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ASSESSMENT, STANDARDS
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Tasmanian Certificate of Education
External Assessment 2016

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PSYCHOLOGY

(BHP315116)

Time allowed for this paper

- Working time: 3 hours
- Plus 15 minutes recommended reading time

Pages:	16
Questions:	7

Candidate Instructions

1. You **MUST** make sure that your responses to the questions in this examination paper will show your achievement in the criteria being assessed.
2. There are **THREE** sections to this paper.
3. You must answer:
 - **ONE** question from **Section A**
 - **ONE** question from **Section B**
 - **ONE** question from **Section C**
4. Answer each section in a separate answer booklet.
5. The recommended time to be spent on a section is given in the instructions in that section.
6. All written responses must be in English.

On the basis of your performance in this examination, the examiners will provide results on each of the following criteria taken from the course statement:

Criterion 1 Analyse theories about individual differences.

Criterion 2 Analyse perspectives about psychobiological processes.

Criterion 4 Analyse theories about remembering.

Criterion 7 Use evidence to support a psychological point of view.

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SECTION A – Individual Differences

Answer **ONE** question from this section. You must answer **ALL** parts of the chosen question.

Use a separate answer booklet for this section.

It is recommended you spend approximately **60 minutes** on this section.

This section assesses **Criteria 1 and 7**.

Question 1 – Gender

Examine the following stimulus items:

Stimulus 1 – An intersex condition

Phoebe Hart says, 'I have a condition called androgen insensitivity syndrome (AIS). I look like a woman but I have male chromosomes. Basically, I started off in my mum's uterus as a boy, but my body didn't respond to testosterone so I developed along female lines. I have female genitalia but no uterus and I was born with internal testes.

'AIS is one of many intersex conditions. It's called that because there's a cross-over between male and female chromosomes or sexual organs. AIS is genetic and one of the more common ones, but it still only affects one in every 25,000 people.

'When I was 17 I had surgery to remove my internal testes. I now have to take hormone replacement therapy for the rest of my life. My advice to parents of intersex kids is to get as much information as you can and join a support group. If children are born with ambiguous genitalia, there's pressure to have surgery earlier on. That can be risky, because there's no informed consent. Sometimes it's worth waiting.'

(Source: Adapted from Graham, L. (2012, January 29). I'm proud to be a hermaphrodite.
Sunday Tasmanian, pp.46-47.)

Question 1 continues.

Question 1 (continued)

Stimulus 2 – Gender differences in maths test scores

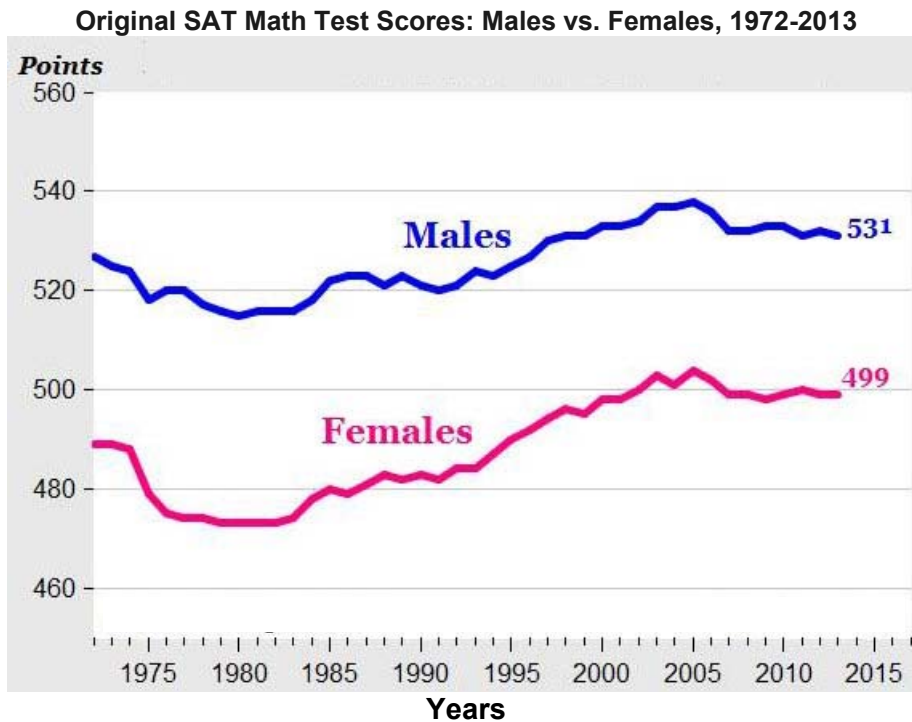


Figure 1: This graph shows the results of a standardised mathematics college entrance test (SAT) released by the College Board, USA in 2013.

