



## GENERAL COMMENTS

Students generally performed well on the June 2007 examination, and the results were very comparable with examination 1 in previous years. However, the results for this examination indicated that there was a greater degree of discrimination amongst students.

In the multiple-choice section all three areas were well-answered. The mean score for both 'Visual perception' and 'Brain and nervous system' was 70 per cent. The best answered area was 'States of Consciousness', with a mean of 77 per cent, a very similar average to 2006.

As in previous years, students did not perform as well on the short answer questions, generally because of a lack of precision and completeness in descriptions and definitions, failure to refer to appropriate psychological information or failure to provide appropriate examples in their answers – even when the requirement for this was explicitly stated in the question. Students had the most difficulty with 'States of consciousness', achieving a mean score of 49 per cent. 'Visual perception' followed with a mean of 54 per cent, and 'Brain and nervous system' was answered the best, with a mean of 62 per cent.

Teachers had clearly instructed and directed students' attention to the key knowledge and skills in the *Psychology VCE Study Design*. In general, students demonstrated good knowledge and understanding of the curriculum, although, as in previous years, many did not achieve full marks because they failed to address all aspects of the questions in their answers. For example, when required to 'use an example to clearly explain' in Question 9, many answers contained only a generic description of how context influences visual perception.

Students need to read the short answer questions very carefully and then check their answer against the question's requirements. Highlighting the **instructional terms** (for example, 'outline', 'describe', 'explain', etc.) before planning a response is a good practice, and helps ensure that the answer addresses the question specifically and completely.

If a question provides a context for the response by presenting a specific scenario or example, it is essential that students refer to that specific scenario or example in their response. For example, in Question 7 students needed to refer to the features of the figure presented.

Short answer questions worth two marks generally require **at least** two key terms and/or pieces of information, while those worth one mark generally require one (or sometimes two) key terms and/or pieces of information. Questions worth three or four marks have an appropriate number of lines for the answer.

## SPECIFIC INFORMATION

### Section A – Multiple-choice questions

Students should answer all questions in the multiple-choice section of the paper. If they are unsure of the answer, students are advised to mark the response that is their 'best guess' for any question – it is always possible to change a response by carefully erasing and re-shading. Answering all questions also decreases the likelihood that further answers will be out of synchronisation.

This section of the paper was very well answered, with only five questions resulting in a correct response rate of less than 50 per cent. These questions, along with other moderately difficult ones, are discussed below.

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

Question	% A	% B	% C	% D	Comments
<b>Area of Study 1 – Brain and nervous system</b>					
1	3	2	16	79	
2	10	55	22	13	Alternative B was a direct contradiction of the facts and the only incorrect alternative.
3	96	2	1	0	
4	2	47	1	50	Images falling on the left side of each retina are processed in the left occipital lobe and images falling on the right side of each retina are processed in the right occipital lobe. Almost half of the students chose the incorrect alternative B.  This question was similar to Question 6 on the 2006 paper, which was also poorly answered.
5	6	2	78	14	
6	8	85	3	3	
7	9	1	11	79	
8	70	19	8	3	
9	9	10	79	3	
10	41	16	38	4	Although the correct alternative was the most popular response, many students indicated that alternative C, 'CT scans usually require an injection into the bloodstream', was false. In fact, in the majority of cases an injection is required, although it is not of a radioactive isotope in a vehicle of fluorodeoxyglucose, as is the case with a PET scan.
11	6	9	14	70	
12	12	3	2	82	
13	3	96	0	1	
14	85	12	2	1	
15	53	3	2	42	In establishing the baseline for the polygraph, both neutral and emotional questions are used. These include 'probable lie' questions and questions requiring both 'yes' and 'no' responses.
16	5	65	19	11	
17	59	14	13	14	
18	1	59	27	13	Students who indicated that the researcher should debrief the patient before carrying out the research showed a misunderstanding of the purpose and practice of debriefing.
<b>Area of Study 2 – Visual perception</b>					
19	8	82	5	5	
20	3	2	94	1	
21	8	88	0	3	
22	14	11	71	4	
23	76	5	12	8	
24	21	30	5	44	Brightness constancy clearly indicates that the answer must be alternative D. Over half of the students indicated difficulty with the concept of brightness constancy.
25	73	2	15	9	
26	12	17	66	6	
27	9	9	21	61	
28	5	91	1	2	
29	6	7	31	56	
30	9	5	74	12	
31	22	17	34	28	Whenever there is a bias in sample selection, the sample cannot be deemed random. In this case the researcher selected girls 'who were at school on the day of her study' – the girls who were not at school did not have an equal chance of inclusion in the sample.



