

TRIALS FOR TEACHERS

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2007 **ASSESSMENT GUIDE**

VCE PSYCHOLOGY

UNIT 4

INSTRUCTIONS

Reading Time - 15 minutes

Writing time - 90 minutes

SECTION A

Memory – 22 Multiple Choice questions – 1 mark each

Learning - 22 Multiple Choice questions – 1 mark each

Answer the multiple choice questions on the answer sheet provided.

SECTION B

Memory - 6 Short answer questions – total 14 marks

Learning - 6 Short answer questions – total 14 marks

Research Methods - 5 Short answer questions – total 18 marks

Answer the short answer questions in this booklet.

IMPORTANT NOTES

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MULTIPLE CHOICE SECTION

Area of Study 1 - Memory

Question 1

In the *information processing* model of memory the three divisions, in order of initial processing, are considered to be

Answer: D. sensory memory – short-term memory – long-term memory

Question 2

Which of the following represents the relative sensitivity of these measures of retention

Answer: A. highest – relearning; lowest - free recall

Question 3

As they finished Year 12, Robbie and Jackie were trying to think of all the students who had been in their Home-Room class in Year 7. Between them they managed to remember 17 names, but they knew there had been 25 in the class. At last they found an old school magazine that listed all the students in alphabetical order, soon they had remembered all 25. The reason for they were able to remember all names in this way is because

Answer: B. free recall is less sensitive than recognition

Question 4

The duration of iconic sensory memory is considered to be approximately

Answer: D. 0.3 seconds

Question 5

Maintenance rehearsal is used to

Answer: A. retain material in sensory memory for an extended period of time

Question 6

“Chunking” can be used to

Answer: B. increase the capacity of short-term memory

Question 7

Working memory is similar to short-term memory but in addition to storage components it is considered to have a functional component called the

Answer: D. central executive

Question 8

Items are retained in short-term memory, if not rehearsed, for

Answer: C. 12 to 20 seconds

Question 9

Millie is doing the crossword in the daily paper. Which component of her working memory is retrieving words from long-term memory to match the clues given?

Answer: D. central executive

Question 10

Todd is going to his High-School reunion after ten years. He finds an old class photograph and tries to name all his fellow students from their pictures. There is one girl whose name he is sure he knows, and he thinks her name starts with “S” but he just can’t remember.

Todd’s retrieval failure for the name would be referred to as

Answer: D. cue-dependent forgetting

Question 11

Retro-active interference refers to

Answer: D. inability to recall material learned at an earlier stage due to later learned material causing problems with the retrieval process

Question 12

Ebbinghaus found that he forgot over 60% of his learned lists in the first hour after learning. This is a greater rate of forgetting than we usually find with people of average memory ability. This is likely to be because

Answer: B. Ebbinghaus could not link the items in his lists into his semantic networks

Question 13

People with anterograde amnesia can usually remember events and facts for about 20 to 30 minutes but then lose the items from memory. This means that anterograde amnesia is usually caused by

Answer: C. consolidation failure

Question 14

If a healthy elderly person is tested for their memory ability, which measure of retention is likely to show no decline in ability from when they were in middle adulthood?

Answer: D. recognition

Questions 15 and 16 refer to the following information

In the Wechsler Memory Scale (Word-lists sub-test) the examiner reads aloud a list of 12 words at one-second intervals.

Phase 1: the patient is asked to recall these words, in any order, as soon as the last word has been read.

Phase 2: 30 minutes later, without the list being read again the patient is once more asked to recall words from the list, in any order.

Question 15

Taking the average from hundreds of patients; in Phase 1 it would most likely be found that

Answer: B. words from the middle of the list would be recalled less often than others

Question 16

Taking the average from hundreds of patients; in Phase 2 it would most likely be found that

Answer: C. words at the beginning of the list would be recalled more often than others

Question 17

Xiao is preparing a study timetable for his examinations, he is studying Legal Studies and Economics which he feels are similar to each other in processes and content. His study program will be most effective if he

Answer: D. made sure that he studies a different subject such as Physics in between Economics and Legal Studies

Question 18

Hudson is sitting his VCE Psychology examination and a question asks about the work of E.L. Thorndike. Hudson knows he has learned this but he can't recall what Thorndike did. Remembering what his teacher had advised him to do, he deliberately imagines himself sitting at his desk in his bedroom, reading his Psychology notes, soon the "Law of effect" comes to his mind.