(Source: Perry, M.J. (2013, September 26). SAT test results show that a huge math gender gap persists with a 32-point advantage for high school boys)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- (a) analyse and critically evaluate theories on the genetic and environmental factors influencing gender-related differences.
- (b) explain the following terms used in relation to individual differences in gender:
 - gender identity
 - gender roles
 - intersex condition

Section A (continued)

Question 2 – Intelligence

Examine the following stimulus items:

Stimulus 1 – Spearman's 'g' factor

A century ago, British psychologist Charles Spearman observed that individuals who do well on one mental test tend to do well on all of them, no matter how different the tests' aims, format or content. So, for example, your performance on a test of verbal ability predicts your score on one of mathematical aptitude, and vice versa.

Spearman reasoned that all tests must therefore tap into some deeper, general ability. He invented a statistical method called factor analysis to extract this common factor from the web of positive correlations among tests. This showed that tests mostly measure the very same thing, which he labeled the general factor of intelligence or 'g factor'. In essence, 'g' equates to an individual's ability to deal with cognitive complexity.

Spearman's discovery lay neglected in the U.S. until the 1970s, when psychologist Arthur Jensen began systematically testing competing ideas about 'g'. He found that 'g' lines up with diverse features of the brain, from relative size to processing speed. He found that in all human groups, most cognitive variation comes from variation in 'g'.

(Source: Gottfredson, L. (2011, July 2). Intelligence: Instant Expert. *New Scientist*, 13:ii)

Section A (continued)

Stimulus 2 – Sternberg's Triarchic Theory

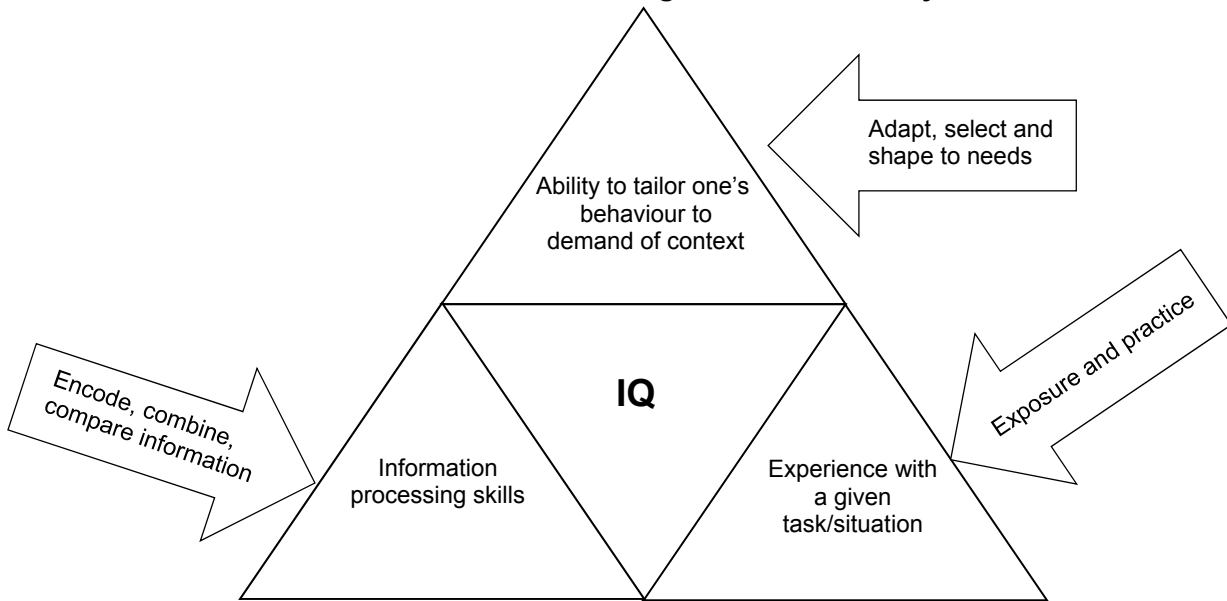


Figure 2: The above diagram shows Sternberg's triarchic theory of intelligence.