Area of Study 3– States of consciousness					
32	94	0	3	2	
33	11	77	7	5	
34	2	3	1	93	
35	23	73	1	3	
36	10	7	6	77	
37	7	9	75	9	
38	12	9	5	74	
39	43	11	17	28	28% of students indicated that dreams 'do not occur' during non-REM sleep. In fact, up to 10% of dreaming (usually of a bizarre and disjointed nature) may occur in NREM sleep.
40	29	57	9	5	
41	4	12	11	73	
42	2	5	91	1	
43	93	6	0	0	
44	2	82	7	8	

## 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.

### Area of Study 1 – Brain and nervous system

This section was generally well-answered.

#### Question 1

Marks	0	1	Average
%	22	78	0.8

To enable transfer of information between hemispheres.

Many answers incorrectly indicated that the corpus callosum **sends** information. This is incorrect – it acts as a conduit for neural impulses.

#### Question 2

Marks	0	1	2	Average
%	35	32	33	1.0

Value

- Case studies provide a detailed and complete (or near complete) description of one person's situation, experiences and evaluation of treatment, including background, family history and environment, through one-on-one interviews, individual testing, etc.
- It can provide ideas for theoretical explanations and experimental research.

Limitation

- It is very difficult to generalise data to other people. Many case studies involve unique situations, large differences between brains or plasticity of the brain, etc.
- It is very difficult to analyse such a huge collection of data (intense and time consuming).

One mark was allocated to the value and one mark to the limitation. Any of the above items gained credit.

#### Question 3a.

Marks	0	1	Average
%	55	45	0.5

Any one of the following:

- glucose
- fluorodeoxyglucose
- sugar
- ammonia

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- water
- radioactive glucose
- carbon-11
- fluorine-18
- oxygen 15
- nitrogen-13.

### Question 3b.

<b>Marks</b>	<b>0</b>	<b>1</b>	<b>Average</b>
<b>%</b>	28	72	<b>0.7</b>

Either of:

- it provides information about the levels of activity in different areas of the brain during the performance of these tasks
- it maps the areas of the brain that are involved during the performance of the task.

Statements that related only to 'brain function' simply repeated the information given in the question and did not gain the mark.

### Question 3c.

<b>Marks</b>	<b>0</b>	<b>1</b>	<b>Average</b>
<b>%</b>	31	69	<b>0.7</b>

Any one of:

- CT
- (CAT)
- SPECT
- MRI
- fMRI.

EEG was **not** acceptable as the question specified an 'imaging device'.

### Question 4a.

<b>Marks</b>	<b>0</b>	<b>1</b>	<b>Average</b>
<b>%</b>	34	66	<b>0.7</b>

**Frontal** lobe in the **left** hemisphere.

Both pieces of information were required. Students did not need to state that this is so more than 95 per cent of the time.

### Question 4b.

<b>Marks</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>Average</b>
<b>%</b>	23	48	30	<b>1.1</b>

Any **two** of:

- produces very little speech
- speech requires much concentration and effort
- difficulty articulating speech (pronouncing words)
- speech tends to be slow and drawn out
- short words – prepositions/conjunctions tend to be omitted
- sentences tend to be very short (up to four words)
- sentences tend to be made up of verbs and nouns only
- words lack grammatical endings (for example, -ing).

A common error was to list two descriptors of the same difficulty; for example, speech is slurred and poorly articulated; or words are shortened and words lack grammatical endings. Such responses received only one mark.

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## Question 5a.

Marks	0	1	2	Average
%	4	24	72	1.7

- flight/fight response (fight or flight)
- parasympathetic

The response is referred to as the 'fight or flight' response. Even though Pauline was obviously not intending to **fight** the car, both terms are required in naming the response.

## Question 5b.

Marks	0	1	2	Average
%	17	32	52	1.4

Any one of:

- inhibition of tear glands
- dilation of pupils
- dry mouth (inhibition of salivation)
- increased heart rate
- increased breathing (respiration) rate
- dilation of bronchial passages
- constriction of blood vessels in skin
- inhibition of stomach contractions, digestive secretions and peristalsis
- relaxation of bladder
- inhibition of erection/stimulation of ejaculation
- increased secretions by sweat glands
- goose bumps/hair follicles raised
- secretion of adrenal hormones (release of adrenaline and noradrenaline).

The explanation needed to indicate how the specific response named would improve Pauline's chances of survival. If the response and the explanation did not match, no mark could be awarded for part b.

