Neap:

Trial Examination 2010

VCE Psychology Unit 4

Written Examination

Suggested Solutions

SECTION A: MULTIPLE-CHOICE QUESTIONS

1	**A**	B	C	D
2	A	**B**	C	D
3	A	**B**	C	D
4	A	**B**	C	D
5	A	B	**C**	D
6	**A**	B	C	D
7	A	B	C	**D**
8	A	B	C	**D**
9	A	B	**C**	D
10	A	B	C	**D**
11	A	B	C	**D**
12	A	**B**	C	D
13	A	B	**C**	D
14	A	B	C	**D**
15	A	B	**C**	D

16	A	B	C	**D**
17	A	**B**	C	D
18	A	B	**C**	D
19	A	**B**	C	D
20	A	B	**C**	D
21	A	B	**C**	D
22	A	**B**	C	D
23	A	B	**C**	D
24	**A**	B	C	D
25	**A**	B	C	D
26	A	B	**C**	D
27	A	B	C	**D**
28	**A**	B	C	D
29	A	**B**	C	D
30	**A**	B	C	D

31	A	B	**C**	D
32	A	**B**	C	D
33	A	B	C	**D**
34	A	B	**C**	D
35	A	**B**	C	D
36	A	B	**C**	D
37	**A**	B	C	D
38	A	B	C	**D**
39	A	B	C	**D**
40	A	B	**C**	D
41	A	B	C	**D**
42	A	B	**C**	D
43	A	B	C	**D**
44	A	B	C	**D**

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SECTION A – Multiple-choice questions

Question 1

As an active information processing system, memory receives, organises, stores and retrieves information received through the senses.

Question 2 B

The measure of retention used in a multiple-choice test is recognition because the answer to the question is provided, it just needed to be identified (or recognised) amongst the distracters.

Question 3 B

Rehearsal of information occurs in the short-term memory once it has been received by the sensory memory. Maintenance rehearsal is the repetition of material and is effective in extending the duration of short-term memory, whereas elaborative rehearsal is effective in storing long-term memory.

Question 4 B

The short-term memory has a capacity of 7 ± 2 items of information and a duration of up to 20 seconds.

Question 5 C

Shaye is using the technique known as maintenance rehearsal by repeating the shopping list over and over again. By doing so, she is retaining the information in her short-term memory.

Question 6 A

Information stored in the long-term memory is typically stored in terms of its meaning. This is the basis of the semantic network theory, where pieces of information are linked according to their common meanings.

Question 7 D

Procedural memory would be used when describing how to change a car tyre as it involves remembering how to perform a certain skill or behaviour.

Question 8 D

According to the primacy effect, when recalling this list of flowers, Suzanne will most likely remember the tulips because they are at the beginning of the list, possibly due to the fact that they had more attention and rehearsal time to reach the long-term memory, and also because they suffer less proactive interference.

Question 9 C

The central executive component of working memory suppresses irrelevant thoughts from our conscious awareness.

Question 10 D

According to the forgetting curve proposed by Ebbinghaus, Kevin is likely to forget nearly 60% of the information studied within one hour. Ebbinghaus found that only 45% of learned material is retained after one hour, so about 55% is forgotten.

Question 11 D

The pattern of forgetting demonstrated in the forgetting curve can be curbed if the information is meaningful, it is encoded thoroughly at the time of learning and the learning occurs over extended periods of time.

Question 12 B

This Tip of the Tongue phenomenon is explained as part of the retrieval failure theory, that is the information has been stored, but cannot be retrieved at that moment.

Question 13 C

Retroactive interference occurs when new information learned (2010 World Cup teams) adversely affects the recall of old information learned (2006 World Cup teams).

Question 14 D

According to the decay theory of forgetting, Laura's problem is the result of the chemical memory trace fading over time through disuse. It is believed that failure to use information may lead to the erosion of the chemical trace that was formed when the information was first learned.

Question 15 C

According to the consolidation theory, it takes up to 30 minutes for neuronal changes in the brain to lay a physical trace of a new memory.

Question 16 D

A calculated p value of <0.05, means that there is less than 5% chance that the differences in results are due to chance. This indicates that the differences in groups' results were likely due to the effect of the independent variable, and the hypothesis should be accepted.

Question 17 B

Peter is suffering from retrograde amnesia as he is unable to recall the identity of his attacker seen before he was struck on the head.

Question 18 C

Ageing may have a negative impact on the functioning of the short-term memory, especially where such memories are involved in performing a complex task.

Question 19 B

Self-referencing, when new information is mentally related to personal experiences, is a technique that can be used to improve memory in the process of encoding information as it makes it more meaningful.

Question 20 C

Claire remembering why she went upstairs when she returns to the lounge room is a context dependent cue. As soon as she went back to the context where she first thought to get the magazine from upstairs, Claire remembered why she was going to her bedroom.

Question 21 C

Mnemonic devices are used to enhance memory of information stored in the long-term memory.