The most likely reason for this is

Answer: C. context-dependent cues assisted his recall

Questions 19, 20, 21 and 22 refer to the information below

In Unit 4 Psychology, a teacher is researching whether the length of time between two learning episodes influences interference. A large group of volunteer subjects are randomly allocated into Group A, Group B or Group C.

Next all students are asked to learn all the capital cities of countries in Europe and are tested until they score 100%.

After 2 minutes, Group A is asked to learn the capital cities of the 50 States of the USA. Group B is asked to return in one hour's time and are asked to learn the capital cities of the 50 States of the USA.

Group C is not given a second learning task.

At 10.00 am. the next morning, all subjects are tested again, with the following results:

Group A – mean correct: 28 out of 50

Group B – mean correct: 39 out of 50

Group C – mean correct: 40 out of 50

Question 19

The experiment described above is a(n) _____ design involving both _____ and _____ groups

Answer: C. independent groups; control and experimental

Question 20

A t-test is performed on the data and it is found that the probability of the difference in the mean scores for Groups A and C occurring by chance alone is $p = 0.04$.

The teacher can conclude that

Answer: B. the hypothesis has been supported

Question 21

In this research, which of the following statements is true?

Answer: B. groups A and B are experimental groups

Question 22

The purpose of using a large sample and randomly allocating to groups A, B and C is to

Answer: A. eliminate possible effects of participant variables on the value of the dependent variable

Area of Study 2 - Learning

Question 23

The funnel-web spider spins a very distinctive web shaped like a long tube. Any mammal will blink if a puff of air is blown in the animal's eye.

The spider making this web is referred to as a _____ whilst blinking because of the puff of air is a _____

Answer: C. fixed action pattern; reflexive response

Question 24

Most children are "toilet-trained" when they are about two years old. This control of natural functioning is an example of

Answer: D. behaviour due to maturation

Question 25

Which of the following is true of learning

Answer: B. the learning must result from experience

Question 26

The form of learning in which the learner is passive is

Answer: A. classical conditioning

Question 27

After classical conditioning an organism may show a response to a stimulus that is similar, but not identical, to the conditioned stimulus. This is an example of

Answer: B. stimulus generalisation

Questions 28 and 29 refer to the following event

Amelia is two years old and her mother takes her to the health centre for an injection; Amelia is very happy until the nurse in the white coat sticks the needle in her arm. The same thing happens again when she goes for the booster two months later.

Amelia's parents have noticed that Amelia now cries whenever anybody in a white coat comes near to her.

Question 28

In terms of classical conditioning, Amelia's emotional reaction was

Answer: D. a conditioned response to a person in a white coat

Question 29

The fact that the response occurs for all people in white coats – not just nurses - suggests that this is a form of

Answer: B. stimulus generalisation

Question 30

Jack's dog barks loudly at people who ride past on bikes. Jack yells at the dog whenever it barks and the barking becomes less frequent and eventually stops even without Jack yelling. After the dog has been in boarding kennels whilst Jack takes a trip to the snow, Jack notices that the barking has started again.

Which of the following processes have occurred

Answer: A. extinction followed by spontaneous recovery

Question 31

One-trial learning through taste aversion has some similarities to classical conditioning. Which of the following statements describes a difference between the two?

Answer: C. in classical conditioning the stimulus and response occur very close together in time but in one-trial learning there is a long time-delay between the two

Question 32

Thorndike identified the cat trying to escape from the puzzle-box by making many different movements as being

Answer: A. trial and error

Question 33

Thorndike identified the cat having learned that one of its actions caused it to be released from the puzzle-box as

Answer: C. instrumental learning

Question 34

Operant Conditioning can be described as

Answer: C. a form of learning in which behaviour becomes controlled by its consequences

Question 35

A major benefit of the invention of the "Skinner Box" was

Answer: B. large amounts of precise data could be recorded automatically

Question 36

Which of the following reinforcement schedules will most likely lead to an erratic rate of responding?

