VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

2011 Psychology GA 3: Written examination 2

GENERAL COMMENTS

Students' overall performance on the November 2011 paper is difficult to compare with previous years because of the altered structure of the examination for 2011. As in previous years, mean scores for the multiple-choice section were superior to those on the short answer section. The mean score for the extended response was slightly lower.

Students are encouraged to respond to each multiple-choice question; not only is it impossible to achieve a mark where no response is given, leaving a blank can increase the likelihood that later answers on the computer-scored sheet will be out of synchronisation and further marks may be lost. It is always possible to change a response by carefully erasing and re-shading. It is advised that use of a ruler, moved down the page as each question is answered, may help to ensure that the correct response line is being completed.

In the short answer section, problems in terms of failure to address command terms in questions again arose; for example, 'Describe … compared with' (Question 2); in terms of primary appraisal' (Question 3a); '… medical management…' (Question 4a.); 'State one socio-cultural factor …' (Question 4b.); 'With reference to the three-phase model…' (Question 5) and 'With reference to this scenario …' (Question 7).

SPECIFIC INFORMATION

Section A – Multiple-choice questions

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	% No answer	Comments
1	5	12	75	8	0	
2	2	2	91	5	0	
3	5	13	23	58	1	
4	14	63	16	7	0	
5	67	9	22	1	0	
6	1	1	1	98	0	
7	1	11	81	7	0	
8	73	12	7	7	0	
9	80	11	7	2	0	
10	3	61	11	24	0	
11	7	86	4	4	0	
12	3	1	3	93	0	
13	89	9	1	1	0	
14	2	1	93	5	0	
15	5	1	4	90	0	
16	11	31	11	47	0	Three seconds (option B) would represent 'trace' conditioning.
17	15	4	9	71	0	
18	43	40	1	16	0	'Response cost' (option B) was more specific than 'punishment' (option A).
19	0	2	97	1	0	
20	2	0	93	5	0	
21	87	5	2	7	0	
22	91	6	1	2	0	

23	8	9	5	78	0	
24	26	21	24	29	0	The even spread of marks across all alternatives suggest that this particular experiment is not well understood by students.
25	7	30	10	53	0	The DSM-IV-TR symptoms include both physiological measures and subjective feelings, thus option B (relies on objective physiological measures of wellbeing instead of subjective feelings) was incorrect.
26	16	55	17	12	0	
27	8	55	30	6	0	The resistance to stress does not drop below normal level during the stage of resistance.
28	60	21	11	8	0	
29	9	80	5	6	0	
30	2	92	4	3	0	
31	37	4	2	57	0	Both 'social factor' (option A) and 'environmental factor' (option D) were accepted.
32	1	1	98	1	0	
33	4	4	5	87	0	
34	80	1	14	4	0	
35	3	9	77	10	0	
36	6	1	89	5	0	
37	1	7	8	83	0	
38	85	2	12	1	0	
39	1	91	6	1	0	
40	35	12	12	41	0	The distress that Sarah experienced was appraised in a negative way. Option D (challenge) is not a negative appraisal.
41	6	78	6	10	0	
42	88	3	6	3	0	
43	2	27	60	11	0	
44	2	8	13	77	0	
45	10	3	9	79	0	

Section B – Short answer questions

For each question, an outline answer (or answers) is provided. In some cases the answer given is not the only answer that could have been awarded marks.

Question 1

Marks	**0**	**1**	**2**	**Average**
%	30	43	26	**1**

Features of adaptive plasticity include:

- new connections between neurons (synapses) are formed or connections are altered (as a consequence of change to environmental conditions when learning something new or when re-learning something after brain injury)
- bushing/sprouting
- other areas compensating for areas of damage
- occurs throughout life
- rerouting/reorganisation.

Adaptive plasticity occurs at a neuronal level. Students who gave responses that could refer to developmental plasticity could not gain full marks.

Question 2

Marks	0	1	2	Average
%	35	22	43	**1.1**

- Using a dimensional approach evaluates the symptoms and classifies the disorder on its severity or degree, not just absence or presence. A categorical approach only looks at presence or absence of the disorder.
- Using a dimensional approach lessens the likelihood of labeling, compared with using a categorical approach.

The dimensional approach does not eliminate the possibility of labeling as many students erroneously stated. A comparison between the two was required.

Question 3a.

Marks	0	1	2	3	4	Average
%	16	28	31	20	5	**1.7**

Primary appraisal is subjective in nature.

Stella

Primary appraisal (either of):

- has initially assessed the situation as a threat (as she is feeling overwhelmed and cannot sleep)
- has regarded Year 12 as a harm or loss that may not yet have occurred but could occur in the future.

