



GENERAL COMMENTS

Performance on the November 2004 paper was generally comparable with November 2003. There was a slight reduction in the mean score for the short answer section, suggesting that – as in the Unit 3 examination – students continued to have some difficulty with the interpretation of questions and with precision in their responses. In each of the three Areas of Study, the mean score for the multiple choice section was higher than the mean score for the equivalent short answer section. As in 2002 and 2003, the lower mean for the short answer section tended to be a result of imprecise or incomplete answers.

In contrast to 2003, the ‘Research Methods’ part yielded the highest average score in the short answer section (a mean of 48% correct), with ‘Memory’ next (45%). As usual, ‘Learning’ (41%) was the most problematic. In the multiple choice section, ‘Research Methods’ (56% correct) was much more poorly answered than either ‘Memory’ (80% correct) or ‘Learning’ (74% correct).

Marking Policy

It is emphasised that a two-mark question will generally require two pieces of information. One mark will be given for each part, and an answer that fails to address both parts **cannot** achieve full marks; in this examination this applied to Questions 8 and 10c.

Students should be aware that where a question requires the definition of a term, the use of the term (or its derivatives) as part of the definition **precludes** the award of full credit for that response – clearly such a response does not show full understanding. This related to Question 13a in this examination.

This examination contained several questions in which students were required to highlight similarities or differences. Students are advised to indicate where the similarity or difference lies; for example, in Question 3, a useful structure for a response would be:

‘A similarity is that both maintenance and elaborative rehearsal involve...A difference is that maintenance rehearsal...But elaborative rehearsal...’

The examination contained several questions in which students were required to answer with respect to a certain theory, for example, ‘Repression Theory’ (Question 1). Students must be careful to follow the instructions in such cases.

SPECIFIC INFORMATION

Multiple choice questions

This section was generally well answered, with a mean performance 80% for the first Area of Study and over 70% on the second. The mean score for ‘Research Methods’ was over 50%.

This table indicates the number of students who chose each option, with the correct answer indicated by shading. Some of the questions that students found most difficult are discussed.

Question	A	B	C	D	Comments
Memory					
1	1	93	3	3	
2	2	85	8	5	
3	92	4	2	2	
4	15	71	7	6	
5	2	3	94	1	
6	74	4	6	16	
7	0	5	10	84	
8	7	6	4	83	
9	65	23	5	6	It is surprising that 23% of students gave the reason for the Recency Effect as an explanation for the Primacy Effect.
10	5	4	90	1	
11	19	72	6	3	
12	36	60	1	3	Alternative A is an example of Pro-active Interference.

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13	4	1	5	90	
14	4	3	67	26	Clearly the interference is material from the past causing problems with new learning, so alternative D cannot be correct.
15	9	2	4	85	
Learning					
16	3	2	84	10	
17	13	9	5	72	
18	7	15	67	11	
19	8	85	5	2	
20	83	6	4	7	
21	7	24	62	7	
22	5	3	12	79	
23	4	83	6	6	
24	85	6	6	3	
25	2	1	13	84	
26	1	86	11	1	
27	23	10	50	18	This distribution of responses suggests that the concept of schedules of reinforcement is not clearly understood by many students. It is emphasised that reinforcement of every response is classified as Continuous Reinforcement, not Fixed Interval or Fixed Ratio.
28	37	12	41	9	It is difficult to see why many students chose alternative C. Clearly a low to moderate number of responses would be most efficient. The alternative of making it easy to lose tokens is precisely how to make a token economy ineffective, and favourite foods cannot be tokens.
29	20	62	11	6	
30	95	2	1	2	
Research methods					
31	14	0	40	45	The fact that 45% of students chose a hypothesis that was not being tested by the research described shows the need for careful reading of the questions.
32	84	5	7	4	
33	86	7	2	6	
34	77	4	15	4	
35	3	2	13	82	
36	8	11	72	10	
37	17	66	11	6	
38	23	22	38	17	It must be emphasised that matching of samples is on certain variables selected by the researcher as being potential confounds. The fact that the genders are being compared in no way rules out matching for example by intelligence, family income, level of education or any other potentially relevant variable.
39	29	10	5	55	It cannot be emphasised too strongly, correlational research is not attempting to explain cause and effect.
40	5	75	8	11	
41	8	28	61	2	Although C is clearly the correct answer, it must be emphasised that the popular alternative B could not be correct as generalisation of the results is to the population and not to the sample .
42	84	11	2	3	
43	2	11	3	83	
44	47	18	26	9	Since the same participants are used for the three different conditions of the Independent Variable (time of exposure of stimulus), alternative A is clearly correct.
45	16	67	5	11	It was pleasing to note that only 11% of students chose alternative D following the comments in the November 2003 Assessment Report noting that, in a similar question about university students, 42% responded that level of education was not controlled for. It is considered, similarly, that memory skill of the students would vary within reasonable limits. Counterbalancing is essential to eliminate order effects in such research and this was clearly not part of the experimental design.