(Source: <https://www.studyblue.com/notes/n/chapter-11-intelligence/deck/6212233>)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- (a) analyse and critically evaluate theories on the genetic and environmental factors influencing individual differences in intelligence.
- (b) explain the following terms used in relation to individual differences in intelligence:
- intelligence
 - heritability
 - Spearman's 'g' factor

Section A continues.

Section A (continued)

Question 3 – Personality

Examine the following stimulus items:

Stimulus 1 – Some approaches to personality

According to theorists such as B.F. Skinner, personality is a collection of learned behaviour patterns. These theorists consider that similarities in people's responses across different situations are caused by similar patterns of reinforcement that have been received in such situations in the past. Such a theorist would say that if I am sociable both at parties and at meetings, it is because I have been reinforced for displaying social behaviours – not because I am fulfilling an unconscious wish based on experiences during my childhood or because I have an inherent trait of sociability.

On the other hand, social cognitive approaches to personality emphasise the influence of cognition – thoughts, feelings, expectations and values – as well as observation of others' behaviour, on personality. Compared with other learning theories of personality, social cognitive approaches are distinctive in their emphasis on the particular relationship between individuals and their environment. Not only is the environment assumed to affect personality, but people's behaviour and personalities are also assumed to 'feed back' and modify the environment.

(Source: Adapted from: Feldman, R.S. (2008). *Understanding Psychology* (8th ed.) Boston: McGraw Hill, pp. 466-467)

Stimulus 2 – Comparison of correlations of twins reared together and apart for selected personality traits

	Twins reared together		Twins reared apart	
	Identical twin correlation	Fraternal twin correlation	Identical twin correlation	Fraternal twin correlation
Anxiety proneness	.52	.24	.61	.27
Aggression	.43	.14	.46	.06
Alienation	.55	.38	.55	.38
Impulse control	.41	.06	.50	.03
Emotional well-being	.58	.23	.48	.18
Traditionalism	.50	.47	.53	.39
Achievement orientation	.36	.07	.36	.07

Table 1: This table shows the results of a study examining personality traits of identical twins raised together and fraternal twins who were either both male or both female

(Source: based on data from Tellegen et al., 1988, cited in Lilienfeld, S.O., Lynn, S.J., Namy, L.L. and Woolf, N.J. (2014) *Understanding Psychology: From Inquiry to Understanding* (3rd ed.) Boston: Pearson, p. 544)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- analyse and critically evaluate theories on the genetic and environmental factors influencing individual differences in personality.
- explain the following terms used in relation to individual differences in personality:
 - personality
 - heritability
 - trait theories

SECTION B – Psychobiological Processes

Answer **ONE** question from this section. You must answer **ALL** parts of the chosen question.

Use a separate answer booklet for this section.

It is recommended you spend approximately **60 minutes** on this section.

This section assesses **Criteria 2 and 7**.

Question 4 – Visual Perception

Examine the following stimulus items:

Stimulus 1 – Interesting figures



Figure 3: In this visual illusion, many people find that lines of identical length appear to be different when opposite-facing arrows are added to the lines.

(Source: io9@gizmodo.com)

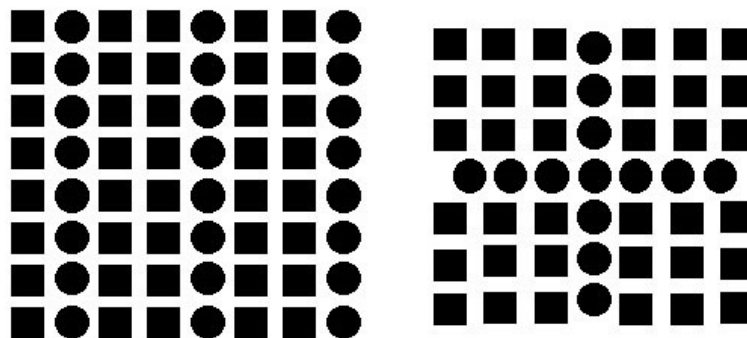


Figure 4: This figure illustrates one of the Gestalt principles of perception.

(Source: <http://www.nikkiarnell.net>)

Question 4 continues.

Question 4 (continued)

Stimulus 2 – How do we perceive the world?

Psychologist Richard Gregory (1970) argued that perception is a constructive process which relies on top-down processing. According to Gregory, perception is a hypothesis that is based on prior knowledge. In this way we are actively constructing our perception of reality based on our environment and stored information. Therefore, the brain has to guess what a person sees based on past experiences. The formation of incorrect hypotheses will lead to errors of perception.

