs when we can't recall information because it has the potential to cause us distress.

D is incorrect. While TOT is a form of retrieval failure, B is a better response.

Question 43

Answer is C

Explanatory notes

A is incorrect. Ebbinghaus found that after the first 20 minutes about 40% of information was forgotten and this had increased to about 70% by the end of the first day.

B is incorrect. Ebbinghaus found that about 55% of information was forgotten within the first hour after learning, but the first 40% occurred within the first 20 minutes.

C is correct. Ebbinghaus found that about 40% of information was forgotten within the first 20 minutes after learning. This is the steepest part of the curve.

D is incorrect. Ebbinghaus found that after one week, an additional 5% to 10% of information was forgotten, as the curve flattened out.

Question 44

Answer is D

Explanatory notes

A is incorrect. A high temperature is likely to produce high perspiration, which will increase the electrical conductivity of the skin. However, the GSR does not measure temperature.

B is incorrect. See the explanation for A.

C is incorrect. The GSR measures the capacity of the skin to conduct electricity.

D is correct. Wet skin will increase electrical conductivity; therefore, the GSR will be higher.

Question 45*Answer is C***Explanatory notes**

A and B are incorrect. The drug treatment is biological but the counselling is psychological. C is correct. By prescribing drugs, the doctor is using a biological treatment. By providing counselling the psychologist is using a psychological support. D is incorrect. See the explanation for C.

Question 46*Answer is D***Explanatory notes**

A is incorrect. Flooding involves exposing the patient to the actual feared object all at once, not gradual exposure as described.

B is incorrect. Shaping is an operant conditioning technique where behaviour is encouraged by reinforcing gradual approximations of the behaviour, in a systematic way, until the organism has learned the complete set of behaviours.

C is incorrect. Aversion therapy aims to discourage behaviour by exposing the patient to negative consequences of that behaviour.

D is correct. Systematic desensitisation involves gradually exposing the patient to the feared stimulus while pairing the stimulus with relaxation.

Question 47*Answer is B***Explanatory notes**

A is incorrect. Operant conditioning relies on matching a response to a behaviour to either weaken or strengthen that behaviour.

B is correct. By pairing the relaxed state with the images of spiders and then actual spiders, the therapist is teaching Michael to associate relaxation with spiders.

C is incorrect. Observational learning requires the learner watching a model perform the desired behaviour.

D is incorrect. Modelling is another term for observational learning.

Question 48*Answer is B***Explanatory notes**

A is incorrect. Deni is likely to be sleep deprived.

B is correct. Deni should sleep between nine and ten hours per night so his sleep debt will be around 12 to 15 hours by the end of the school week.

C is incorrect. This is an unusually short sleep pattern.

D is incorrect. The normal range for a 17-year-old boy is nine to ten hours per night.

Question 49

Answer is C

Explanatory notes

A is incorrect. Echoic memories last longer in sensory memory than iconic.

B is incorrect. Short-term memory (STM) has a limited capacity of between five and nine pieces of information.

C is correct. STM is where information is manipulated. This requires drawing on new sensory experience as well as stored memories.

D is incorrect. The capacity of sensory memory is unlimited.

Question 50

Answer is A

Explanatory notes

A is correct. The primacy effect would be evident where the items in the beginning of the list would be transferred to long-term memory. (*Note: if he had taken less than 30 seconds to begin writing, the recency effect may be evident where some of the final items would be retained in short-term memory, but not as many items as from the start of the list.*)

B is incorrect. See the explanation for A.

C is incorrect. The items in the middle of the list would be least likely to be retained.

D is incorrect. See the explanations for A and C.

Question 51

Answer is C

Explanatory notes

A is incorrect. Trevor was using elaborative rehearsal and this is more effective than maintenance rehearsal when encoding new memories.

B is incorrect. Maintenance rehearsal is repeating the information over and over to keep it in short-term memory.

C is correct. When elaborative rehearsal is used, the information is organised more effectively in long-term memory, making recall easier.

D is incorrect. Iconic memory is sensory memory and has a very short retention time.

Question 52

Answer is C

Explanatory notes

A is incorrect. Objects flashed to the right visual field will be processed in the left hemisphere, so naming objects is possible.