Audrey

Primary appraisal (either of):

- has initially assessed the situation as a challenge (as Year 12 is an experience that involves the potential for individual gain or growth)
- has initially assessed the situation as irrelevant.

Secondary appraisal and emotional forecasting were not required by the question, but many students included these in their responses. Responses needed to relate to the scenario.

Question 3b.

Marks	0	1	2	3	Average
%	55	25	17	3	**0.7**

- Stella would be given information about an autonomic physiological response that would indicate a level of stress; for example, muscle tension, heart rate, breathing rate, body temperature, Galvanic Skin Response (GSR), etc.
- Stella can be taught strategies such as calming thoughts, breathing relaxation or progressive muscle relaxation techniques that enable her to alter the reported response.
- The continued presentation of this information helps Stella create desired physiological changes (for example, reduced heart rate) that can be measured by the biofeedback device.

A response that did not relate to the scenario could not gain full marks. Responses related to pain management or muscle rehabilitation were not required; the response needed to relate to stress.

Question 4a.

Marks	0	1	2	Average
%	41	41	18	**0.8**

- People with specific phobias such as Mikaela's may have reduced levels of GABA, which normally inhibits the over-activated physical responses to fear/anxiety.
- Taking medication that mimics the action of GABA in Mikaela's system and inhibits the over-activation of physical responses to fear/anxiety caused by spiders.

Responses that did not relate to the scenario could not achieve full marks.

Question 4b.

Marks	0	1	Average
%	10	90	**0.9**

Students could give any appropriate socio-cultural factor including:

- parental modelling of fear of spiders; for example, mother terrified of spiders
- vicarious transmission of threat information; for example, media stories about spiders or watching a horror film about spiders.

Question 5

Marks	0	1	2	3	Average
%	31	19	24	27	**1.5**

One of:

- Phase 1: stimulus that precedes an operant response (discriminative stimulus, antecedent condition) – saying no to a lolly at the supermarket, putting the child to bed when they don't want to go (anything the child dislikes that would result in a tantrum)
- Phase 1: child seeing, for example, supermarket door where he has previously received a reinforcer when throwing a tantrum
  Phase 2: operant response to the stimulus (behaviour) – child throws a tantrum
  Phase 3: consequence – parent ignores the child and walks away, removes a favourite toy or punishes the child. Any suitable consequence that reduces the likelihood of the tantrum occurring again
- Phase 1: stimulus that precedes an operant response (discriminative stimulus, antecedent condition) – tantrum
  Phase 2: operant response to the stimulus (behaviour) – parent responds by speaking gently/nursing child/giving lolly)
  Phase 3: consequence – parent is negatively reinforced by removal of unpleasant 'tantrum' experience.

If the response did not relate to the scenario, it achieved a maximum of one mark. Phase 2 and Phase 3 needed to follow on logically from Phase 1.

Question 6ai.–ii.

Marks	0	1	2	3	Average
%	5	33	41	21	**1.8**

6ai.

Fixed interval

6aii.

- the end of the week/Friday
- in this schedule of reinforcement the reward is only available after the fixed period of time, therefore there was no incentive to have the room tidy at any other time

Question 6b.

Marks	0	1	2	Average
%	35	15	50	**1.2**

- variable interval/variable ratio/continuous reinforcement/random ratio
- variable interval would require John to keep his room tidy every day because he would not know when his mother would inspect the room

Many students gave 'variable ratio' as the schedule but then described 'variable interval'.

Question 7

Marks	0	1	2	Average
%	23	17	60	**1.4**

- short-tailed shearwater birds hatching in their burrows (dependent on maturation)
- adult birds leaving the baby birds (fixed-action pattern)
- making an annual migration flight (fixed-action pattern)
- young birds leave their burrows (dependent on maturation)
- baby birds make first migration flight (fixed-action pattern)

- baby birds flying (dependent on maturation)

A common error was when students identified a behaviour but did not identify the correct type of non-learned behaviour as indicated above; 'hatching', for example, is not a species-specific behaviour.

Question 8

Marks	0	1	Average
%	33	67	**0.7**

- SPECT
- PET
- fMRI

The EEG is not imaging technology. MRI and CT scans would not show the changes while learning a specific task; they would show only still 'before' and 'after' images.

Question 9a.

Marks	0	1	2	Average
%	12	52	36	**1.3**

A biopsychosocial framework is an approach to describing and explaining how biological, psychological and social factors combine to influence an individual's (physical and) mental health. These factors are understood to interact in terms of contributing to the conditions and in their management.

Question 9b.