Theorists like Gregory frequently use the example of size constancy to support their explanations. That is, we correctly perceive the size of an object even though the retinal image of an object shrinks as the object recedes.

James Gibson (1966) argued that perception is direct, and not subject to hypothesis testing as Gregory proposed. Gibson (1972) argued that perception is a bottom-up process, which means that sensory information is analysed in one direction: from simple analysis of raw sensory data to ever increasing complexity of analysis through the visual system.

(Source: Adapted from McLeod, S. (2007) Visual Perception Theory.
<http://www.simplypsychology.org/perception-theories.html>)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- (a) argue a well-reasoned and coherent point of view explaining the process of perception and the role of Gestalt principles.
- (b) explain and critically evaluate psychological explanations of:
 - how perception of visual illusions may occur
 - bottom-up and top-down processing

Section B continues.

Section B (continued)

Question 5 – Consciousness

Examine the following stimulus items:

Stimulus 1 – Stages of sleep

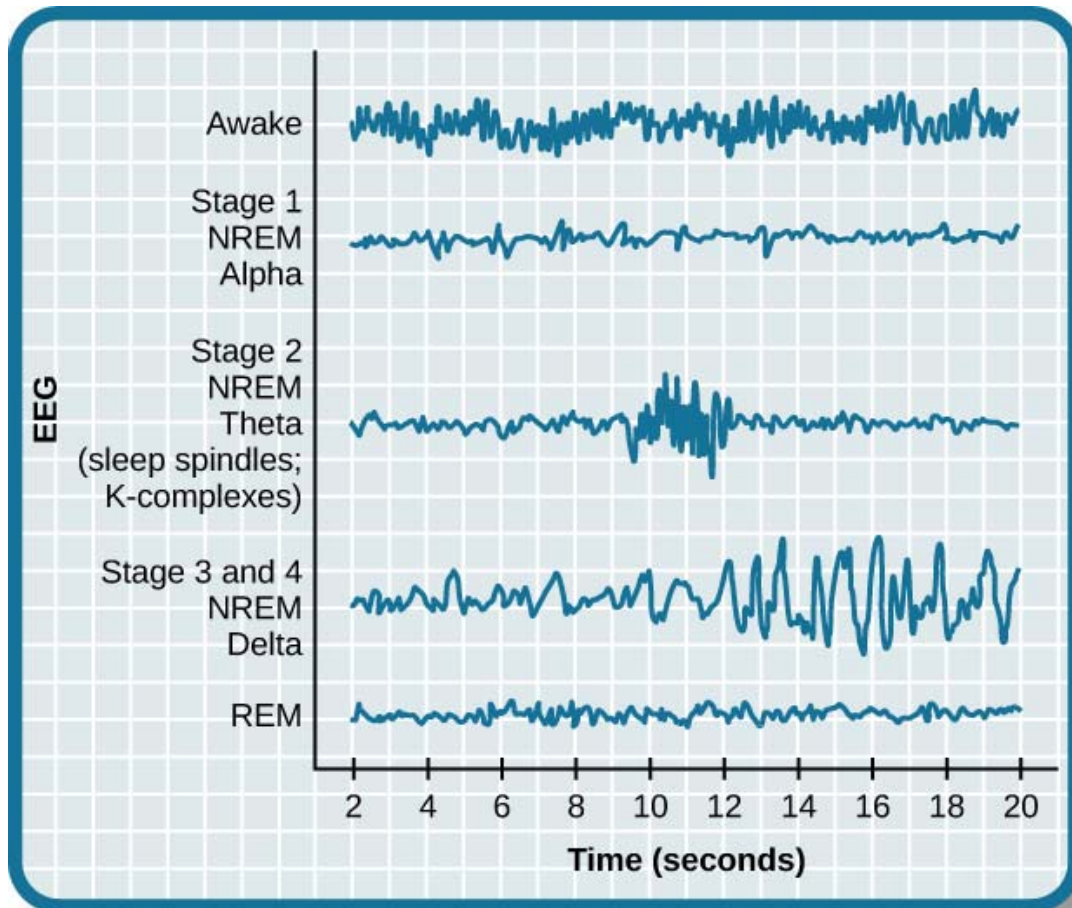


Figure 5: This graph shows how brainwave activity changes across the different stages of sleep

Source: (Haas, A. *Introduction to Psychology* [online version] <http://cnx.org>)

Question 5 (continued)

Stimulus 2 – Researching sleep

Beginning at birth and continuing through old age, there is a gradual change in the total time we spend sleeping, the percentage of time we spend in REM sleep, and the kinds of sleep problems we experience. Researchers recently found that, compared with adults, adolescents need more sleep (almost ten hours per night) and their circadian 'clocks' favour going to bed later and getting up later.