Question 22 B

Rebecca is using narrative chaining to remember her list of marketing terms as she is linking the terms into a story (or narrative).

Question 23 C

Learning is ongoing, can occur intentionally or unintentionally and can be modified.

Question 24 A

Zachary has learned to fear the snake, most likely due to past experiences, as opposed to Xander who is yet to experience snakes as a threat.

Question 25 A

Maturation occurs at predetermined times and is controlled by genetic inheritance, for example learning to crawl, stand and walk.

Question 26 C

Hillary's nausea on the Year 9 camp is a conditioned response to the sight of the conditioned stimulus (green water flask).

Question 27 D

Hillary's illness is a reflexive response to the unconditioned stimulus (UCS; contaminated water).

Question 28 A

The sight of the green flask is a conditioned stimulus which results in a conditioned response (nausea). This is due to the previous association of the UCS (unconditioned response; contaminated water) with the NS/CS (sight of green flask) and the illness caused by contaminated water, unconditioned response.

Question 29 B

The contaminated water naturally evokes illness which requires no prior learning.

Question 30 A

Raymon's phobia (fear of plane travel) is an example of a conditioned response that is a result of a mental association between an unconditioned stimulus (plane crash) and a previously neutral stimulus (thought of planes).

Question 31 C

For one-trial learning there is often a time lag between the presentation of the UCS and the resulting UCR, whereas in classical conditioning the UCR closely follows the UCS.

Question 32 B

Cujo has been instrumental in learning behaviour that results in a desirable outcome, that is escaping the backyard. So Cujo will repeat this behaviour.

Question 33 D

The lever was pressed to deliver food pellets (positive reinforcement) as well as to remove an aversive stimulus, that is an electric shock (negative reinforcement).

Question 34 C

Punishment is being used to decrease the targeted behaviour (disruptions during lesson time).

Question 35 B

Rafael is paid for every targeted response (continuous reinforcement); Roger is paid for the first correct response occurring after a fixed time period.

Question 36 C

Shaping is used for behaviour that has a low probability of occurring naturally, by rewarding the learner when their behaviour successively approximates the targeted behaviour.

Question 37 A

Skinner used a continuous reinforcement schedule during his initial experiments with rats, that is reinforcing every correct response resulting in a rapid acquisition of targeted behaviour (lever pressing).

Question 38 D

The dogs have learned to repeat behaviour (identifying the marijuana) based on the consequences (receiving positive reinforcement in the form of food). The dogs have learned that they will only be reinforced when they identify the original stimulus (marijuana). This is stimulus discrimination.

Question 39 D

The act of taking an ice bath has been strengthened in order to remove an aversive stimulus (sore hamstrings).

Question 40 C

Mr Xerdes has been able to apply previous learning to new learning, thus demonstrating learning set.

Question 41 D

For operant conditioning the response occurs before the stimulus, for example a driver speeds (response) then gets a fine (stimulus). Whereas in classical conditioning, the response always follows the stimulus, for example presentation of meat powder (stimulus) results in salivation (response).

Question 42 C

Donald has learned by observing another person (his brother Scott), noting the negative consequences (punishments) and then adapting his behaviour to avoid the negative outcome, and does not copy his brother's behaviour of skating at the ramp.

Question 43 D

In the bobo doll experiments, the group that observed the model being punished would often imitate the aggressive behaviour if they were offered a reward, that is the positive reinforcement overrode the threat of punishment.

Question 44 D

A negative transfer affects Jan's ability in learning how to learn (rather than perform), hence learning the skills required for squash has hindered Jan's ability to learn the skills required to play tennis.

SECTION B – Short-answer questions

Question 1

Encoding occurs when information received by the sensory memory in the raw state of sounds, images and feelings (touch) is converted into a code or format that can be stored in the long-term memory.

1 mark

Question 2

a. recall

b. Recall is considered less sensitive than relearning or recognition because it is not as accurate at assessing the amount of information stored in memory.

2 marks

Question 3

The difference between iconic and echoic memory is that echoic memory is auditory sensory memory or the memory of a sound; whereas iconic memory refers to visual sensory information or the memory of images.

Iconic memories are retained for approximately one third of a second, whereas echoic memories are stored for around 3 to 4 seconds.

2 marks

Question 4

Chunking is the process of grouping together separate pieces of information into a larger unit of information. It increases the capacity of the short-term memory by allowing it to store the several separate pieces of information as one single unit.

2 marks

Question 5

According to the semantic network theory, information is stored in the long-term memory in an organised manner according to its meaning. It is believed that within the long-term memory, there is a grid of overlapping concepts that are linked by meaningful connections. Each memory (concept) is stored as a node in this network.

2 marks

Question 6

Repression operates as a means of motivated forgetting when a person subconsciously blocks the memory of an experience from entering conscious awareness because of its painful nature.

Suppression operates as a means of motivated forgetting by blocking an unpleasant memory, but this is done so consciously and purposefully.