Marks	0	1	2	Average
%	35	56	8	**0.8**

- Previously, mental health and physical health were considered two separate concepts. The biopsychosocial framework unites these.
- The biopsychosocial framework considers the individual as a unique being, influenced by the interaction of all three of these factors (biological, psychological and social).
- The biopsychosocial framework has caused thinking to progress from the medical model of health and wellbeing.
- The biopsychosocial framework has contributed to application of a functional model of health and wellbeing.

Questions 10, 11 and 12

Question chosen	none	10	11	12
%	0	35	32	33

Part a.

Marks	0	1	2	Average
%	5	27	67	**1.6**

Part b.

Marks	0	1	2	Average
%	36	35	29	**0.8**

Part c.

Marks	0	1	2	Average
%	38	32	29	**0.9**

Students' choice of question was very evenly distributed.

- Part a. of each option related to exclusion criteria or to knowledge of diagnostic criteria for each condition and was generally well answered in each case.
- Part b. of each option related to the role of neurotransmitters in causing the conditions and in treatment.

- Part c. of each option required knowledge of management strategies and factors impacting on effectiveness of management.

Question 10 – Mood Disorder: Major Depression

10a.
Janet is not showing:

- prolonged sadness (for at least two weeks) present for most of the day
- anhedonia when doing activities that were previously pleasurable
- lack of pleasure for most activities most of the time
- loss of energy and fatigue
- inappropriate guilt or self-blame
- thoughts of death/suicide
- difficulty concentrating
- decreased/increased sleeping
- decreased/increased appetite
- state of agitated or retarded psychological and/or physical activity
- sudden change in weight.

Janet's response to losing her dog was a normal expression of grief.

10b.

- Reduced levels of serotonin have been linked to depression.
- SSRIs increase the effectiveness of the use of the neurotransmitter serotonin.

SSRIs do not increase the amount of serotonin in the body. By inhibiting re-uptake into the pre-synaptic neuron, the same quantity of serotonin released enables increased transmission of neural impulses.

10c.
Strengths

- does not create side effects (no drugs)
- changes underlying thought patterns linked to depression – reduces the amount and severity of someone's automatic negative thoughts
- deals with the psychological features of depression
- relatively short term (structured and focused)
- residual benefits – continues to be effective after treatment has finished
- low suicide ideation compared with other forms of treatment

Limitations

- difficult to rehabituate negative thoughts
- difficult to control automatic and involuntary negative thoughts that are quite plausible to the individual
- does not consider biological factors
- relies on patient's active compliance

Question 11 – Addictive Disorder: Gambling

11a.
Joe is not:

- showing gambling dominating his thinking
- showing mood modification
- showing an increase in level/frequency of his gambling (increasing tolerance)
- showing physical or psychological reactions if he is unable to play the machines
- using it as escape
- trying to reclaim losses
- lying about where he is or what he is doing
- engaging in illegal activities to obtain money for gambling.

11b.

- Gambling games activate the brain's dopamine reward system. Dopamine reinforces the association between rewards and the cues and behaviours that precede each reward. Dopamine creates a strong feeling of pleasure/positive emotions.
- Medical treatment (using dopamine antagonists) inhibits the role of dopamine or reduces the levels of dopamine in the brain.

11c.

- Gambling occurs on a variable schedule of reinforcement as delivery of the reinforcer (money) is experienced intermittently.
- Long periods of play without reward can be maintained and the behaviour is resistant to extinction.
- Random ratio schedule or variable ratio schedule.

Question 12 – Psychotic Disorder: Schizophrenia

12a.

- Sam is not showing distortion of reality.
- Onset of schizophrenia is usually before 30 years of age (especially in males).
- Sam recognises something is wrong.

12b.

- 'Typical antipsychotics' are dopamine antagonists (drugs given to treat schizophrenia for some individuals) that block dopamine receptors. Some research suggests excessive activity of dopamine is related to schizophrenia.
- 'Atypical antipsychotics' treat negative (flat effect, withdrawal) as well as positive symptoms.
- Research is showing that reduction of glutamate can inhibit dopamine production, so medications acting on glutamate are recent developments in the treatment of schizophrenia.

12c.

- CBT involves assisting the individual to identify and change the thoughts responsible for maintaining their symptoms.
- Cognitive remediation (problem-focused coping) teaches specific information processing skills targeted at one or more cognitive difficulties. It focuses on decreasing the everyday problems experienced by schizophrenic individuals with cognitive difficulties such as attention, concentration.

Section C – Extended answer question

Marks	0	1	2	3	4	5	6	7	8	9	10	Average
%	7	7	12	15	17	16	13	8	4	1	0	**4.1**

- IV: Teacher's positive reinforcement of the students' responses versus no positive reinforcement or 'normal teaching'
- DV: Student learning of mathematics/mathematics performance

(Operationalised as the improvement in the number of questions correct between the first and second numeracy tests of 40 questions each.)