B is incorrect. The severing of the corpus callosum will not affect speech production, which is a function of the left frontal lobe.

C is correct. The purpose of split-brain surgery is to reduce communication between the hemispheres.

D is incorrect. Split-brain surgery involves severing the corpus callosum and does not affect the hippocampus.

Question 53

Answer is A

Explanatory notes

A is correct. The research by R Sperry and M Gazzaniga found that the image flashed to the left visual field would be processed in the right hemisphere. The right hemisphere could identify the object by touch but not name it.

B is incorrect. The information would not pass from the right hemisphere to the left hemisphere, so could not be named. It could be identified by touch with the left hand.

C is incorrect. Objects processed in the right hemisphere could not be recognised if touched by the right hand due to the contralateral organisation of the primary motor cortices.

D is incorrect. As for C, the object could not be drawn by the right hand, but could be drawn by the left.

Question 54

Answer is D

Explanatory notes

A is incorrect. In classical conditioning the learner is passive, but in operant conditioning the learner is active.

B is incorrect. In classical conditioning the response is reflexive, but in operant conditioning it is a conscious choice.

C is incorrect. See the explanation for A.

D is correct. In classical conditioning the response can be extinguished if the unconditioned stimulus does not accompany the conditioned stimulus, and in operant conditioning the response may be extinguished when it is no longer reinforced.

Question 55

Answer is B

Explanatory notes

A is incorrect. This refers to the process leading to extinction in operant conditioning.

B is correct. If the conditioned response (CR) is not paired with the conditioned stimulus (CS) extinction can occur, but then the CR can be spontaneously elicited upon later pairing of the CR and CS following a rest period.

C is incorrect as the CS must come before the CR in classical conditioning.

D is incorrect. This refers to the process of observational learning.

Question 56*Answer is C***Explanatory notes**

A is incorrect. The response is reflexive and not learned.

B is incorrect. Reflexive responses are not learned, so they cannot be conditioned.

C is correct. The reflexive response (Palmer grasp) is an adaptive reflexive response linked to survival.

D is incorrect. A fixed action pattern is a complex set of instinctive behaviours demonstrated by some species when the appropriate environmental stimulus is presented. It is not a human behaviour.

Question 57*Answer is D***Explanatory notes**

A is incorrect. A case study involves studying an individual, not a group. The clinical interview described is a form of observational study.

B is incorrect. The design used involved independent groups, not repeated measures. The structured interview is a form of observational study.

C is incorrect. A matched-participants design relates to an experiment where participants are matched on a variable relevant to the study, and allocated in pairs to the control or experimental group. The use of a questionnaire is a form of self-report.

D is correct. The experimental design involved independent groups. The type of observational study described is a clinical interview. The questionnaire is a form of self-report.

Question 58*Answer is A***Explanatory notes**

A is correct. The mean is a descriptive statistic.

B is incorrect. The mean does not permit the researcher to infer from data; it only describes the data.

C and D are incorrect. Both of these types of data were collected but they are not statistics.

Question 59*Answer is B***Explanatory notes**

A is incorrect. The p value determines whether the difference in scores between the control group and the experimental group is due to the manipulation of the independent variable. The expectation clearly was that change would be due to the effects of counselling.

B is correct. By examining the p value, the experimenter can determine whether the change is due to chance or due to the manipulation of the independent variable. The p value of < 0.05 means that the results could be expected to be replicated in 95 per cent of trials, or that there is a less than five per cent probability that the result was due to chance factors only.

C is incorrect. Using the p value allows the researcher to determine whether the result is statistically significant. This will then allow the researcher to form a conclusion.

D is incorrect. See the explanation for B.

Question 60*Answer is D***Explanatory notes**

A is incorrect. There are no order effects in the independent-groups design so counterbalancing is not required.

B is incorrect. Matching participants is not done in the independent-groups design.

C is incorrect. In the scenario described, the participants will clearly know if they are being counselled or not so there is no risk of a placebo effect.

D is correct. Independent-groups design does not have procedures to control for participant-related extraneous variables so a larger group is needed to ensure a more even spread of these variables across the groups.

Question 61*Answer is B***Explanatory notes**

A is incorrect. Both girls will experience arousal of the autonomic nervous system.

