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 3**  Use evidence to support a psychological view.

**Criterion 4**  Analyse and evaluate ideas and information related to Psychology.

**Criterion 5**  Display knowledge and understanding of psychological concepts and ideas.
CANDIDATE INSTRUCTIONS

You **MUST** ensure that you have addressed **ALL** of the externally assessed criteria on this examination paper.

You must answer a total of **THREE** questions, **ONE** question from each section.

You must answer each question in a separate answer booklet.

All written responses must be in English.
Answer **ONE** question from this section. You must answer **ALL** parts of the chosen question.

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

Use a separate answer booklet for this section.

This section assesses **Criteria 3 and 5**.

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**Question 1 – Remembering**

Examine the following stimulus items:

**Stimulus 1 – Levels of Processing Theory**

Craik and Lockhart (1972) proposed the Levels of Processing theory to explain how information is stored in memory. Evidence supporting this model includes the results of a study by Hyde and Jenkins (1969), in which subjects were asked to analyse lists of words. Some subjects were asked to analyse surface features, for example, whether the word contained the letter ‘e’. Other subjects were asked to analyse deeper features – to think about the word and decide how pleasant or unpleasant they found it.

![Mean number of words recalled](image_url)

Mean number of words recalled after performing tasks that required shallow or deep processing.


*Question 1 continues opposite.*
Question 1 (continued)

Stimulus 2 – Retrieving Memories

Perhaps recall of names and other memories is not perfect because there is so much information stored in long-term memory. Many psychologists have suggested that the material that makes its way to long-term memory is relatively permanent (Tulving & Psotka, 1971). If they are correct, the capacity of long-term memory is vast. For instance, if you are like the average college student, your vocabulary includes approximately 50,000 words, you know hundreds of mathematical ‘facts’ and you are able to recall images – such as the way your childhood home looked – with no trouble at all.

How do we sort through this vast array of material and retrieve specific information at the appropriate time? One way is through retrieval cues. A retrieval cue is a stimulus that allows us to recall more easily information that is in long-term memory (Ratcliff & McKoon, 1989). It may be a word, a smell, an emotion, or a sound; whatever the specific cue, a memory will suddenly come to mind when the retrieval cue is present. For example, the smell of roasting turkey may evoke memories of family gatherings (Schab & Crowder, 1995).

Retrieval cues guide people through the information stored in long-term memory. They are particularly important when we are making an effort to recall information, as opposed to being asked to recognize material stored in memory. Recognition is generally a much easier task than recall.


(a) Referring to the above stimuli and other relevant information, demonstrate your knowledge and understanding of the following concepts:

• Levels of Processing model
• Long term memory
• Retrieval

(b) Provide evidence which explains the processes involved in storing information in memory.

Section A continues over the page.
Question 2 – Forgetting

Examine the following stimulus items:

Stimulus 1 – A Forgetting Curve

This graph shows students’ performances on a foreign language reading comprehension test. Students took the test at intervals after they had finished a language course in high school or college. The scores of students who had earned the top score of ‘A’ in the course are shown in blue. The scores of students who earned a pass grade of ‘C’ in the course are shown in dark red. (Bahrick, 1984).

Stimulus 2 – Motivated Forgetting

One cause of forgetting is motivated forgetting, or forgetting for a reason. People often explicitly instruct themselves or others to forget, for example when a person stops in the middle of a sentence and says, ‘Oops – forget that. That’s the wrong address. The right one is ...’ (Bjork & Bjork, 1996). At other times the intention to forget is implicit, for example, when a person who parks her car in a different parking space every day forgets where she parked the day before, so it does not interfere with memory of where she parked today (Bjork, Bjork & Anderson, 1998).

Experimental evidence suggests that motivated forgetting requires actively suppressing the forgotten information. Researchers have demonstrated this by directing participants to learn a list of words. Half way through the learning time the participants are told to forget the words they just learned and remember only the last part of the list. This procedure reduces recall for the words in the first part of the list and decreases proactive interference from them, so that participants can more easily remember words in the last part of the list.

Other studies show that instructing a person not to think about something can effectively keep the information from consciousness. However, deliberately suppressing information in this way creates an automatic, unconscious process that ‘watches out’ for the information and keeps it available (Wagner, 1992). For example, when people are instructed to suppress an exciting thought, they remain just as aroused as participants who are instructed to think about the exciting thought (Wegner, Short, Blake & Page, 1990).


(a) Referring to the above stimuli and other relevant information, demonstrate your knowledge and understanding of the following concepts:

• Forgetting curve
• Motivated forgetting
• Interference

(b) Provide evidence for at least three causes of forgetting.
Question 3 – Perception

Examine the following stimulus items:

Stimulus 1 – Bottom-up and Top-down Processes

When you identify an object, you must match what you see to your stored knowledge. Taking sensory data in from the environment and sending it toward the brain for analysis of relevant information is called bottom-up processing.