Short answer questions

Area of Study 1 - Memory

Question 1

Marks	0	1	2	Average
%	32	47	21	0.9

Possible Answer:

Repression is a defence mechanism – an unconscious device to protect the individual from the long-term effects of a traumatic event. This means that the material (that is still in memory) is not brought to consciousness and its negative effects are avoided.

Many students failed to respond **according to the theory of repression** and thus did not gain any marks.

Question 2a

Marks	0	1	Average
%	54	46	0.5

Possible Answer:

The mark was awarded for any curve that intersected the vertical axis at or near 100% and showed a rapid decline at first followed by a much slower decline or levelling out after 20 minutes to one hour.

This is simply the forgetting curve, and the intervals on the horizontal axis are similar to those shown for Ebbinghaus' curve in the texts. Since it is not possible to tell whether the Spanish words were similar to their English equivalents, it was considered that semantic encoding may have been possible and thus the loss of words from memory may have been slower and less in total than Ebbinghaus' original findings.

Many students lost the mark because they drew a curve that resembled the serial position effect, including an ascending curve at the right extremity.

Question 2b

Marks	0	1	Average
%	52	48	0.5

Possible Answer:

$$\frac{T^1 - T^2}{T^1} \times 100$$

T¹ & T² may refer to Time or Trials.

Question 3

Marks	0	1	2	Average
%	26	42	33	1.1

Possible Answer:

Similarities – any of:

- both involve mental repetition of the items
- both **improve** memory
- both may lead to encoding.

Differences – any of:

- E.R. active, M.R. more passive
- E.R. involves meaning, M.R. no meaning
- E.R. involves linking to other material in LTM, M.R. no linking
- E.R. transfers to LTM, M.R. often stays in STM.

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Question 4a

Marks	0	1	Average
%	39	61	0.6

Possible Answer:

Either of:

- atrophy of brain tissue (deterioration of hippocampus)
- destruction of neurons involved in production of acetylcholine (stops production of some neurotransmitters).

Many students described a psychological effect, such as difficulty forming new memories. The question required an answer in terms of the **physiology** of the brain.

Question 4b

Marks	0	1	Average
%	50	50	0.5

Possible Answer:

Either of:

- episodic memories (semantic memories may also be included)
- the formation of new memories.

Question 5a

Marks	0	1	Average
%	65	35	0.4

Possible Answer:

The tip of the tongue phenomenon is where a person can recall certain features of an item from memory, but not the whole concept. This is retrieval failure; the material is in the memory but only parts can be retrieved.

Question 5b

Marks	0	1	Average
%	51	49	0.5

Possible Answer:

Memories are stored in the brain in a complex manner. Each memory involves a number of locations and for the complete memory to be retrieved, each location must be accessed. When retrieval fails, a person only accesses one or two of the locations and only part of the whole memory is retrieved.

Question 6a

Marks	0	1	2	Average
%	46	26	28	0.8

Possible Answer(s):

Any two of:

- slowing down of mental processing
- lack of motivation
- lack of confidence in their own ability to learn or retrieve information
- lack of mental activity (for example, social isolation).

Many students lost marks because they described possible causes of memory decline in a patient with brain damage or dementia; the question quite specifically asked about a **healthy elderly person**.

Question 6b

Marks	0	1	Average
%	53	47	0.5

Possible Answer:

Recognition

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Question 7

Marks	0	1	2	Average
%	31	26	43	1.1

Possible Answer:

Any appropriate acronym and any appropriate acrostic. In each case, the material to be learned must be clearly identified.

Many students gave an acrostic (for example, Richard Of York Gained Battles In Vain) or an acronym (for example, ROY G. BIV) without identifying the material that the mnemonic was being used to represent (in this case, colours of the visible spectrum). Since this was clearly required by the wording of the question, such answers did not gain any marks.