Answer: C. fixed interval schedule

Question 37

There is no record of whether John B. Watson had obtained permission from Albert B's mother to use the baby for his conditioning experiment. If he had done so, then

Answer: D. all of the above are true

Question 38

Which of the following is a valid distinction between classical conditioning and operant conditioning?

Answer: D. in classical conditioning the reinforcer is the stimulus (UCS) which precedes the response; in operant conditioning the reinforcer is the consequence which follows the response

Question 39

In both operant and classical conditioning, the following elements may occur

Answer: B. extinction and spontaneous recovery

Question 40

Which of the following represent some of the stages in observational learning listed in the correct sequence

Answer: A. attention; reproduction; motivation

Question 41

In Bandura's experiments, children watched adults interact with a rubber doll "Bo-Bo the Clown". Which of these findings is **not** consistent with Bandura's observations?

Answer: B. children tended **not to be** aggressive towards the clown if they had seen the model punished for the aggression – even if the children were offered rewards for aggression

Question 42

Bandura referred to his theory of observational learning as "Social Learning Theory".

This is so because children

Answer: C. develop social skills mainly by observing adults

Question 43

Learning through "Modelling" can often be latent (the learning has occurred but the behaviour has not yet been shown). This learning can also be termed "vicarious". Vicarious learning means that

Answer: B. the children learned by watching the results of behaviours for other people

Question 44

Julia is a State representative in netball. Her friends persuade her to play a game of basketball for their club team. To begin with she is often robbed of the ball because she stops as soon as it is passed to her but after a while the coach tells her to go up and stand under the basket, she finishes with a match-winning 16 points.

What has probably happened here is

Answer: A. negative transfer hinders her running with the ball but positive transfer of goal-shooting skills helps her learn to score baskets

SECTION B – SHORT ANSWER SECTION

Area of Study 1 - Memory

Question 1

Encoding refers to

(1 mark)

Answer: *Changing material into a form that fits in with our storage system in long-term memory*

1 mark: Both ideas – of changing the form of the information (processing) and of linking the material to current LTM are required.

Question 2

Julia is getting married and she wants to invite all her cousins to the ceremony; unfortunately she has many cousins and cannot remember all their names.

a. Suggest a way in which Julia might use *cued recall* to improve her memory? (1 mark)

Answer: *She could get a photograph of a family gathering and use the pictures of her cousins to stimulate the memory of the names.*

1 mark: Students demonstrate understanding that this was **cued recall** and devise an appropriate method of providing cues to assist memory.

b. How might *recognition* be used to help Julia? (1 mark)

Answer: *Julia might ask for a guest-list from the same family gathering and pick out the names of her cousins from the list.*

*N.B. This question is designed to emphasise that **cued recall** uses new clues to assist retrieval whilst **recognition** involves identifying the actual stimuli from amongst other items.*

1 mark: Students give an example of a strategy that would enable **recognition** to help her.

c. Julia and her fiancé Julian have been taking dancing lessons so that they can do the “Bridal Waltz” – what form of memory will they be using for this? (1 mark)

Answer: *procedural (memory how to do something)*

1 mark Procedural – no other term is acceptable

Question 3

a. The duration of iconic sensory memory is considered to be _____ (1 mark)

Answer: *3 to 4 seconds*

1 mark: Any response between 2 and 5 seconds.