We know that sleep is important to humans. So far, the longest a human has voluntarily gone without sleep is eleven days. Two theories explaining the human need for sleep are the repair theory and the adaptive theory.

One method of investigating why sleep is important is to study people who are sleep deprived. Sleep deprivation can cause irritability and unhappiness. It can also interfere with tasks that require vigilance and concentration, such as recalling and recognising words and doing maths tests (Drummond, 2000). Various degrees of sleep deprivation cause moodiness and hallucinations, interfere with cognitive performance and deplete the brain's vital energy stores.

(Source: Adapted from Plotnik, R. (2005). *Introduction to Psychology* (7th ed.). Belmont, CA: Wadsworth Thomson Learning, pp. 156 -157)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- (a) argue a well-reasoned and coherent point of view explaining how sleep differs from normal waking consciousness.
- (b) explain and critically evaluate the following theories on the purposes of sleep:
 - survival (adaptive/evolutionary) theory
 - restoration (repair) theory

SECTION C – Remembering

Answer **ONE** question from this section. You must answer **ALL** parts of the chosen question.

Use a separate answer booklet for this section.

It is recommended you spend approximately **60 minutes** on this section.

This section assesses **Criteria 4 and 7**.

Question 6 – Memory

Examine the following stimulus items:

Stimulus 1 – A network of associations

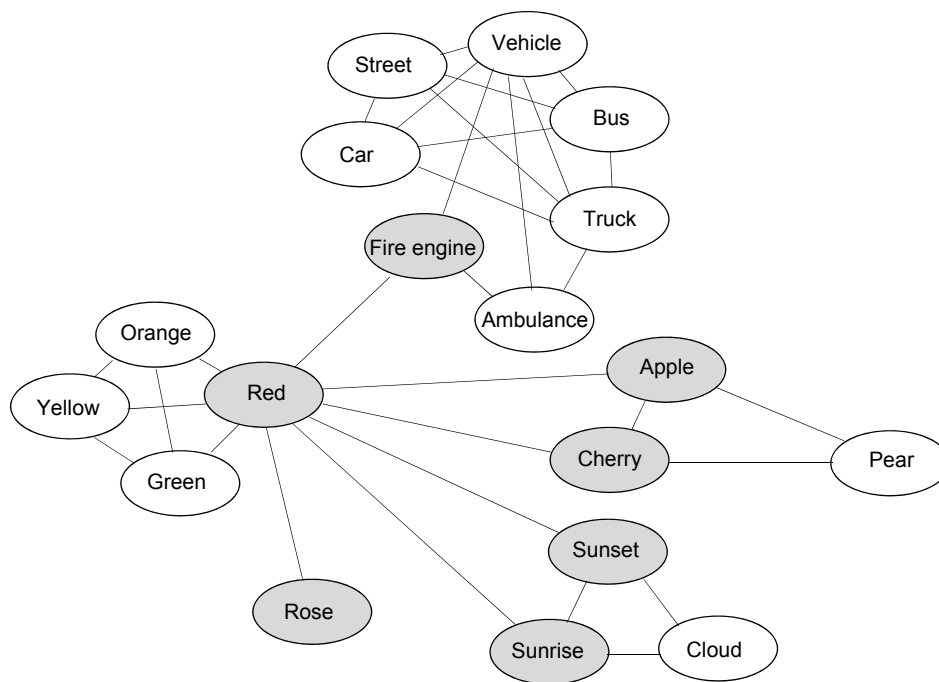


Figure 6: This diagram shows a semantic network of concepts in long term memory.

(Source: Gazzaniga, M.S., Heatherton, T.F. and Halpern, D.F. (2010)
Psychological Science (3rd ed.) New York: W.W Norton & Company, p. 302)

Question 6 continues.

Question 6 (continued)

Stimulus 2 – Retaining information

The human brain provides the storage system for encoded memory information. However, duration and capacity in the human memory system vary. Human memory requires us to pay attention to information entering our memory system, otherwise it drops out of the process and is lost. Because so much information enters our memory, we cannot attend to it all, so we must be selective. When we focus only on a selected portion of sensory input, we are practising selective attention.