2 marks

Question 7

The three steps involved in using the method of loci to remember information are:

1. to learn a series of locations that occur naturally, such as landmarks along a major road;
2. to visualise items to be remembered in order of the list with one of the landmarks, in turn;
3. take a mental journey on the familiar journey, when each landmark is passed it will cue the associated items.

3 marks

Question 8

A fixed action pattern includes a complex series of responses, for example weaver birds tying a grass knot to hold their nest together. A relex is a simple response, for example an eye blinking in reponse to a puff of air.

A fixed action pattern is limited to all members of a species showing the same behaviour. A reflex is not limited to one species, with many species showing the response to the given stimulus.

2 marks

1 mark for each difference given between a reflex and a fixed action pattern

Question 9

Before consenting to Albert's participation, his parents should have been informed of

- purpose of the Watson's and Rayner's experiment – what the results will be used for;
- details of the processes involved in the study;
- the rights of Little Albert and his mother – withdrawal, confidentiality, debriefing, dangers etc.; and
- the potential risks involved for Little Albert.

2 marks

2 marks for any two of the above points

Question 10

a. Stimulus generalisation occurs when Mary-Lou experiences a similar response (anxiety) to a similar but different stimulus from the balance beam.

For example, Mary-Lou might become anxious when attempting a somersault on the floor, or when using other gymnastic apparatus such as the vault.

2 marks

1 mark for each point raised

b. Mary-Lou only produces anxiety (conditioned response) when exposed to the balance beam (conditioned stimulus) and not to similar stimuli such as the vault, floor exercises, diving board, etc.

1 mark

Question 11

- The cat, when placed in a puzzle box, exhibited trial and error behaviour when trying to escape from the box in order to obtain the food reward. Eventually the cat escaped by pressing a wooden lever. Thorndike noted that the cat began to cease the random behaviours, and increasingly press the lever to open the cage.
- The law of effect states that an organism is more likely to repeat behaviour that results in a positive outcome (escaping box and obtaining food reward) and is less likely to repeat behaviour that results in a negative outcome, that is repeating behaviour that keeps it in the puzzle box.

2 marks

1 mark for each point raised

Question 12

	Classical conditioning	**Operant Conditioning**
Nature of response	involuntary (reflexive)	Voluntary (usually) but can be both voluntary and involuntary.
Role of learner	passive	active

2 marks

Question 13

The second stage of observational learning is retention.

- Jan must be able to store/retain (step by step) her mother's behaviour.
- The more meaningful she can make the image, the more accurately Jan will be able to replicate the behaviour (erecting the Christmas tree).

2 marks
1 mark for identifying retention
1 mark for either of the dot points

Question 14

In this case, there has been a **negative transfer** of his learning.

Learning set can result in a negative transfer of training if the previously learned approach to solving a problem does not fit the new problem.

1 mark

Question 15

Independent variable: whether students use the online program for maths work or the workbook.

Dependent variable: numeracy ability as operationalised to score on the numeracy test.

2 marks
1 mark for Independent variable
1 mark for Dependent variable

Question 16

Grade 3 students from Box Hill South Primary School will show a greater improvement in their numeracy (as operationalised by their result on a numeracy post-test) as a result of three months use of a mathematics online program when compared to students who simply used a school workbook for three months.

2 marks
1 mark deduction for failure to identify any two of the following:
population (grade 3 students from BHSPS), independent variable, dependent variable, prediction

Question 17

An advantage of this study design is that it uses matched pairs.

This is advantageous because it minimises participant related variables, in this case, the original numeracy abilities of the participants was matched.

2 marks
1 mark for each point made

Question 18

No. A single blind procedure was not used in this experiment.

Participants were aware of which group they were placed in i.e. experimental group (online program) or control group (workbook group).

2 marks
1 mark for each point made

Question 19

a. Inferential statistic: *p* value (probability that results occurred due to chance) or students' *t* test
Descriptive statistic: mean

2 marks

b. They describe, summarise and organise data thus providing useful results (but cannot be used to make statistical conclusions).

1 mark

c. No. There was not a statistical difference between the two groups of students.

$p > 0.05$ thus the difference between the results of the two groups was statistically insignificant (more than 5% likelihood that the differences were due to chance).

2 marks
1 mark for each point made

d. The hypothesis of the experiment is not supported.
Observed differences are due to chance. The online program is no more effective than the use of the workbook.

1 mark
1 mark for either point made

Question 20

This is commonly known as withdrawal rights.

Participants have the right to withdraw their results at the conclusion of the study.

2 marks
1 mark for each point made

Question 21

An extraneous variable is any (other than the independent variable) that has an unwanted side effect on the dependent variable.

An example may include any outside help that the student may have received e.g. from parents, siblings or teachers.

If students were allowed to take the workbook home, this would be a very significant variable.

2 marks
1 mark for description
1 mark for any suitable example