

PSYCHOLOGY

Unit 4 - Written examination 2



2009 Trial Examination

SOLUTIONS

Section A – Multiple-choice

AREA OF STUDY 1 – MEMORY

Question 1

Answer: A

Explanation:

Research has shown that recognition is a more sensitive measure of retention than recall.

Recall – retrieving information from LTM using no cues or limited cues.

Recognition – identifying the correct information amongst alternatives.

Relearning or savings – involves relearning information previously learned.

These are listed in order of effectiveness with relearned information being the most likely to be recalled and straight recall being the least.

Question 2

Answer: B

Explanation:

The auditory information that our senses first receive is stored initially in sensory memory. This is the entry area of memory where sensory stimuli (whether they are attended to or not) are retained in their original sensory form for a very brief time – up to four seconds.

Question 3

Answer: D

Explanation:

Consolidation theory proposes that it takes approximately 30 minutes for information to be transferred from STM to consolidate into LTM as physical changes in brain cells occur. Interruption during this consolidation phase means that memories are not properly set and are unstable. This explains why Chris cannot remember anything about the soccer match.

Question 4

Answer: B

Explanation:

A person is consciously aware of a memory when it is in their short-term memory.

Question 5

Answer: B

Explanation:

Explicit memory involves either semantic or episodic memory. Explicit memories are also known as declarative memories.

Question 6

Answer: C

Explanation:

The subsystem of working memory which allows us to retain visual information for a short period of time is known as the visuospatial sketchpad.

Question 7

Answer: D

Explanation:

According to Baddeley's model of working memory storage of auditory information is a function of the phonological loop and the processing of complex information is a function of the central executive.

Question 8

Answer: C

Explanation:

Information in LTM is organised systematically in the form of overlapping networks or grids containing concepts and units of information. This is known as the semantic network theory.

Question 9

Answer: A

Explanation:

The process of passing information from long-term memory to short-term memory is known as retrieval.

Question 10

Answer: A

Explanation:

Elaborative rehearsal is the process of linking new information in a meaningful way with information already stored in memory or with other new information to increase the level of retention.

Question 11

Answer: A

Explanation:

Forgetting due to organic causes is known as organic amnesia. Amnesia is a term for the partial/total loss of memory. Brain damage is a form of organic amnesia.

Question 12

Answer: C

Explanation:

Proactive interference refers to forgetting that occurs when information learned previously interferes with the ability to remember new information.

Question 13

Answer: C

Explanation:

When people are presented with approximately 15 words in a short time of 30 seconds and then asked to use free recall (words can be recalled in any order), typically items at the beginning and end of a list are more likely to be remembered than information in the middle. This phenomenon is referred to as the serial position effect.

Question 14

Answer: C

Explanation:

Autobiographical events are retained in the episodic memory store. This includes memories of specific events, life experiences, and the time and place of events.

Question 15

Answer: A

Explanation:

If a period of time has elapsed before recall takes place (approximately 30 seconds), the primacy effect tends to be more apparent than the recency effect as the items heard first have more of an opportunity to be rehearsed and the items at the end of the list have fallen out of STM due to its limited capacity.

Question 16

Answer: D

Explanation:

When people are presented with approximately 15 words and then asked to use free recall (words can be recalled in any order) immediately after, typically items at the beginning and end of a list are more likely to be remembered than items in the middle of the list.

Question 17

Answer: C

Explanation:

Anterograde amnesia is loss of memory for events after the injury. Memories relating to the period before the injury are retained but the individual loses the ability to create new memories.

Question 18

Answer: B

Explanation:

The example of Brooke's grandmother demonstrates an expected effect of ageing on memory where semantic memories are more likely to decline rather than procedural memories.

Question 19

Answer: B

Explanation:

Brooke's grandmother's memory decline is most likely a result of slowing of the central nervous system.

Question 20

Answer: C

Explanation:

As Brooke's grandmother ages further she is unlikely to experience large memory losses as she is in a healthy state.

Question 21

Answer: A

Explanation:

Context-dependent cues are environmental cues relating to the particular context the information was originally learned in. Information learned in a particular place will be more readily retrieved in that same place.

Question 22

Answer: D

Explanation:

$p < 0.01$ indicates a significant result, as the p value is less than the commonly accepted 0.05.

AREA OF STUDY 2 – LEARNING

Question 23

Answer: B

Explanation:

Fixed action patterns are the identical response patterns of the members of a species to some environmental stimuli, for example, nesting behaviour of birds, migration patterns of salmon. They are also known as species specific behaviours.

Question 24

Answer: D

Explanation:

Maturation is the ordered change of the nervous system and of bodily structures as part of development. A child learning to crawl is one such example.