0 marks: Any other response **including** a response that **fails** to give the units as seconds.

b. The duration of short-term memory (without rehearsal) for the average adult is considered to be _____ (1 mark)

Answer: *12 to 18 seconds*

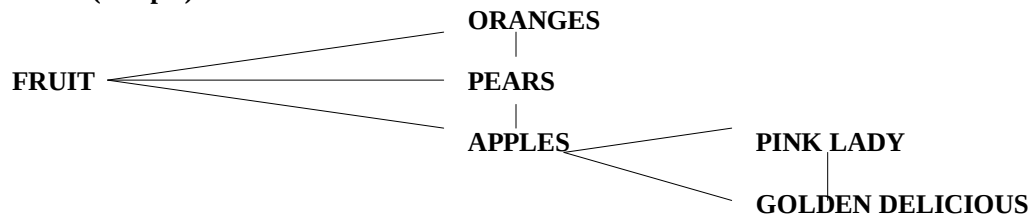
1 mark: Any response between 10.0 and 30.0 seconds.

0 marks: Any other response **including** a response that fails to give the units as seconds.

Question 4

Semantic network theory suggests certain characteristic ways in which material is stored in Long-Term Memory. Using the language of semantic network theory, use an example to show how “Pink Lady” (a type of apple) fits into your long-term memory. *You may use a diagram but should also explain the terms you use.* (3 marks)

Answer: (Sample)



The nodes (names of items) are grouped in a hierarchy- FRUIT - 3 types of fruit – APPLES – 2 types of apples. Nodes are joined by links – the shorter the link, the closer the relationship between the linked nodes (two types of apples).

3 Marks: A response that clearly shows links, nodes and a hierarchy (such as the “FRUIT” shown above.)

2 Marks: Two of the characteristics are shown

1 Mark: One characteristic is shown

Question 5

The commonly accepted model of working memory (Baddeley’s model) shows that it has three essential components, one of which is the phonological loop. Explain the function of each of the components of working memory. (3 marks)

Answer: *Phonological loop (articulatory rehearsal loop) – storage of items from auditory input
Visuo-spatial sketchpad – storage of items input by vision
Central executive – organization and integration of items in working memory and linkage with long-term memory.*

Marking protocol: **1 mark** is awarded for correct naming and description of the function of each part of working memory.

Question 6

Use an example to show how memory may be enhanced by

- i. using the *narrative chaining* mnemonic (1 mark)

Answer: *when remembering eggs, bread and dog food in a shopping list make up the story that Evan egg and Mary milk were running to escape fro a can of dog-food that was rolling fast down the hill towards them. When at the store, recite the story to yourself to cue memory of the items.*

1 mark: Any response that shows verbalization of the items to be recalled and links these within a verbal narrative.

- ii. using *state-dependent cues* (1 mark)

Answer: *John is trying to remember the answers to the psychology exam and he is very anxious and agitated. At last he realizes that when he was studying he felt quite relaxed – he therefore deliberately slowed his breathing and felt himself relaxing – soon he was able to remember all the information he needed.*

1 mark. A response that shows that john should match his internal state to the state he was in when learning in order to cue retrieval.

Area of study 2 - Learning

Question 7

a. Give an example of a *fixed action pattern*. (2 marks)

Answer: *Mutton birds (short-tailed shearwaters) fly in to the south coast of Victoria on 24 September each year after flying from Alaska, navigating using star-patterns.*

2 marks: Any example that shows a response that is:

- § complex
- § species specific
- § response to environmental stimuli

1 mark: The example does not clearly show two of the three dot-points above

0 marks: The example given is a common reflex action only

b. What is it that distinguishes this behaviour from a *reflex action*? (1 mark)

Answer: *a reflex action is performed by members of many different species
a reflex action may be a very simple behaviour such as blinking*

1 mark: one of the above points is made

Question 8

Explain, using the language of classical conditioning, exactly how “Little Albert” was conditioned by John B. Watson to be frightened of a white rat. (3 marks)

Answer:

- § *The white rat is a neutral stimulus (NS) that at first gets Albert’s attention but produces no fear response*
- § *The loud noise is the unconditioned stimulus (UCS) that causes the unconditioned response (fear of the loud noise)*
- § *After several pairings in which the UCS and NS are presented together, the NS becomes the CS (white rat).*
- § *the presentation of the CS alone will now evoke the conditioned response – fear of the white rat*

3 marks: Students appropriately identify the role of the NS (may always be called the CS), the UCS, the UCR and the CS and CR.