## Question 6a.

Marks	0	1	Average
%	11	89	0.9

Exhaustion

## Question 6b.

Marks	0	1	2	Average
%	33	31	36	1.0

Any two of:

- anxiety
- depression/depression-like symptoms (for example, apathy or sadness)
- nightmares
- lack of appetite
- sexual dysfunction
- feelings of burnout
- irritability
- aggression
- feelings of losing (or out of) control/external locus of control
- difficulty concentrating
- flat affect – blunt emotive reactions, lose of empathy/understanding
- difficulty organising or prioritising tasks, or never feeling on top of tasks
- intrusive thoughts
- high emotionality.

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It was important for two **different** psychological problems to be identified. Only one mark was given for 'depressed' and 'sad' or for 'anxious' and 'nervous'.

## Question 6c.

Marks	0	1	2	Average
%	32	39	29	<b>1.0</b>

Help

- The release of cortisol (a stress hormone) repairs the body and speeds up the healing process.
- The release of adrenaline (a stress hormone) and all the other symptoms of arousal maintain alertness and help the body to fight the stressor.

Harm

- These physiological strains have placed great pressure on the heart and led to the heart disease/heart attack.
- The body's immune system has been weakened by fighting the stress hormones, meaning that Suzanne cannot resist further infections. (The weakened body may be more prone to heart failure, so this was an acceptable alternative.)

It was not necessary for students to name the stress hormones, though students who named an inappropriate hormone did not gain the mark.

## Area of Study 2 – Visual perception

This was the weakest of the three areas of study in the short answer section. The relatively poor result for Question 7 emphasises the need for students to apply their answers to the specific question asked rather than make a generic statement where they are required to apply a concept.

## Question 7

Marks	0	1	2	3	4	Average
%	8	19	30	20	23	<b>2.3</b>

- Figure-ground: the number 1 is perceived as a meaningful unit, standing out from the background. We apply a subjective contour as an outline of the figure.
- Similarity: objects that are alike (the ticks) are perceived to form a meaningful whole unit (the figure 1).
- Closure: although the ticks are not connected, we perceive them as belonging to a single meaningful unit and apply closure to see the figure 1.

It was essential that the explanations referred to the figure shown **and** that the name and the explanation were congruent.

## Question 8a.

Marks	0	1	Average
%	46	54	<b>0.6</b>

Accommodation

## Question 8b.

Marks	0	1	Average
%	34	66	<b>0.7</b>

Closer to the horizon than the other clouds **or** lower in the picture than the other clouds.

Imprecise answers such as 'behind the other clouds' or 'at the bottom of the picture' did not earn marks.

## Question 9

Marks	0	1	2	Average
%	55	15	30	<b>0.8</b>

For example:

- in the rat-man experiment, subjects who are shown a group of line-drawings of faces including the ambiguous stimulus perceive it as an old man. Subjects who are shown a group of line-drawings of animals including the

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- ambiguous stimulus perceive it as a rat. This means that the context had predisposed them to be prepared to perceive the stimulus in a particular way
- in Loftus and Mackworth's experiment with a picture of the giant squid outside the barn in a farmyard scene, the unexpectedness of the squid in that environment (context) meant that subjects focussed their attention on the squid and did not notice other details.

Many answers were generic, simply describing context as creating perceptual set. Some examples given did not relate to **visual** perception – therefore did not relate to this Area of Study.

## Question 10a.

Marks	0	1	2	Average
%	39	7	54	<b>1.2</b>

- shape
- size

No other terms were acceptable. The order in which the terms were stated was of key importance.

## Question 10b.

Marks	0	1	2	3	Average
%	21	27	37	14	<b>1.5</b>

- As a person crosses the room they approach or get further away from the viewer. As the size of the retinal image changes (or the distance from the viewer changes), the viewer perceives the person to grow or shrink in size.
- The room is constructed in a trapezoidal shape so that one back corner is twice as far from the viewer as the other back corner.
- Cues in the room, such as windows or clocks, are also distorted to give the impression that they are being viewed from a 90 degree angle.
- Viewing through a peephole – eliminating the strongest (binocular) depth cues and using only monocular pictorial cues – intensifies the illusion.

Students needed to give a description of the structural features (design) of the room and state that the illusion of changing size is brought about by varying distance. Referring to the size of the retinal image was useful but not required.

## Question 11

Marks	0	1	Average
%	29	71	<b>0.7</b>

Either of:

- to protect the rights and welfare of participants (no harm principle)
- to promote research of benefit to the community/humankind (maximise beneficence).

Many answers concentrated on explaining why 'national' guidelines are important. The question referred to the overriding principles that are stated in the NHMRC guidelines.

## Area of Study 3 – States of consciousness

Students appeared to have a reasonable knowledge of this Area of Study, although some students needed to take greater care to answer the questions properly. For example, Question 12 required the name or description of an altered state of consciousness and two psychological characteristics that would distinguish this state from normal waking consciousness. Students had to identify characteristics that were appropriate to the altered state that they had nominated.