Question 25

Answer: D

Explanation:

Learning involves behaviour that results from experience.

Question 26

Answer: C

Explanation:

Flinching before a balloon bursts demonstrates the understanding that it will soon burst and make a loud noise which shows previous experience in a similar situation, or learning.

Question 27

Answer: A

Explanation:

In classical conditioning, an organism develops an association between the unconditioned stimulus and the conditioned stimulus.

Question 28

Answer: A

Explanation:

Before learning, an unconditioned stimulus elicits an unconditioned response.

Question 29

Answer: B

Explanation:

In classical conditioning the reappearance of a conditioned response after a period of extinction is known as spontaneous recovery.

Question 30

Answer: C

Explanation:

Michelle is able to discriminate between her mother being in a good and bad mood, and therefore is able to choose the best time to increase her chances of a favourable outcome.

Question 31

Answer: C

Explanation:

The conditioned response is the learned response. The dog has learned that once he hears the can opener he will soon be getting fed.

Question 32

Answer: A

Explanation:

The can opener is the conditioned stimulus as the dog has associated the sound of the can opener with the food that will soon appear.

Question 33

Answer: C

Explanation:

In Pavlov's experiment on salivation in dogs, the unconditioned response was salivation and the conditioned stimulus was the bell.

Question 34

Answer: D

Explanation:

In Thorndike's original experiments, the behaviour of an animal when first placed in the puzzle box was random until, after a number of trials, the cat learnt to escape more quickly from the box.

Question 35

Answer: D

Explanation:

Continuous reinforcement results in the fastest acquisition of behaviour.

Question 36

Answer: D

Explanation:

Continuous reinforcement results in the fastest extinction of behaviour.

Question 37

Answer: A

Explanation:

Fixed interval schedule of reinforcement results in a moderate response rate that is often erratic.

Question 38

Answer: B

Explanation:

Classical conditioning differs from operant conditioning in that the response in operant conditioning is voluntary, whereas the response in classical conditioning is involuntary or reflexive.

Question 39

Answer: B

Explanation:

Behaviour which is learnt through classical conditioning rather than through operant conditioning is more likely to be passive.

Question 40

Answer: B

Explanation:

Both classical and operant conditioning can occur vicariously, that is, through observing the experience of another rather than through one's own direct experience.

Question 41

Answer: D

Explanation:

Observational learning is defined as the observation of behaviour of a model and its consequences to guide one's own behaviour. This is also known as modelling.

Question 42

Answer: B

Explanation:

Bandura's BoBo doll experiments found that children were more likely to imitate the aggressive behaviour of the observed model if they were positively reinforced, even if originally the model was punished.

Question 43

Answer: D

Explanation:

Learning set is the improvement in learning ability due to prior experience in a similar learning situation caused by the positive transfer of information from the earlier to the later experience.

Question 44

Answer: D

Explanation:

Krystal's ability at basketball, having played netball for ten years, is a positive transfer of skills due to her learning set of basketball skills.

Section B – Short answer questions

AREA OF STUDY 1 – Memory

Question 1

Encoding – information is converted into a useable form that allows it to be stored in memory. To encode information we can make it more meaningful; associate it with existing memories; use imagery; or attach some sort of personal reference to it.

Retrieval – information is located and taken out of storage (LTM) when needed and into our conscious awareness. We often use cues to aid the retrieval of stored memories.

2 marks

Question 2

The capacity of sensory memory is unlimited.

The duration of sensory memory is 0.2 – 4 seconds.

The capacity of short-term memory is 7 ± 2 (5-9) items.

The duration of short-term memory is 18-30 seconds.

The capacity of long-term memory is unlimited.

The duration of long-term memory is unlimited.

3 marks

Question 3

$$\text{Savings} = \frac{(\text{Original learning time}) - (\text{Relearning time})}{\text{Original learning time}} \times \frac{100}{1}$$

or:

$$\frac{(\text{No. of trials for original learning}) - (\text{No. of trials for relearning})}{\text{No. of trials for original learning}} \times \frac{100}{1}$$

1 mark

Question 4

The more organised the information being presented, the better the likelihood of recall. A retrieval cue activates stored memories and other stored memories that they are linked to, and those are then activated. When concepts are further apart in the network the association is weaker and recall will take longer.

1 mark

Question 5

Ebbinghaus generated data and plotted a graph showing the pattern of forgetting that occurs over time. This graphs the rate of forgetting and shows how quickly we forget new information and the amount of forgetting over time.