2 marks: Students answer as above but fail to differentiate the UCR (fear of the loud noise) from the CR (fear of the white rat)

or

Students make one other error in response

1 mark: Students make two errors

0 marks: students make 3 or more errors

Question 9

What is meant by the term *operant conditioning*? (1 mark)

Answer: *A form of learning in which actions become controlled by their consequences*

1 mark: Any response showing the behaviour-response-behaviour connection.

N.B. Students should not say “a form of conditioning” as they are then answering only half the question

Question 10

a. Identify two similarities between *Positive Reinforcement* and *Negative Reinforcement*. (2 marks)

Answer:

- § *both strengthen a response (or make the occurrence of the response more likely)*
- § *both provide an improvement in the environment for the learner*

2 marks: Both of the above points are made

1 mark: Only one point is made

b. Which schedule of reinforcement conditions responses that are **most** resistant to extinction? (1 mark)

Answer: *Variable interval*

1 mark: The above term is used

Question 11

Using examples, explain the following processes involved in observational learning.

a. Attention

(1 mark)

Answer: *The learner actively watches the model perform the action*

1 mark: the student response indicates that the learner is watching the model and at least implies that the learner is active in the process.

b. Retention

(1 mark)

Answer: *The learner internalizes the information about the action – committing it to memory*

1 mark the response indicates that this is the stage at which the learning in terms of the link to memory is taking place.

Question 12 In *observational learning* there is a stage where learning has occurred, but the behaviour has not yet been shown.

i. Which of the four (or five) processes involved in observational learning must occur if the behaviour is to be shown? (1 mark)

Answer: *Motivation*

1 mark: Students indicate that motivation is the essential immediate precursor to the behaviour.

ii. Which of the four (or five) processes involved in observational learning must occur if the behaviour is to be shown more than once? (1 mark)

Answer: *Reinforcement*

1 mark: Students indicate that a positive outcome for the learner is necessary if the behaviour is to be repeated.

Area of Study 3 – Research Methods

All questions in this section refer to the description of research below. Answer these questions with reference to **this** research.

Professor Flowinghaus is investigating the effects of noise level on ability to recall lists of names. He uses 98 students (48 females, 50 males) from his first-year psychology course as participants and they receive 5% credit towards their course-work mark for taking part. All students are told the purpose of the research and are advised of what they will be doing in the research and their rights as participants. Students sign a document giving permission for their data to be used in the research.

On the day of the experiment, he tests the participants on their ability to learn a list of town names and scores these tests; he then pairs up students with equal scores and tosses a coin to decide which of each pair will be in Group “A” and which will be in Group “B”.

Participants in both groups then attempt to learn 40 botanical names of native Australian plants in 30 minutes; Group A in a room where the sound of earth moving machinery is played at 100 decibels (loud) and Group B in a room that has been soundproofed (quiet).

The following day all students are tested on their knowledge of the plant names and the results are as follows:

Group A average score 28/40; Group B average score 34/40

The professor performs a t-test on these results and finds that the difference is significant at a $p = .04$ level.

Question 13

Create an appropriate operational hypothesis for the study

(2 marks)

Answer: *That students of first-year psychology at university will perform worse in a learning task – operationalised as memory score on a 40 item test on Australian plant names 24 hours after learning - if the items were learned under noisy conditions than if the items were learned under quiet conditions.*

2 marks: Students identify:
the population:

University 1st year Psychology students

the I.V.:	Learning condition – noisy/quiet
the D.V.:	Learning ability
operationalisation:	Score on test of 40 Australian plant names

1 mark: Students correctly operationalise the D.V. but omit the population **or** the I.V.

0 marks: Students do not correctly operationalise the D.V.

As in similar questions in 2005 and 2006, this scores zero because the intent of the question is to discover understanding of the process of operationalisation.

Question 14

The researcher has made an effort to fulfil his ethical obligations.