Possible hypothesis
Year 8 students from Mountain Hills Secondary College who are rewarded with praise when they get a mathematics question correct will show increased learning of mathematics compared with students who are not reinforced.

Discussion
Conclusion: The results are statistically significant ($P < .05$)

The hypothesis is supported; positive reinforcement for mathematics performance increases learning of mathematics for Year 8 students from Mountain Hills Secondary College.

Implication
This suggests that the process of positive reinforcement for mathematics performance should be an important component of teaching mathematics.

Weaknesses
Initial mathematical ability was not controlled for and this may influence ability to learn (repeated measures or matched participant designs would eliminate this problem).

'Convenience sampling' indicated that different teachers taught the experimental and control groups. Experimenter effect was not eliminated. To control this, have the same teacher for both classes and ensure that the teacher was not aware of the variables or hypothesis.

The following rubric was used as a basis for assessment.

Knowledge and Comprehension

Very high
- introduction correctly contains IV and DV, acknowledges different levels of the IV and correctly explains operationalisation of DV
- contains at least one correct hypothesis (population, IV, DV)
- discussion contains at least one conclusion (appropriately accept/reject hypothesis)
- implications of the conclusions are correct
- at least one weakness of the design correctly identified and appropriate procedures for elimination identified

High
- introduction correctly contains IV and DV, acknowledges different levels of the IV and correctly operationalises DV
- contains at least one correct hypothesis (population, IV, DV)
- discussion contains a conclusion based on the hypothesis
- implications of the conclusion are correct
- one weakness of the design correctly identified and appropriate procedures for elimination identified

Medium
- introduction correctly contains IV and DV but may not operationalise DV or describe both conditions of IV
- contains a hypothesis with one essential part missing (population, IV, DV)
- discussion contains a conclusion based on the hypothesis
- implication of the conclusion may be inadequate
- at least one weakness of the design correctly identified

Low
- introduction correctly contains either IV or DV but does not operationalise DV or describe both conditions of IV
- some relevant aspects of a correct hypothesis are included
- a conclusion is identified but implications are not relevant
- a weakness of the design is identified but an appropriate procedure to overcome the weakness is not addressed

Very low
- limited/incorrect identification of the IV or DV
- IV/DV not operationalised
- little or no relevant aspects of a correct hypothesis is included
- limited or no identification of an appropriate conclusion
- limited or no identification of a design weakness

0 marks
No correct information/no attempt

Higher-Order Thinking Skills

Very high
- effective and clear application and use of report-writing conventions
- effective and clear written communication
- critical and insightful interpretation and evaluation of the study to draw conclusions
- comprehensive correct use of psychological terminology and information

High
- effective and clear application and use of report-writing conventions
- effective and clear written communication
- effective and clear interpretation and evaluation of the study to draw conclusions
- comprehensive correct use of psychological terminology and information

Medium
- some appropriate application and use of report-writing conventions
- some clarity of written communication
- some relevant interpretation and evaluation of the study to draw conclusions
- some correct use of psychological terminology and information

Low
- limited application and use of report-writing conventions
- limited clarity of written communication
- limited interpretation and evaluation of the study to draw conclusions
- limited use of correct psychological terminology and information

Very Low
- very limited application or use of report writing conventions
- little or no clarity of written communication
- limited interpretation and evaluation of the study to draw conclusions
- limited use of correct psychological terminology and information

0 Marks
No understanding or comprehension of the study, research methodologies and psychological reporting conventions shown.

As the rubric above indicates, the way in which this question was assessed was not a case of simply 'counting up' the required content. It is important to note, however, that the required components of a psychological report need to be present in a satisfactory response. The content required was as follows:
- IV: correct (both conditions)
- DV: correct and appropriately operationalised
- hypothesis: prediction, population, IV, DV
- conclusion: appropriate, in terms of hypothesis, related to statistical significance
- implications
- weakness: identified, remedy.

In this instance, the hypothesis could be operationalised or not, as the exact type of hypothesis was not specified. If a 'research' or 'experimental' hypothesis were specified, it would be expected that variables would not be operationalised within the hypothesis. In accordance with common research practice, the variables would previously be defined in operational terms. It is emphasised that the term 'operational hypothesis' is not used in the current study design.

If the student indicated that methodological issues prevented a conclusion being drawn this would be given credit, but could not achieve credit for 'implications'.

It was essential that the remedy be congruent with the weakness identified.

This question was not well answered; many students had very little understanding of the required structure of a psychological report. Many students simply copied out large sections of the information given in the question, but this was not a successful strategy.