B is correct. Both girls will experience arousal of the autonomic nervous system. Anna will experience eustress and Greta will experience distress.

C is incorrect. Only Greta will experience distress.

D is incorrect. Anna will experience eustress and Greta will experience distress.

Question 62

Answer is B

Explanatory notes

A is incorrect. The question asked for the *best* response. Greta's allostatic load had increased but B is a better response.

B is correct. The ongoing stress has lowered Greta's capacity to adapt to the relatively minor stressor of running out of petrol. The cumulative effect is allostatic overload.

C is incorrect. Greta's fight-flight response has repeatedly been activated because her sympathetic nervous system has responded to the stressors in the environment.

D is incorrect. Greta's body is not able to adapt at this point and is therefore not able to establish allostasis.

Question 63

Answer is C

Explanatory notes

A is incorrect. The semantic network theory suggests that the capacity of long-term memory is unlimited provided information is encoded well.

B is incorrect. The semantic network theory suggests that a particular cue will activate the related network of memories but not that memory will be inaccessible.

C is correct. The semantic network theory suggests that information is stored in nodes that are arranged hierarchically.

D is incorrect. The semantic network theory suggests that nodes are linked according to meaning but not that only semantic information is stored.

Question 64

Answer is A

Explanatory notes

A is correct. Liam made multiple attempts to complete an activity that had previously been unlearned. Each time he fell off (error), he tried again until he mastered the skill. This is the essential definition of trial and error learning.

B is incorrect. There is nothing in the scenario to suggest observation played an important part in Liam's learning.

C is incorrect. Operant conditioning plays a role in trial and error learning and Liam's gradual improvement would reinforce his desire to get back up. The best response is trial and error learning.

D is incorrect. Shaping involves reinforcing steps in a process to achieve a smooth operation of the entire process. This is not described here.

Question 65

Answer is D

Explanatory notes

A is incorrect. The sub-systems of the autonomic nervous system are responsible for visceral automatic functions, not voluntary muscle functions.

B is incorrect. The central nervous system is needed to coordinate muscle movement, but the autonomic nervous system is incorrect.

C is incorrect. The somatic nervous system is correct but the autonomic is not.

D is correct. The primary motor cortices in the frontal lobes of the brain, which is part of the central nervous system, will work with the somatic nervous system to coordinate all of the muscular movements described.

SECTION B – Short-answer questions

Question 1

Sample response

Hermione experienced distortions of cognitive awareness because the alcohol-induced state caused her memory processes to be disrupted.

Hermione also experienced a loss of self-control resulting in a failure to monitor her behaviour (or a tendency to behave in an uninhibited way) due to the alcohol-induced altered state of consciousness (ASC).

Mark allocation: 4 marks

- 1 mark for correctly identifying cognitive distortions
- 1 mark for explaining this in terms of disrupted memory processes due to the alcohol-induced ASC
- 1 mark for identifying a loss of self-control
- 1 mark for explaining this in terms of either the lack of behaviour monitoring or the loss of inhibition, both due to the alcohol-induced ASC



Tip

- *The response must clearly refer to the scenario described in the question. Answers that do not refer to the alcohol-induced ASC earn reduced marks.*

Question 2**Sample response****Adaptive**

Sleep depends on the need to find food so an animal that needs to graze sleeps for less time than an animal that can eat more in shorter time spans.

OR

If an animal is more vulnerable to predators, it is likely to sleep more in order to hide safely, usually in the daytime.

OR

Sleep conserves energy, so when food is scarce (e.g. in winter), an animal will hibernate to slow the metabolic rate.

Restorative

During sleep the body is repaired and replenished, preparing it for normal activity the next day (through the reduction of the neurotransmitter adenosine). *(Information in parentheses is not required for the mark.)*

OR

Sleep allows us to recover mentally, thus improving our mood and emotional control.

OR

Animals that have a higher metabolic rate e.g. mice, need longer recovery times than animals with a lower metabolic rate (e.g. horses) so they sleep longer. *(Examples of animals not required for the mark.)*

OR

Sleep activates growth hormones during infancy, childhood and adolescence, thereby allowing natural and healthy growth.