- a. Name two obligations that he has fulfilled and state how he has met each of these obligations.
(2 + 2 = 4 marks)

Answer:

- informed consent – he has told the students the nature and intent of the research and has asked that they agree to take part. Students have signed a document giving permission for their data to be used in the research.
- withdrawal rights – he has told the students of their rights as participants in the research.
- confidentiality - he has told the students of their rights as participants in the research.

Each ethical consideration is assessed separately out of a possible two marks; marks are allocated as follows:

1 mark (each): The consideration is named (or a very close synonym is given) and appropriately explained with reference to **this** study

- b. Name one ethical consideration he does not appear to have covered in his procedures. State the evidence for this breach of ethics.
(2 marks)

Answer:

- § *Voluntary Participation – He is withholding 5% of their subject score unless they take part – this is coercion*
- § *Debriefing – He must inform the participants about the purpose and results of the research and indicate the availability of counselling and how they can access it.*
- § *Any other appropriate consideration.*

2 marks: Students provide an appropriate name and means of implementing the strategy.

1 mark: The ethical consideration is named but not explained

or

The ethical consideration is explained but not appropriately named

Question 15

- i. According to his t-test results, what conclusion can he draw about the difference in the mean scores for the two groups?
(1 mark)

Answer: *the difference in mean scores is statistically significant*

1 mark: A precise answer as shown.

- ii. On a later occasion, the professor repeated his research with another, similar, group of participants and found the same results. This time he did not breach any of the ethical principles. What conclusion could he draw from this research?
(1 mark)

Answer:

- § *He can conclude that his hypothesis is supported*
- § *He can conclude that students who learn in a “noisy” environment will learn less efficiently than those who learn in a quiet environment.*

- § *He can conclude that the results found for the sample will apply to the population of university first-year psychology students.*
- § *The difference between the two means is statistically significant*

1 mark: Any of the above statements is made.
0 marks: Omission of statistical in the statement of significance.

- iii. The professor has calculated the mean scores for the groups. What calculation in *descriptive statistics* could he use to indicate how the scores were spread out across the range of scores? (1 mark)

Answer: *Standard Deviation/Variance/Kurtosis*

1 mark: One of the above is stated.

- iv. Name the calculation in *descriptive statistics* that would best enable the researcher to indicate the mid-point of the scores if there were three scores in one group that were very much higher than any of the others. (1 mark)

Answer: *Median*

1 mark: Median – no other term is acceptable.

Question 16

- a. What is the name of the experimental design used in this research? (1 mark)

Answer: *Matched participants or matched pairs*

1 mark: Answer as above

- b. Name one other type of experimental design you have studied. What is one advantage of the design used by the professor over the design you have named? (1 mark)

Answer:

- § *Advantage over Repeated Measures is that there are no order-effects, eliminating the need for counterbalancing.*
- § *Advantage over Independent Groups is that more robust results can be obtained from the same number of participants. The variable of "Learning ability" was eliminated as a possible confound because of the pre-testing and matching.*

1 mark: Students identify one advantage as shown above or other appropriate advantage.

Question 17

- a. Give two features of this experiment that cause it to be a **true experiment**. (2 marks)

Answer:

- § *It is investigating cause-and-effect between study strategy and learning.*
- § *The researcher is manipulating the Independent Variable (study strategy) to examine its effects on the value of the Dependent Variable (learning).*
- § *The results of an experimental and control (placebo) group are compared.*
- § *He is testing an operational experimental hypothesis that "noisy" condition will be inferior to "quiet" condition in learning of items.*

2 marks: Any two of the above responses.

1 mark: Any one of the above responses.

- b. What is the purpose of the **experimental** group in this study? (1 mark)

Answer: To show the effects of the "treatment" or independent variable.

1 mark: An accurate description is given.

- c. The professor did not realize that several students in the group were severely hearing impaired> What effect could this discovery have on the results of this research (1 mark)

Answer: *Those hearing-impaired students in the "Noisy" group would not have been affected by the noise.*

1 mark: Students clearly identify that the results of the research are confounded.