However, in many cases you can use information you already have about the environment to help you make a perceptual identification. When your expectations affect perception, the phenomenon is called top-down processing. With top-down processing, higher mental functioning influences how you understand objects and events.

The importance of top-down processing can be illustrated by drawings known as ‘droodles’. Without the labels, these drawings are meaningless. However, once the drawings are identified, you can easily find meaning in them. Examples of ‘droodles’ are shown below.

Droodles – What are these animals? Do you see in (A) an early bird who caught a very strong worm and in (B) a giraffe’s neck? Each figure can be seen as representing something familiar to you, although this perceptual recognition does not occur until some identifying information is provided.

Stimulus 2 – Perceiving Shapes

Gestalt principles of visual perception refer to the ways in which humans organise the elements of our visual field by grouping them into the perception of a whole, complete form, usually in the simplest possible way. One of the Gestalt principles is closure. Gestalt principles such as closure are often used by graphic artists and advertising consultants to create distinctive signs, logos and other designs such as the one below.

![The panda](http://graphicdesign.spokanefalls.edu)

(a) Referring to the above stimuli and other evidence, explain how visual perception involves organising and interpreting sensations into meaningful patterns.

(b) Analyse and evaluate evidence which is used to explain how an individual’s perception may be influenced by perceptual set.

Section B continues over the page.
Section B (continued)

Question 4 – Consciousness

Examine the following stimulus items:

Stimulus 1 – Electrophysiological Activity During Sleep

- **Awake**
- **REM Sleep**
- **Stage 1**
- **Stage 2**
- **Stage 3**
- **Stage 4**

This figure represents EEG recordings during wakefulness and during the various stages of sleep. The Awake Stage (relaxed with eyes closed) is characterised by alpha waves (8 – 12 hertz). Stage 1 is basically a transition from wakefulness to the deeper stages of sleep. Stage 2 is defined by the presence of sleep spindles (brief bursts of 12 – 16 hertz waves) and K-complexes (a sharp rise and fall in the brain-wave pattern). Stages 3 and 4 are marked by the presence of delta waves (1 – 2 hertz), and the only difference between these two stages is the amount of delta waves found. Stage 3 is scored when 20% to 50% of the record contains delta waves, and Stage 4 when the percentage of delta waves is 50% or more.


Question 4 continues opposite.
Question 4 (continued)

**Stimulus 2 – Dreams: The Balm for Bad Memories**

Whether they’re pleasant or painful, all dreams are good for us. The act of dreaming is a kind of therapy, helping us process bad memories and cope in the real world, according to a new study.

Sleep researchers at the University of California, Berkeley, have found that, during the rapid eye movement stage of sleep, there is a sharp decrease in levels of norepinephrine, a brain chemical associated with stress. This creates a safe environment in which to process memories, allowing us to move on.

In the study, a series of brain scans were done on people who experienced an emotional event. The results showed that our brains are significantly less active when reminded of recent emotional experiences after a night’s sleep.

However, the sleep researchers say dreams often do not have the same soothing effect for people with post-traumatic stress disorder (PTSD), which explains why they suffer recurring nightmares. Sleep patterns (and levels of norepinephrine) are disrupted in people with PTSD, as well as in some people with depression.

(Source: *Sunday Tasmanian*, 2011, December 11, p. 34)

(a) Referring to the above stimuli and other evidence, explain how sleep and dreaming differ from normal waking consciousness.

(b) Analyse and evaluate two theories which explain the purposes of sleep, referring to relevant evidence and examples.
SECTION C – INDIVIDUAL DIFFERENCES

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

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

Use a separate answer booklet for this section.

This section assesses Criteria 4 and 5.

Question 5 – Gender

Examine the following stimulus items:

Stimulus 1 – Gender Differences

Do differences between male and female brains underlie sex and gender differences? This question has been put forward by some psychologists studying brain structure and functioning.

Evidence comes from the study of some girls who were exposed before birth to unusually high levels of androgen, a male hormone, because their mothers accidentally took a drug containing that hormone while pregnant. These girls preferred different toys from those preferred by girls who were not exposed to excess androgen. Specifically, the girls exposed to the excess male hormone were more likely to play with toys that are stereotypically preferred by boys (such as cars) and less likely to play with toys stereotypically associated with girls (such as dolls). One possibility is that exposure to the male hormone may have affected the development of these girls’ brains, making them favour toys that involve certain kinds of skills such as those related to spatial abilities (Hines et al., 2002).

Social factors also play a part in determining gender differences. From the moment of birth, most parents and other adults provide environments that differ in important respects according to gender. For example, boys and girls are given different kinds of toys. Parents also interact with their children differently, depending on their sex. Fathers play more roughly with their baby sons than with their baby daughters. Middle-class mothers tend to talk more to their daughters than to their sons. It is clear that adults frequently treat children differently on the basis of gender (Tenenbaum and Leaper, 2002).