OR

Sleep increases the immune system function as it strengthens immune response to illness.

OR

Sleep allows memories to be transferred from short-term memory to long-term memory so they are better consolidated.

Mark allocation: 2 marks

- 1 mark for each correct response (2). Students must supply one response for both restorative and adaptive to earn both marks. Responses should be sufficient to show a good understanding of the point made.

Question 3a.**Sample response**

Dimensional approach.

Mark allocation: 1 mark

- 1 mark for correctly naming the dimensional approach. No other response is acceptable.

Question 3b.**Sample response**

- Patients must report their own symptoms, so if these are not fully described or not recognised by the patient, the psychologist may not have all relevant information necessary to help make an accurate diagnosis. (The response provided by the patient is subjective, not objective.)
- DSM-V is based on norms expected in the American culture and is not always applicable to other cultures.
- DSM-V is designed for the American private health insurance system to make diagnosis simpler, which may prevent recognition of symptoms due to a broader cause.

Mark allocation: 2 marks

- 2 marks for describing a criticism of the DSM-V system

Further answers include:

- The degree of overlap between symptoms of some disorders listed can make it difficult for a decision to be made with regard to a correct diagnosis of a disorder.
- It can lead to substantial loss of valuable clinical information when classifying into categories; the uniqueness of the patient can be overlooked.
- The use of ‘diagnostic labels’ can lead to a negative effect on a patient and they may experience stigmas attached to mental disorders.

Question 4

Sample response

Ethical consideration 1: Informed consent

Explanation: Watson did not ensure Little Albert's mother was fully informed about the experiment before getting her consent. Today, Watson would need to provide an outline of Albert's role in the experiment, explain any possible risks to Little Albert, describe Albert's and his mother's rights and have Little Albert's mother sign a consent form because Albert is a minor.

Ethical consideration 2: Debriefing

Explanation: Watson did not inform Albert's mother of the results and conclusions of the study, which would need to happen if the experiment was implemented today.

OR

The fear response would have to be extinguished today (if it had been inadvertently created) and any necessary follow-up treatment would need to be provided.

Mark allocation: 4 marks

- 1 mark for identifying informed consent
- 1 mark for explaining how informed consent is handled today
- 1 mark for identifying debriefing
- 1 mark for explaining how debriefing is handled today



Tips

- *Answers may also discuss the participant's rights, but not withdrawal rights because Little Albert's mother did freely withdraw him from the study, although clearly she did not take the results.*
- *A question like this should be answered with the most obvious response. The examiner is not looking for obscure responses; rather, straightforward evidence of knowledge and understanding. The most obvious responses are informed consent and debriefing.*

Question 5**Sample response**

The central executive will

- access the phone number and language needed to text via the episodic buffer, which will retrieve the information from long-term memory.
- form the messages using visual information from the visuo-spatial sketchpad to see the messages, and also when making the call (to see the numbers).
- encode the memory of the messages and phone call into long-term memory through the episodic buffer.
- decide when to switch from texting to a phone discussion, and decide what to say.
- hold the sound of Uma's speech in the phonological loop while it is processed as language.

Mark allocation: 6 marks

- 1 mark for stating that the central executive will access the information from long-term memory
- 1 mark for identifying the role of the episodic buffer in accessing the information
- 1 mark for stating that the central executive gets visual information via the visuo-spatial sketchpad
- 1 mark for stating that the memories will be encoded via the episodic buffer
- 1 mark for stating that the decision-making aspect will be a central executive function
- 1 mark for stating that the phonological loop will process the sounds

**Tip**

- *When a question provides a scenario, the answer must specifically relate to that scenario. Marks will be lost if a definition of the model or term referred to is given without reference to the scenario.*

Question 6a.**Sample response**

Using the process of shaping, Ingrid will provide positive reinforcement (reward) for each behaviour that approximates the actions she wants Java to perform.

She will reward Java initially when he successfully jumps through the hoop.

She will then encourage Java to jump over the garden bed after jumping through the hoop, and reinforce this complete action (positive reinforcement is given for both actions together – for jumping through the hoop and then over the garden bed).

She will do the same to add running around the tree and sitting at her feet – progressively reinforcing actions until she only reinforces the complete performance.