Area of Study 2 - Learning

Question 8

Marks	0	1	2	Average
%	41	35	24	0.8

Possible Answer:

A fixed action pattern is an innate predisposition to behave in a certain way, in response to a specific environmental stimulus, that is characteristic of the particular species/group of organisms. Any appropriate example was accepted.

Many examples were vague and did not demonstrate the student's understanding of the concept; for example, 'Salmon swimming upstream' as opposed to 'Salmon swimming upstream to spawn (in the river where they were hatched)'.

Question 9a

Marks	0	1	2	Average
%	71	16	13	0.4

Possible Answer:

Pair the unwanted stimulus (the cigarette – *Conditioned* or *Neutral Stimulus*) with a stimulus (an electric shock – *Unconditioned Stimulus*) that reflexively produces an unwanted response (pain – *Unconditioned Response*). After several pairings, the *Conditioned Stimulus* (the cigarette) will produce the same response (*Conditioned Response*) even when it is not paired with the *Unconditioned Stimulus* (the electric shock).

Many students lost marks because they failed to follow the instructions in the question and did not use the **language of classical conditioning**; that is, the terms italicised in the example above.

Question 9b

Marks	0	1	Average
%	53	47	0.5

Possible Answer:

One of:

- failure to generalise outside the clinical situation
- overgeneralisation (want to give up drinking alcohol – develop aversion to drinking)
- ethical considerations; specifically, causing physiological or psychological harm to patient
- extinction without repeated administrations of the UCS + CS pairing.

Question 10a

Marks	0	1	Average
%	48	52	0.5

Possible Answer:

Negative Reinforcement

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Question 10b

Marks	0	1	Average
%	59	41	0.4

Possible Answer:

Strengthening of response by removal of an aversive stimulus.

Question 10c

Marks	0	1	2	Average
%	23	16	61	1.4

Possible Answer:

Any of:

- **positive reinforcement** or **punishment** – either by presentation of an aversive stimulus or through response cost
- **shaping** – showing reinforcement of successive approximations as Ishmael does more and more of his homework each night
- **token economy** (appropriately described)
- **behaviour modification** (appropriately described).

Any possible method of Operant Conditioning was accepted, but the description and name gained full marks only if they matched. This is an example of a question where two separate points must be made to earn full marks.

Question 11

Marks	0	1	2	Average
%	84	11	5	0.2

Possible Answer:

Two of:

- behaviour modelling led to improvement in culturally appropriate behaviour when compared to no training
- behaviour modelling was no more successful than cognitive training in causing improvement in culturally appropriate behaviour
- a combination of methods was most successful.

Many students did not attempt to answer this question. It seems likely that this point was not addressed in some schools, which emphasises the point that, when setting the examination, the panel will, and must, use the Psychology Victorian Certificate of Education Study Design as the guide for content for the examination.

Question 12

Marks	0	1	2	Average
%	43	16	41	1.0

Possible Answer:

One of:

Classical Conditioning	Operant Conditioning
The organism is passive when either the CS or UCS is presented	The organism must be active to receive the reinforcement or punishment
Only involuntary (reflexive) responses are involved	May involve both voluntary and involuntary responses
Response (for example, salivation) depends on the reinforcement being presented (UCS or meat powder)	Reinforcement (for example, food pellet) depends on the response being made (for example, lever press)
The reinforcer is the UCS and this precedes the response	The reinforcer follows the desired response
A specific stimulus results in a particular response	No specific stimulus produces a particular response
One stimulus substitutes for another	No substitution takes place
In humans, emotions such as fear, which are associated with the autonomic nervous system, are primarily involved	Responses associated with goal-seeking behaviour are primarily involved
One reinforcer elicits only one type of response (for example, food leads only to salivation)	One reinforcer can be used to strengthen a wide variety of responses (for example, money for completing homework/babysitting)

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Many students lost marks because, despite describing a characteristic of Classical or Operant Conditioning, they failed to show how this characteristic contrasted with the other form of learning.

Question 13a

Marks	0	1	Average
%	54	46	0.5

Possible Answer:

Either of:

- previous learning influences the ability to learn in another environment
- learning how to learn.

Although technically **learning set** includes both positive transfer **and** negative transfer, identification of **either** or **both** in a student's answer was awarded a mark.

Question 13b

Marks	0	1	Average
%	50	50	0.5

Possible Answer:

Any appropriate example was given credit, whether from learning facts, learning to identify (for example, names and faces) or procedures.