Question 5 continues opposite.
Question 5 (continued)

Stimulus 2 – A ‘gender-neutral’ Pre-school

Some have called it ‘gender madness’, but the Egalia pre-school says its goal is to free children from social expectations based on their sex. On the surface, the school seems like any other. But listen carefully and you’ll notice a big difference. The teachers avoid using the pronouns ‘him’ and ‘her’ when talking to the children. Instead they refer to them as ‘friends’ or by their first names. The books have been carefully selected to avoid traditional presentations of gender and parenting roles.

Most of the usual toys and games are there — dolls, tractors, sand pits, and so on — but they are placed deliberately side-by-side to encourage a child to play with whatever he or she chooses. For the director of the pre-school, it is all about giving children a wider choice, and not limiting them to social expectations based on gender.

However, the pre-school has come in for quite a lot of criticism. British-based clinical psychologist Linda Blair says: ‘Between the ages of three and about seven, the child is searching for their identity, and part of their identity is their gender, you can’t deny that.’


(a) Referring to the above stimuli and other relevant information, demonstrate your knowledge and understanding of the following concepts:

• Sexual identity
• Gender identity
• Environmental influences on gender

(b) Describe biological influences on gender. Analyse and evaluate these influences with reference to alternative explanations and research studies.
Section C (continued)

Question 6 – Intelligence

Examine the following stimulus items:

Stimulus 1 – What is Intelligence?

Classical pianist David Helfgott demonstrated extraordinary talent as a pianist from the very young age of five. At age 19 Helfgott won a bursary to study at the Royal College of Music in London. The future seemed bright for the extremely gifted young musician, but the years he spent studying in London also saw the emergence of the first signs of what would become a debilitating mental illness. He returned to Australia where his condition worsened and he spent years in a local mental hospital. He was eventually released from hospital, but his ability to function in mainstream society was impaired by his mental illness. His speech pattern was difficult to understand, he showered many times a day and he neglected his own health.

Yet Helfgott’s abilities as a pianist were unaffected by his mental illness. He could remember and play many of the most difficult piano arrangements ever written. He returned to the concert stage and performed to sell-out audiences around the world.

David Helfgott’s case points to a number of questions that are central to understanding intelligence. First, what is intelligence? Can a man who can barely speak coherently but can play classical piano pieces flawlessly be described as intelligent? Second, how can we measure intelligence, and how accurate are commonly used measures? David Helfgott would score very poorly on IQ tests, yet he maintains a sense of humour as well as other capacities reflecting intelligent thinking. Third, is intelligence a broad trait that cuts across most areas of a person’s life, or do people possess different kinds of intelligence, such as one that facilitates verbal conversation and another that allows a person’s fingers to dance across the piano keys?


Question 6 continues opposite.
Question 6 (continued)

Stimulus 2 – The relationships among Heredity, Environment and IQ

This chart shows evidence for the contribution of heredity and environment to IQ scores. There are similar IQs for fathers and sons (influence of heredity), but the IQs of both fathers and sons are related to social class (influence of environment).


(a) Referring to the above stimuli and other relevant information, demonstrate your knowledge and understanding of the following concepts:

• Intelligence
• Heredity
• Environmental influences on intelligence

(b) Describe biological influences on intelligence. Analyse and evaluate these influences with reference to alternative explanations and research studies.

Section C continues over the page.
Section C (continued)

Question 7 – Personality

Examine the following stimulus items:

**Stimulus 1 – Describing Personality**

The two big questions about personality are: why do people have different personality types? What is the best way to describe these?

When it comes to the origins of personality, we have learned a lot. We now know that personality traits are greatly influenced by the interactions between the set of gene variants that people happen to have been born with and the social environment people happen to grow up in. The gene variants a person inherits favour certain behavioural tendencies, such as assertiveness or cautiousness, while their environmental circumstances influence the forms these innate behavioural tendencies take. The ongoing dialogue between the person’s genome* and the environment gradually establishes the enduring ways of thinking and feeling that are the building blocks of personality.

We have also learned a lot about the second big question: how to describe personality differences. We now think of every personality as a unique blend of components. To use these discoveries to assess a specific person, it is useful to organise what we know about them into four sets of components: dispositional traits, troublesome patterns, character strengths and sense of identity. Bringing these together is the best way to build a descriptive picture of someone’s personality.

(Source: Adapted from Barondes, S. (2011, August 13). ‘How to size up the people in your life’. *New Scientist*, pp. 28 – 29.)

*genome – The full genetic complement of an organism

Question 7 continues opposite.
Question 7 (continued)

Stimulus 2 – Causes of Personality Traits

(a) Referring to the above stimuli and other relevant information, demonstrate your knowledge and understanding of the following concepts:

- Personality types
- Genetic endowment
- Environmental influences on personality

(b) Describe biological influences on personality. Analyse and evaluate these influences with reference to alternative explanations and research studies.