## Question 12

Marks	0	1	2	3	Average
%	12	19	26	43	<b>2.0</b>

Sleep/dreaming/daydreaming

- thought patterns are disorganised
- distorted perception of time

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- lack of control of movements
- sensations and perceptions are dulled

## Meditation

- sensations or perceptions are dulled (for example, pain)
- distorted perception of time
- awareness of external environment is reduced

## Hypnosis

- distorted perception of time
- sensations or perceptions are dulled (for example, pain)
- loss of awareness of self
- can increase self control (for example, quitting smoking)
- more suggestible, so less inhibited

## From drug use

- thought processes are disorganised
- sensations or perceptions are dulled or heightened
- memory impaired
- more/less/inappropriate emotional reactions
- distorted perception of time
- lack of self control

## Heightened awareness

- hyperfocus (selective attention)
- distorted perception of time
- extra sensitive perceptions

## Question 13

Marks	0	1	2	Average
%	35	36	29	1.0

His GSR reading will be higher than in a normal state. Increased sweat on the skin increases the electrical conductivity of the skin's surface, so the galvanometer will register a higher reading.

Many students answered the question as if they were referring to **any** altered state of consciousness, disregarding the fact that the question specified 'heightened arousal'.

## Question 14

Marks	0	1	2	3	Average
%	11	29	37	23	1.7

### EEG (electroencephalograph)

- Measure: Detects, amplifies and records electrical activity of the brain in the form of brainwaves.
- Explanation: NREM sleep is indicated by higher amplitude and lower frequency brainwaves, whereas REM sleep is indicated by lower amplitude and higher frequency brainwaves.

### EOG (electro-oculograph)

- Measure: Detects, amplifies and records electrical activity of the muscles near the eye.
- Explanation: A high level of electrical activity indicates REM sleep. A low level of electrical activity indicates NREM sleep

### EMG (electromyograph)

- Measure: Detects, amplifies and records electrical activity of the muscles in the body.
- Explanation: Very little or no activity indicates REM sleep. An increase in activity indicates NREM sleep.

### Video camera

- Measure: Detects and records movements of the body, or eye movements.



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- Explanation: Eye movement indicates REM sleep; no eye-movement indicates NREM sleep. Very little, or no, movement indicates REM sleep. An increase in movement indicates NREM sleep.

It was essential for students to refer to the fact that the ‘electro-’ devices measure **electrical activity**; they do not directly measure brain activity or muscle movement.

The EOG detects, amplifies and records electrical activity in muscles near the eye, orbital muscles or muscles responsible for eye movement. ‘Muscles **in** the eye’ or ‘muscles **of** the eye’ were not acceptable responses.

### Question 15a.

Marks	0	1	Average
%	57	43	<b>0.5</b>

Temporary, involuntary cessation of breathing during sleep, for 20 seconds to two minutes.

Simply stating that ‘the sleeper stops breathing for a period of time’ was not adequate; irregularity of the breathing pattern may be part of normal sleep. It is the cessation of breathing that **defines** sleep apnoea, the accompanying snoring or waking gasping for breath are the possible results of the apnoea.

### Question 15b.

Marks	0	1	2	Average
%	59	30	11	<b>0.5</b>

Any **two** of:

- breathing stops because the autonomic nervous system does not signal the body to breathe
- swelling of soft tissue in the upper throat constricts the airways
- certain illnesses (mumps, tonsillitis, etc.) causing blockage of the airways
- malformation of the jaw or trachea causing restricted air flow
- being overweight may contribute to fatty tissue blocking airways
- drinking too much alcohol leads to a build up of fatty tissue that can block airways.

A single word such as ‘obesity’ or ‘alcoholism’ was not considered to be an adequate identification of a possible cause.

### Question 16a.

Marks	0	1	2	Average
%	39	23	37	<b>1.0</b>

Name: placebo effect/participant expectations/Hawthorne effect

Definition: Participant expectations (or the placebo/Hawthorne effect) will influence individuals’ behaviour, meaning that the independent variable will not be the only variable influencing the value of the dependent variable.

Many students did not achieve marks for this question because they answered as if the participants were **unaware** of the group to which they had been allocated.

### Question 16b.

Marks	0	1	Average
%	73	27	<b>0.3</b>

Deception is allowed when:

- the research proposal has been approved by the ethics committee of the research institution
- the value of the research is such that the deception is warranted
- appropriate debriefing and counselling procedures are in place to ensure there is no lasting psychological or physiological harm to participants.

It is strongly suggested that the role of ethics committees of research institutions is discussed in the course of Unit 3, as these are the bodies responsible for ensuring that the NHMRC ethical guidelines and the National Privacy Principles are universally and consistently applied.