Area of Study 3 – Research Methods

Question 14a

Marks	0	1	2	Average
%	27	24	48	1.2

Possible Answer:

Single-blind: **only** the participants are unaware of whether or not they are receiving the treatment condition of the independent variable.

Double-blind: **both** the participants **and** the researcher administering the treatment/placebo are unaware of which participants are receiving the treatment condition of the independent variable and which are not.

Many students lost marks for vague or ambiguous wording. Many students who made such comments as 'both subjects and researcher are unaware of what is going on' did not show an understanding of the concept and earned no marks.

Question 14b

Marks	0	1	Average
%	70	30	0.3

Possible Answer:

To eliminate the influence of participant expectations. A placebo effect occurs when participants modify behaviour in accordance with what they believe the outcome of the treatment will be.

Use of a placebo means that the difference in outcome between control and experimental conditions will be due to the independent variable, not merely to participation in the experiment.

It was acceptable for students to use the term **placebo** in reference to either an imitation of the treatment condition, or in reference to the group of participants.

Question 15a

Marks	0	1	Average
%	65	35	0.4

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Possible Answer:

Either of:

- the ethics committee has given permission for the deception (and put appropriate debriefing procedures in place)
- fully informing participants prior to the research would render the results of the research invalid (and the researcher has put appropriate debriefing procedures in place).

The second of the responses above was the most frequent. The information in parentheses was desirable but not required.

Question 15b

Marks	0	1	Average
%	56	44	0.5

Possible Answer:

To prevent psychological or physiological harm to participants.

Since this is the overriding consideration in developing ethical guidelines for research, it is surprising that less than half the students gained the mark for this question.

Question 15c

Marks	0	1	2	Average
%	13	23	65	1.5

Possible Answer:

Two of:

- no psychological or physiological harm to participants
- withdrawal rights
- informed consent
- voluntary participation
- participant confidentiality

or any other appropriate ethical consideration.

Not surprisingly, the significant majority of students gained full marks for this question. Since the instruction in the question was to 'list', students were required only to name the ethical considerations; explanation or description of the terms was unnecessary.

Question 16a

Marks	0	1	Average
%	27	73	0.7

Possible Answer:

Either of:

- standard cover/bright orange cover
- colour of book cover

Question 16b

Marks	0	1	Average
%	74	26	0.3

Possible Answer:

Either of:

- there is no (statistically) significant difference in the return rates for the two types of book cover
- no conclusion can be drawn.

Students appeared unwilling to accept that no conclusions can be drawn for much research that is undertaken. It is emphasised that this was a question about the meaning of **statistical significance**.

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Question 17

Marks	0	1	2	Average
%	44	33	23	0.8

Possible Answer:

Descriptive statistics only give information about the nature of the data set, or enable manipulation and organisation of the data.

Inferential statistics enable any of the following:

- generalisation of findings to the population
- testing of hypotheses
- determining statistical significance
- drawing conclusions from results.

As with Question 12, many students lost marks because, despite describing a characteristic of inferential or descriptive statistics, they failed to show how this characteristic was different from characteristics of the other type of statistical procedures.

Question 18

Marks	0	1	2	Average
%	55	29	16	0.6

Possible Answer:

Advantages – any of:

- needs fewer subjects (than independent groups)
- experimentation is not over extended time (c.f. Repeated Measures) – fewer drop-outs
- fewer order effects (c.f. Repeated Measures)
- controls for the effects of the variable on which participants are matched.

Disadvantages – any of:

- time and expense required to collect information on the matched variable
- if one of a pair drops out, both participants are lost to the data pool.

The distribution of marks reflects a poor level of understanding of experimental designs and shows students' difficulty in providing accurate responses where there is a minor degree of complexity in the question. A good response identified the advantage and disadvantage and indicated the type of experimental design with which the comparison was made; for example, 'not over extended time' is **not** an advantage over Independent Groups, only over Repeated Measures.

Question 19a

Marks	0	1	Average
%	27	73	0.7

Possible Answer:

Strong negative or inverse or positive (moderate or moderate to strong was accepted).

Although the relationship appears negative, and convention indicates a negative relationship, the axes were not labelled so it was accepted that the relationship could be either positive or negative.

Question 19b

Marks	0	1	Average
%	65	35	0.4

Possible Answer:

Any of:

- test of correlation
- correlation coefficient
- any other specifically named appropriate test of correlation (for example, 'Pearson's' or 'Spearman's').

Many students indicated 'A test for P(robability)', which was not an acceptable response.