VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

Victorian Certificate of Education 2003

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

										Letter
Figures										
Words										

PSYCHOLOGY
Written examination 1

Tuesday 10 June 2003

Reading time: 9.00 am to 9.15 am (15 minutes)
Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

QUESTION AND ANSWER BOOK

Structure of book

Section	*Area of study*	*Number of questions*	*Number of questions to be answered*	*Number of marks*
A	1. Biological bases of behaviour	15	15	15
	2. Visual perception	15	15	15
	3. States of consciousness	15	15	15
B	1. Biological bases of behaviour	6	6	15
	2. Visual perception	6	6	15
	3. States of consciousness	6	6	15
				Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied
- Question and answer book of 21 pages.
- Answer sheet for multiple-choice questions.

Instructions
- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination
- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other electronic communication devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

There are 15 questions for each of the three areas of study.

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

A correct answer scores 1, an incorrect answer scores 0. Marks will not be deducted for incorrect answers. No mark will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – Biological bases of behaviour

Question 1

The central nervous system is mostly made up of cells called

A. interneurons.

B. motor neurons.

C. sensory neurons.

D. afferent neurons.

Question 2

Which of the following statements about neurons is correct?

A. afferent neurons make the connection between motor and sensory neurons

B. efferent neurons make the connection between motor and sensory neurons

C. afferent neurons carry information from the sensory organs to the central nervous system

D. efferent neurons carry information from the sensory organs to the central nervous system

Use the following information to answer Questions 3, 4 and 5.

While Madison was repairing a roof she fell eight metres to the ground. As a result of the fall, Madison now has trouble understanding and remembering what her customers say to her.

Question 3

The lobe of the brain most likely affected in this case is the

A. frontal lobe.

B. parietal lobe.

C. occipital lobe.

D. temporal lobe.

Question 4

If Madison had become more argumentative, was unable to order the right amounts of tiles or roofing nails, and made inappropriate remarks to her customers, the lobe of the brain most likely affected would be the

A. frontal lobe.

B. parietal lobe.

C. occipital lobe.

D. temporal lobe.

Question 5

If Madison had lost the ability to process visual information, the lobe of the brain most likely affected would be the

A. frontal lobe.
B. parietal lobe.
C. occipital lobe.
D. temporal lobe.

Question 6

Merv had a stroke. After the stroke he complained of loss of feeling to touch in his right hand.

The area of the brain that is most likely to be damaged is

A. the left motor cortex.
B. the right motor cortex.
C. the left somatosensory cortex.
D. the right somatosensory cortex.

Question 7

Reflexes happen at the level of the

A. spinal cord.
B. parietal lobe.
C. hypothalamus.
D. cerebral cortex.

Question 8

You have just been stung by a bee.

Which division of the peripheral nervous system transmits the pain associated with the sting to the central nervous system?

A. parasympathetic
B. sympathetic
C. autonomic
D. somatic

Question 9

When the sympathetic nervous system is activated, which of the following changes occur in the body?

A. the blood pressure decreases and the pupils dilate
B. the blood pressure increases and the pupils dilate
C. the blood pressure decreases and the pupils contract
D. the blood pressure increases and the pupils contract

Question 10

The autonomic nervous system is responsible for

A. the movement of skeletal muscles.
B. the functioning of internal organs.
C. receiving sensory information.
D. receiving motor information.

Use the following information to answer Questions 11 and 12.

Justin was visiting the local zoo where there are some open areas. As he entered the wildlife section, he noticed a goose hissing and running towards him. He immediately ran from the enclosure as fast as he could. He noticed his heart rate had increased rapidly as he was running. When he left the enclosure, he found a seat and had a rest.

Question 11

Justin's response can best be described as the

A. general adaptation response.

B. somatic nervous response.

C. somatic motor response.

D. fight/flight response.

Question 12

While Justin was resting, the _____ was operating, whereas his immediate reaction of running away indicated that the _____ was operating.

A. peripheral nervous system; central nervous system

B. central nervous system; peripheral nervous system

C. parasympathetic nervous system; sympathetic nervous system

D. sympathetic nervous system; parasympathetic nervous system

Question 13

A serious problem with the use of the polygraph as a 'lie detector' is that

A. guilt, anxiety and fear have a similar physiological signal.

B. there is a single physiological change that accompanies a lie.

C. the physiological signs of guilt and anxiety can be clearly distinguished.

D. questions not related to the 'crime' will produce strong arousal response.

Use the following information to answer Questions 14 and 15.

Donna has had a great deal of pressure at work over the last six months. When she was first promoted to her new position, she became quite overwhelmed by her new responsibilities and felt quite weak and nearly fainted. Nonetheless, she managed to complete the tasks on time but developed a backache and occasional dizziness. After she finished the final report she became extremely tired, anxious and depressed.