Mark allocation: 4 marks

- 1 mark for identifying shaping as the process to be used
- 1 mark for stating that positive reinforcement (consequence) is provided for each successive approximation of the complete behaviour
- 1 mark for explaining the gradual application of the successive approximations method
- 1 mark for stating that ultimately she will only reinforce the complete performance

Question 6b.**Sample response**

Encouraging the dog to perform the tricks (e.g. patting and praising the dog before beginning the shaping process.)

Mark allocation: 1 mark

- 1 mark for identifying the initial climate that is created (reward and encouragement)

**Tip**

- *When the question refers specifically to the language of a theory, the specific terms used in that theory must be applied, not general terms. For example, shaping the behaviour through reinforcement, not training through rewards.*

Question 7a.**Sample response**

- Short-term memory has a limited capacity of between five and nine bits or pieces of information.
- Short-term memory is only used as a temporary store, not a long-term store.

OR

- As new information enters, existing information is pushed out.
- Information can only be retained in short-term memory if continuously rehearsed.

Mark allocation: 2 marks

- 1 mark for explaining the limited duration
- 1 mark for explaining the limited capacity

Question 7b.**Sample response**

Chunking

Maintenance rehearsal

Mark allocation: 2 marks

- 1 mark for chunking
- 1 mark for maintenance rehearsal

**Tip**

- *Note the use of 'explain' in **part a.** versus 'identify' in **part b.** The first requires a complete response, providing a full explanation of the concept. The second requires just naming the concept being examined.*

Question 8**Sample response**

Possible responses are as follows.

Strength:

- It uses human subjects, not laboratory animals, in developing the model, making it more useful in human situations.
- It approaches stress from a cognitive perspective to analyse how people perceive and cope with stressors.
- It uses both mental processes and emotional responses to analyse how people perceive and cope with stressors.
- It focuses on psychological determinants (mental process and emotions).
- It stresses an active interaction between the individual and the environment.
- Reappraisal allows stressors and circumstances to change over time.

Weakness:

- The physiological elements of the stress response are emphasised less than psychological factors.
- It does not include cultural, social or environmental factors in analysing how people perceive stressors.
- Perception or appraisal of a stressor is difficult to test through experimental research.
- Primary and secondary appraisals can interact simultaneously.
- Not all factors that affect a stress response may be apparent.

Mark allocation: 2 marks

- 1 mark for any of the strengths described above
- 1 mark for any of the weaknesses described above

Question 9a.**Sample response**

Continuous reinforcement

Mark allocation: 1 mark

- 1 mark for identifying continuous reinforcement. No other term is acceptable.

Question 9b.**Sample response**

Customers could be expected to increase their visits to the store in the short term (within the three-month trial period).

The increase in visits to the store would not be likely to continue after the trial period because continuous reinforcement is not effective in maintaining behaviour change.

Mark allocation: 2 marks

- 1 mark for indicating the effect of the reinforcement during the trial period
- 1 mark for indicating that this change of behaviour is not likely to be permanent

Question 9c.**Sample response**

The buying behaviour prior to the trial created a baseline against which to compare the buying behaviour during the trial.

Mark allocation: 2 marks

- 2 marks for correctly explaining the control condition. If the answer does not clearly demonstrate the comparison between the two time periods, full marks cannot be awarded.

Question 10a.**Sample response**

The amygdala is responsible for the encoding and storage of memories that have a significant emotional (fearful) content, such as bullying.

OR

The amygdala will have been involved in the storage of this strong emotional memory, which is recalled each time Gavin sees a butterfly.

Mark allocation: 1 mark

- 1 mark for identifying the amygdala's role in forming memories with an emotional or fearful content

Question 10b.**Sample response**

Classical conditioning element	Stimulus / Response
Neutral stimulus	Butterflies
<i>Unconditioned stimulus</i>	Bullying incident
Unconditioned response	<i>Fear of bullying</i>
Conditioned response	<i>Fear of butterflies</i>
Conditioned stimulus	Butterflies

Mark allocation: 3 marks

- 1 mark for identifying the bullying incident is the unconditioned stimulus
- 1 mark for identifying that the fear of the bullying is the unconditioned response
- 1 mark for identifying that the fear of the butterflies is the conditioned response

Question 11a.**Sample response**

School environment

Mark allocation: 1 mark

- 1 mark for identifying a social factor

Question 11b.**Sample response**

If the school is supportive and accepting of new migrants, Suzette is more likely to develop psychological resilience because she will feel safe and secure in this environment.