Selective attention is an automatic process that allows us to attend to some information entering our memory system (usually the most important and interesting), and to ignore the rest. Selective attention controls what information moves on for further processing. It acts as a filter that lets only certain types of information through, meaning potentially useless or distracting information is ignored. This may be why it is difficult to listen to two people speaking at once: typically, you can ‘tune in’ to one person or the other, but not to both (Reed, 1996).

(Source: Adapted from van Iersel, Bradley, Coon, Houlihan, Koerner, Montalto, Rossborough and Stone (2005). *Nelson Psychology: VCE Units 3 and 4*. Southbank: Thomson Nelson, p.198)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- (a) analyse and critically evaluate at least two theories explaining the processes of storing, retaining and retrieving information in memory.
- (b) explain how the following concepts relate to the study of memory:
 - declarative memory
 - semantic network theory
 - encoding

Section B continues.

Section B (continued)

Question 7 – Forgetting

Examine the following stimulus items:

Stimulus 1 – A forgetting curve

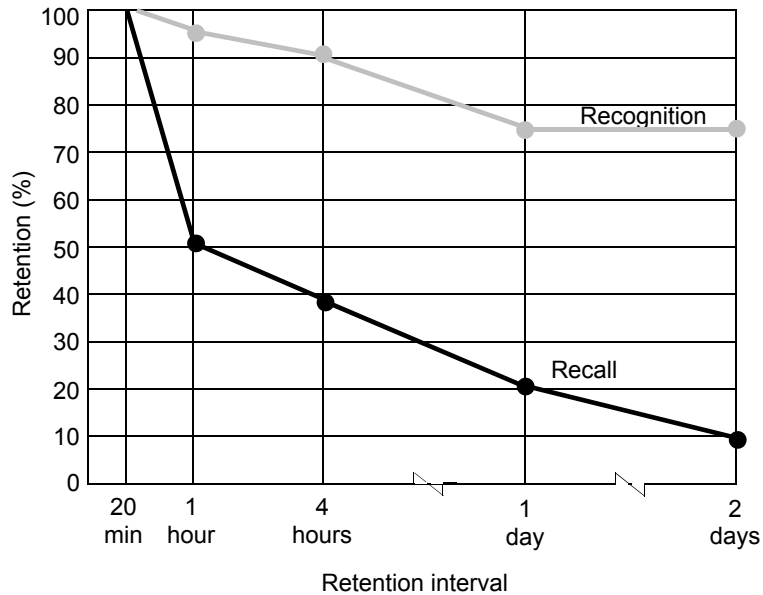


Figure 7: This shows the results of an experiment by Luh (1922) in which participants memorised lists of nonsense syllables. Then Luh measured participants' retention of the syllables with either a recognition test or a recall test at various intervals up to two days

(Source: Weiten, W. (2004). *Psychology Themes and Variations*. (6th ed.). Belmont, CA: Wadsworth, p. 280)

Question 7 continues.

Question 7 (continued)

Stimulus 2 – What is Alzheimer's disease?

Alzheimer's disease is a permanent, progressive and debilitating form of dementia that results from organic brain decay. It involves a serious and permanent loss of intellectual capacity that results in confusion and loss of memory, particularly episodic and semantic memories. Researchers suspect that Alzheimer's is caused by unusual webs and tangles in brain cells that lead to and from the hippocampus, a brain structure important for learning and memory (Nagy, Esiri, Jobst & Morris, 1996).

Alzheimer's disease does not automatically result from normal ageing. However, it is considered to be an age-related disorder, meaning that the older you become, the greater your risk of developing the disease.

Alzheimer's sufferers at first have difficulty remembering recent events. Slowly they become more disoriented and confused, and have difficulty performing everyday tasks. Sufferers of Alzheimer's disease experience retrograde and anterograde amnesia.

(Source: Adapted from van Iersel, Bradley, Coon, Houlihan, Koerner, Montalto, Rossborough and Stone (2005).
Nelson Psychology: VCE Units 3 and 4. Southbank: Thomson Nelson, pp. 256-257)

Use the information presented in Stimulus 1 and Stimulus 2, as well as other relevant information, to:

- (a) analyse and critically evaluate organic and non-organic explanations of how forgetting may occur.
- (b) explain how the following concepts relate to the study of forgetting:
 - retention
 - Alzheimer's disease
 - memory decline over the lifespan



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