Question 14

Donna's situation is often referred to as the _____. When she felt weak and nearly fainted she was showing the _____.

A. fight/flight response; alarm reaction

B. General Adaptation Syndrome; alarm reaction

C. Nervous Adaptation Syndrome; stage of resistance

D. General Adaptation Syndrome; stage of exhaustion

Question 15

When Donna's immune system attempted to cope with her stressful situation, what stage of the syndrome was she in?

A. shock

B. resistance

C. exhaustion

D. fight/flight

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AREA OF STUDY 2 – Visual perception

Question 16

A low intensity stimulus, for example a candle flame seen from approximately 50 kilometres away on a very clear, dark night, can be detected 50% of the time.

In this situation, which of the following thresholds has been established?

A. absolute threshold
B. receptor threshold
C. stimulus threshold
D. difference threshold

Question 17

Master Chef Gilbert Wong, of the Floral Bongo Restaurant, is making a 40 litre pot of Tom Yam soup (a hot and sour Thai soup). He can tell the difference when the soup has five teaspoons of lime juice as compared to when it has six teaspoons of the juice in it.

Gilbert's skill is an example of the

A. absolute threshold.
B. receptor threshold.
C. stimulus threshold.
D. difference threshold.

Question 18

The process of transduction takes place in the

A. photoreceptors.
B. optic nerve.
C. pupil.
D. lens.

Question 19

Which of the following statements is true about visual receptor cells?

A. there are more cones than rods
B. rods operate best in bright light
C. rods assist mainly in peripheral vision
D. cones only detect black and white images

Question 20

As light travels through the eye, it must pass, in order, through which of the following sequence of structures?

A. lens--------pupil------retina-----cornea
B. cornea-----pupil------lens--------retina
C. iris---------lens-------pupil------retina
D. cornea-----lens-------pupil------retina

Question 21

Which of the following statements about the process of dark adaptation is correct?

When a person enters a darkened room

A. rods and cones adapt by decreasing their sensitivity to light.

B. rods and cones adapt by increasing their sensitivity to light.

C. both rods and cones adapt to the darkened condition at about the same rate.

D. rods adapt faster to the darkened condition than cones.

Question 22

The moon is said to appear larger on the horizon than at its zenith because it is claimed that

A. it is closer at the zenith.

B. it is further away at its zenith.

C. there are no depth cues in the sky.

D. it is difficult to judge depth in the dark.

Question 23

The binocular depth cue, derived from inward movement of the eyes as an object comes closer, is known as

A. convergence.

B. retinal disparity.

C. accommodation.

D. linear perspective.

Question 24

Our tendency to perceive objects which produce a larger image on the retina as closer, and objects that produce a smaller image on the retina as more distant, is due to the depth cue of _____. This cue can fail in situations where _____.

A. relative size; the objects are unfamiliar

B. relative size; the objects are too far apart

C. linear perspective; the objects are unfamiliar

D. linear perspective; the objects are too far apart

Question 25

Fred watched his father drive his new white car into the shade of the carport. Fred still perceived the car as being the same intensity of 'whiteness' even though it was now in the shade.

This is an instance of

A. interposition.

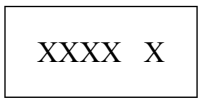
B. texture gradient.

C. brightness constancy.

D. orientation constancy.

Question 26

The Gestalt theory of perception would say that if we look at



and perceive 4 Xs and 1 X rather than 5 Xs, this effect is due to the grouping principle of

A. good continuation.
B. figure ground.
C. proximity.
D. closure.

Question 27

If the Gestalt principle of closure were too strong, then we would be unable to

A. see clear edges.
B. distinguish grey from cream.
C. separate figure from background.
D. tell the difference between a C and an O.

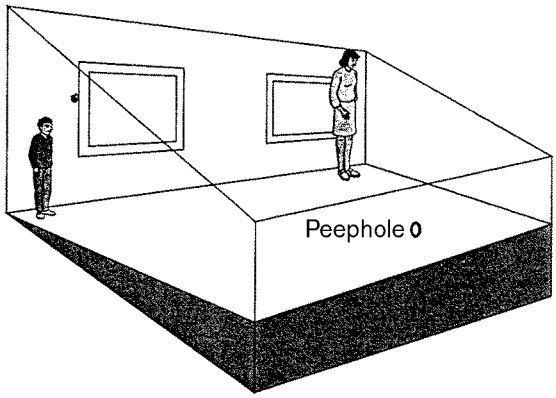
Question 28

Camouflage works because the principle of _____ is no longer operating.