1 mark

Question 6

Narrative chaining is the process of linking unrelated items together in a meaningful sequence or story (narrative). For example, to recall a shopping list you could place the items into a story such as the bread ran away with the milk to live in a house made of glad wrap. Material which is required to be recalled in order is most suitable for this technique.

3 marks

Question 7

Retrieval failure or retrieval cue failure is when forgetting occurs because we fail to use the right cues to retrieve memories.

The decay theory is based on the assumption that a chemical trace of each memory is formed in the brain every time a new memory is formed. These memory traces may gradually fade or disintegrate as time passes due to disuse, hence the information is forgotten.

2 marks

AREA OF STUDY 2- Learning

Question 8

Reflex actions are an automatic reaction to a particular stimulus, especially in survival situations. An example is the reflex of babies to grip in the first few months of life, or an adult pulling his/her hand away from a burning pan.

2 marks

Question 9

Unconditioned stimulus – bee sting

Unconditioned response – feeling itchy and vomiting

Conditioned stimulus – any flying insect

Conditioned response – feeling itchy and nauseous

4 marks

Question 10

Confidentiality - specific information regarding Little Albert is widely available.

Debriefing - Little Albert did not undergo any procedures to remove the negative effects of the study.

Informed consent - Little Albert's mother was not fully informed of the procedures of the study on her child.

2 marks

Question 11

Negative reinforcement is the removal of a negative consequence which strengthens the behaviour or increases the frequency of the behaviour reoccurring. An example is stopping an annoying electric pulse when a lever is pushed, which will increase the likelihood of that behaviour reoccurring. Taking pain relief to alleviate pain is also an example.

2 marks

Question 12

Attention – Daniel should actively watch Simon while he is explaining and demonstrating how to kick a football.

Retention – Daniel must remember the actions Simon performed.

Reproduction – Daniel must have the ability and skills to be able to kick a football.

Motivation – Daniel must want to kick a football. Simon should encourage Daniel to kick the football.

Reinforcement – Daniel must receive positive reinforcement for trying and/or succeeding to kick a football.

4 marks

AREA OF STUDY 3 – Research Investigation

Question 13

VCE students at Lake View Secondary College who complete a test of recall of thirty nouns after drinking 200 ml of strong coffee will score higher than when they complete a test of recall of thirty nouns without drinking any coffee.

An operational hypothesis must include a statement of population, IV and operationalised DV. In this case it must also demonstrate understanding that the same students were used in control and experimental groups.

2 marks

Question 14

The type of sampling used was stratified random sampling.

1 mark

Question 15

a. Cameron used a repeated measures design.

1 mark

b. One advantage of a repeated measures design is that it minimises the possible effects of individual participant variables, eg. IQ.

1 mark

c.

Disadvantages of a repeated measures design include order effects, learning effects or boredom effects. This means that participants may perform better or be hindered by completing the task on the second occasion, due to learning, boredom or fatigue. This will impact on interpreting the effect of the independent variable on the dependent variable.

1 mark

d. The disadvantages of a repeated measures design can be overcome by counterbalancing, where half the group undertakes the control condition first, followed by the experimental condition, and the other half of the group undertakes the experimental condition first, followed by the control condition.

1 mark

Question 16

Independent variable – drinking 200 ml of coffee or not.

Dependent variable – score on test of recall of 30 nouns.

2 mark

Question 17

No. The results of this study are not statistically significant as the p value is greater than the identified 0.05 level, as indicated by $p \geq 0.05$.

1 mark

Question 18

No. The results were not statistically significant therefore no generalisations can be made about the population.

2 marks

Question 19

Any four of the following:

- interpretation and explanation of results.
- state if the hypothesis was supported or not.
- state how this research relates to previous research.
- identify any extraneous and/or confounding variables and describe their possible impact on the results.
- state how this study could have been improved.
- make suggestions for possible future research.

4 marks

Question 20

Roles and responsibilities of the researcher – the welfare of the subjects is to be the primary concern, and they are not to be placed at risk in any way.

Participants' rights - the study should do no physiological or psychological harm to participants.

Confidentiality – the researcher must not disclose information that may identify the participants.

Voluntary participation – participants must take part under their own free will with no duress applied.

Informed consent – participants must be fully informed of the nature and purpose of the research, particularly in respect of the procedures that are involved. Because in Cameron's study they are under 18, they must have a parent's consent to participate.

Withdrawal rights – participants must be informed of their right to leave the research at any stage before experimentation commences.

Debriefing - where deception has been necessary to safeguard the integrity of the research the participants must be fully debriefed at the conclusion. The researcher must provide the participants with a full explanation of the research, its purpose and any conclusions that are reached, at the end of the research. Debriefing should also occur when no deception has been used to safeguard the integrity of the participants.

3 marks