Other social factors that can be identified and explained:

- the level of education Suzette achieves
- work options and the environment for her parents (probably not involving Suzette as she is 12 years old)
- availability and access to social supports such as medical facilities or welfare agencies
- socioeconomic factors such as income
- social norms or pressures in her immediate environment.

Mark allocation: 2 marks

- 2 marks for a sufficiently well-explained response showing how this can affect mental health

Question 12a.**Sample response**

The flight-flight response.

Mark allocation: 1 mark

- 1 mark for stating the fight-flight response

Question 12b.**Sample response**

The HPA axis is activated when the stressor of approaching the school is experienced. The hypothalamus will trigger the release of stress hormones from the pituitary gland and the adrenal glands.

Mark allocation: 3 marks

- 1 mark for stating that the HPA axis is activated upon exposure to the stressor
- 1 mark for stating that the release of stress hormones is triggered by the hypothalamus (H)
- 1 mark for identifying the role of the pituitary (P) and adrenal glands (A) in this process

Question 13a.**Sample response**

The variable on which the participants are matched will not affect the dependent variable because its effects will be the same in both the experimental group and control group.

Mark allocation: 1 mark

- 1 mark for identifying that the matching process will eliminate the effects of the matched-participant variable

Question 13b.**Sample response**

The double-blind procedure controls for both the experimenter effect and the placebo effect.

Mark allocation: 2 marks

- 1 mark for stating that the experimenter effect is controlled for
- 1 mark for stating that the placebo effect or participant expectations are controlled for

Question 14**Sample response**

The motor neurons devoted to leg and foot movement would have experienced circuit pruning as the unused cells died off.

The neurons used for language would have formed extra synaptic connections enlarging the area of the brain devoted to language acquisition and use.

Mark allocation: 3 marks

- 1 mark for circuit pruning of motor neurons designed for leg and foot movement
- 1 mark for stating that extra connections would have been formed for language
- 1 mark for stating that this would result in an enlarged language area

Question 15**Sample response**

- Suppression involves a conscious choice to forget (or refusal to access) a memory that is available but causes psychological discomfort.
- Repression is an unconscious form of forgetting where painful memories become inaccessible.

Mark allocation: 4 marks

- 1 mark for stating that suppression is a conscious choice to forget an uncomfortable memory
- 1 mark for stating that the memory is available if the person chooses to recall it
- 1 mark for stating that repression is an unconscious form of forgetting an uncomfortable (painful) memory
- 1 mark for stating that the memory is inaccessible

**Tips**

- *For such questions it is essential to address both terms. For example, it would not be enough to say that suppression is a conscious decision; the fact that repression is not must also be stated.*

Question 16**Sample responses**

- The somatosensory cortices are located to the front of the parietal lobes (adjacent to the primary motor cortices).
- (Organisation is contralateral.)
- The area of the somatosensory cortex responsible for receiving and responding to sensory information from the left side of the body is located in the right parietal lobe, and the area responsible for receiving and responding to sensory information from the right side of the body is located in the left parietal lobe.
- Different parts of the body are controlled by corresponding areas of the somatosensory cortex
- More sensitive body areas have a larger proportion of somatosensory cortex devoted to them than less sensitive parts of the body.

(Information in parentheses is not essential.)

Mark allocation: 4 marks

- 1 mark each for any 4 of the sample responses to a total of 4 marks

SECTION C – Research scenario

Question 1

Sample response

It was hypothesised that people diagnosed as being in the early stages of Alzheimer's disease who take 100 mg of aspirin daily (for a period of six months) will experience a slower rate of the progression of the disease symptoms than Alzheimer's sufferers who do not take aspirin.

Mark allocation: 3 marks

- 1 mark for identifying the population (people suffering from Alzheimer's)
- 1 mark for identifying the independent variable (use of aspirin) and the dependent variable (rate of progression of symptoms)
- 1 mark for predicting the expected change in the rate of progression of symptoms

Question 2

Sample response

Convenience sampling. (Opportunity sampling is acceptable.)