A. good continuation
B. figure ground
C. proximity
D. closure

Use the following information to answer Questions 29 and 30.

In the Ames room people of the same height will appear to be of different heights.



Question 29

Which of the following statements is the best explanation of this phenomenon?

A. the two people produce the same size retinal image for the observer

B. the room is actually rectangular but appears to be a trapezoid shape

C. the two people are the same distance from the observer

D. the images of the two people at the eye are different

Question 30

The observer looking at the Ames room through the peephole is unable to use the depth cues of

A. convergence and accommodation.

B. convergence and retinal disparity.

C. retinal disparity and relative size.

D. relative size and convergence.

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AREA OF STUDY 3 – States of consciousness

Question 31

According to William James, our stream of consciousness can best be described as

A. a coherent series of personal thoughts, feelings and sensations.

B. an erratic sequence of personal thoughts, feelings and sensations.

C. a disjointed collection of personal thoughts, feelings and sensations.

D. a continuous and changing series of personal thoughts, feelings and sensations.

Question 32

Adrienne is completing a test. During the task, Adrienne has thoughts about the part-time work roster her employer changed recently, the party she is attending the next day and the prospect of getting her Learners Permit next week.

What is the best way of describing her state of consciousness?

A. normal waking consciousness

B. altered state of consciousness

C. focused state of consciousness

D. selective state of consciousness

Question 33

Ross is finding it difficult to go about his normal daily routine because he is in an altered state of consciousness.

This altered state of consciousness is characterised by

A. a distorted sense of time.

B. being more in control of emotions.

C. improved coordination of muscle movements.

D. thoughts being more structured and organised.

Question 34

Richard, a keen coffee drinker, is in the middle of making a cup of coffee when the phone rings. He answers the phone and is able to finish making his cup of coffee while talking to his friend on the speakerphone.

For Richard, making the cup of coffee can be considered

A. an automatic process; because it was completed with minimal awareness and did not interfere with the other task.

B. a controlled process; because it was completed with minimal awareness and did not interfere with the other task.

C. an automatic process; because it involved alert awareness and mental effort.

D. a controlled process; because it involved alert awareness and mental effort.

Question 35

Daydreams are similar to lucid dreams in that they both

A. occur during REM sleep.

B. occur during waking hours.

C. have a degree of conscious control.

D. are not experienced more than once per day.

Question 36

The restorative theory of sleep proposes that sleep

A. protects an organism from predators.

B. enables damaged cells to be repaired.

C. allows the organism to conserve energy.

D. occurs at particular times programmed by the brain.

Question 37

Studies of individuals involved in sleep deprivation generally report that changes to their ability to function in normal waking consciousness **start** to occur after about _____ days, and usually involve the inability to complete _____ tasks.

A. three; simple

B. ten; complex

C. ten; simple

D. three; complex

Question 38

Which of the following statements is most correct about a typical night's sleep?

A. periods of NREM sleep become more frequent as the night progresses

B. periods of REM sleep become less frequent as the night progresses

C. periods of NREM sleep become longer as the night progresses

D. periods of REM sleep become longer as the night progresses

Question 39

Delta waves are most commonly observed during which sleep stages?

A. 1 and 2

B. 2 and 3

C. 3 and 4

D. 4 and REM

Question 40

Which of the following statements about the experience and control of painful stimuli is correct?

A. Pain is an exclusively physiological process.

B. There are receptors for pain in every tissue of the body.

C. Pain control can be achieved by inducing altered states of consciousness.

D. The gate control theory of pain explains why meditation and hypnosis can alleviate pain.

Question 41

Evan quickly falls asleep not long after going to bed. Soon after, Evan's body suddenly jolts and he wakes up.

These body jolts are known as

A. hypnagogic hallucinations.

B. sleep paralysis.

C. hypnic jerks.

D. cataplexy.

Question 42

When we experience Stage 1 sleep, the emerging brain-wave patterns are likely to be _____ waves, which indicate _____ frequency and _____ amplitude.

A. alpha; high; low

B. delta; low; low

C. beta; high; high

D. theta; low; high

Question 43

In Stage 3 sleep, which of the following sleep events is least likely to occur?

A. nightmares

B. night terrors

C. sleep talking

D. sleep walking

Use the following information to answer Questions 44 and 45.

Trisha is finding it difficult to go about her normal daily routine. About every 90 minutes she finds herself uncontrollably falling asleep.

Question 44

Trisha is most likely suffering from

A. hypersomnia.

B. sleep apnea.

C. narcolepsy.

D. insomnia.

Question 45

On occasions, Trisha suffers from a sudden loss of muscle tone even without losing consciousness.