Mark allocation: 1 mark

- 1 mark for convenience sampling

Question 3

Sample response

Patients experienced a decrease in their symptoms (a change in their behaviour) due to their expectations that the drug (placebo) would improve their symptoms.

Mark allocation: 1 mark

- 1 mark for explaining that the placebo effect occurs when expectations bring about a change in the dependent variable (DV).

Question 4

Sample response

The hypothesis that people diagnosed in the early stages of Alzheimer's disease who take 100 mg of aspirin daily (for a period of six months) will experience a slower rate of the progression of the disease symptoms than Alzheimer's sufferers who do not take aspirin has been rejected because the results obtained were not statistically significant at the probability level of 0.01 set by the researcher. The p value of 0.04 shows that there is a four per cent probability that the difference between the two groups are due to chance and that there is a 96 per cent probability that the results are due to the aspirin. The four per cent probability that the results are due to chance is higher than the one per cent or lower required to support the hypothesis.

There were various problems with this study that could account for the result.

- Dr Henley used convenience sampling, which would produce a non-representative sample of the population; therefore, the results could not be generalised to the population. By approaching just 50 of his own patients, the sample may have been biased because not all members of the population (all Alzheimer's patients) had an equal chance of being selected for the sample.
- It would have been better if Dr Henley had used random sampling to obtain his sample group. As the population was 'Alzheimer's patients' Dr Henley would need to make sure that all patients within the population have an equal chance of being selected so recruiting would need to cover places such as: GP practices, hospitals and specialist clinics.
 - To ensure the sample is randomly selected, the names of all patients in the identified population would be included in a sampling process, such as drawing names out of a hat, or assigning each patient a number and using a random number selection process to select the sample. This would ensure that every member of the population had an equal chance of being selected for the sample.
- The nature of the disease could have created a range of sampling problems for Dr Henley as the patients approached may have had difficulty fully understanding the research due to memory loss and general cognitive decline typical of Alzheimer's patients.

There were also multiple possible factors that could have created extraneous variables, confounding the experiment.

These included:

- The health of the participants – the rate of progression of the disease for each patient would be an important factor with advanced symptoms making it more difficult for patients to uniformly take the aspirin each day.
- Other medications taken by the participants – some medications affect cognitive processing, which may have confounded the result.

Possible solutions:

- Carers could be given the responsibility for administering the correct dose.
- Uniformity in medications across the sample could be required.

- Participants could have been screened/tested for general health and wellbeing as part of the sampling process (e.g. using a matched-participants design rather than independent groups).

Other possible problems:

- If the cognitive testing focused on all forms of memory the result would be less clear.
- Short-term memory loss experienced by Alzheimer's patients may make cognitive testing less reliable.
- The dietary habits of the participants may have affected their cognitive performance.

Possible solutions:

- The cognitive testing could focus solely on declarative memory rather than all forms of memory: the result may be clearer.
- Patients could have been given a uniform diet throughout the trial to overcome dietary habits.

In summary, the study needed to be designed to address all participant-related variables specific to patients in the early stages of Alzheimer's. The degenerative nature of the disease would make long-term testing difficult and variability between the extents of cognitive deterioration between patients would make comparisons difficult.

A matched-participants design that controlled for the many possible participant-related extraneous variables would have been better than an independent-groups design.

Mark allocation: 10 marks

Marks should be awarded for a combination of some of the above points to a total of 10 marks. However, students are required to demonstrate critical analysis in their responses, referring directly to the research scenario, and explaining how this relates to the disease and the experimental design. Marks should be awarded for the strength of the evaluation of issues and the extent to which the proposed solutions demonstrate an understanding of Alzheimer's disease. Students must address all dot points in the question to achieve a score above 6 marks.

Teachers should take into consideration the assessment criteria shown below:

- identify and describe the key terms/theories/issues
- explain the relevant terms/theories/issues and make connections between psychological concepts/theories and data and research
- use appropriate examples/evidence/data to support the response
- interpret and analyse the issues/data/information
- evaluate issues/data/information and draw appropriate conclusions.

END OF SAMPLE RESPONSES