This loss of muscle tone while remaining awake is known as

A. cataplexy.

B. hypersomnia.

C. sleep paralysis.

D. hypnagogic hallucinations.

END OF SECTION A

SECTION B – Short-answer questions

Instructions for Section B

There are 6 questions for each of the three areas of study.
Answer **all** questions in the spaces provided.

AREA OF STUDY 1 – Biological bases of behaviour

Question 1

Describe two common features of the **organisation** of the primary sensory cortex and the primary motor cortex.

Feature 1 _____

_____

Feature 2 _____

_____

2 marks

Question 2

Tick the three correct features of both Broca's and Wernicke's aphasia in the following table.

	Site of damage	Fluency of speech	Meaning of speech
Broca's aphasia	frontal lobe ☐ **or** temporal lobe ☐	affected ☐ **or** not affected ☐	affected ☐ **or** not affected ☐
Wernicke's aphasia	frontal lobe ☐ **or** temporal lobe ☐	affected ☐ **or** not affected ☐	affected ☐ **or** not affected ☐

1 + 1 + 1 = 3 marks

Question 3

Sally had an operation to help control her epilepsy. In the operation Sally's corpus callosum was cut. A picture of a tree was presented to her left visual field. She could not spontaneously name what she had seen. Why?

2 marks

Question 4

Rhonda is a talented painter and is excelling in her visual arts class. However, she struggles in some of her other classes, particularly mathematics. Her mother tells her that she is a 'right-brain' thinker. This is a common oversimplification. Explain what is wrong with this comment.

2 marks

Question 5

Describe the three steps in neural processing that connect the sensation of a pin prick to your finger to you pulling away from the stimulus.

Step 1

Step 2

Step 3

3 marks

Question 6

Sula has had a busy week at work. She has had two major projects to complete and today she is delivering a presentation to a number of experts in her field. Sula notices that she is beginning to perspire prior to her talk.

i. Name one immediate psychological effect of stress that Sula may be experiencing.

_____

1 mark

Sula continues to experience the stress over the remaining half of the year.

ii. Describe two features of the physiological impact that prolonged stress may have on the immune system.

Feature A _____

_____

Feature B _____

_____

2 marks

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AREA OF STUDY 2 – Visual perception

Question 7

It can be said that while **visual sensation** is similar for everybody, **visual perception** is an individual process and can be different for each person. Explain why this is so.

2 marks

Question 8

Mary is 70 years old and has problems with her eyesight due to old age. When sewing her patchwork quilt or reading a recipe, she finds it very difficult to see these things clearly. However, her ability to see things in her peripheral vision seems to be unaffected by this problem.

i. Which receptors in Mary's eye are not functioning correctly?

1 mark

ii. Indicate why Mary could have a problem with her central vision but her peripheral vision is functioning normally?

1 mark

iii. As Mary's condition progresses, what other visual process is **most likely** to be affected?

1 mark

Question 9

Define shape constancy and give an example.

2 marks

Question 10

Figure 1

i. In Figure 1 above, the tendency to see a B when reading horizontally and a 13 when reading vertically is due to the psychological factor known as _____

1 mark

ii. Define this psychological factor.

_____

_____

1 mark

iii. How does it function in this particular visual example?

_____

_____

1 mark

Question 11

Diabetic retinopathy can cause loss of vision. Explain how this occurs.

_____

_____

_____

_____

_____

2 marks

Question 12

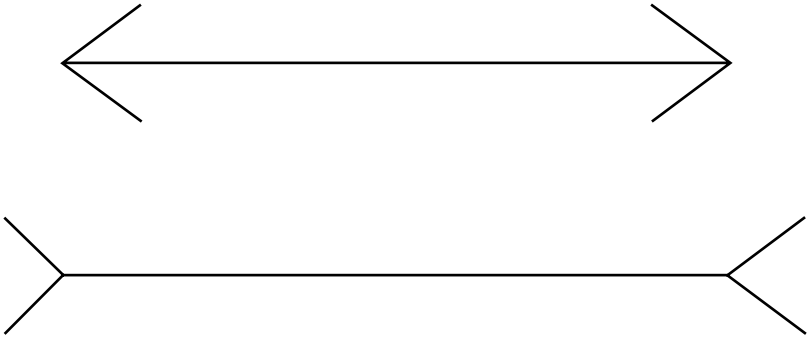

Figure 2. Müller-Lyer illusion

i. What is it that makes this figure an illusion?

1 mark

ii. Explain this illusion in terms of the apparent distance hypothesis.

2 marks

END OF AREA OF STUDY 2
SECTION B – continued

AREA OF STUDY 3 – States of consciousness

Question 13

Name and describe three ways in which altered states of consciousness differ from normal waking consciousness.

i. _____

_____

1 mark

ii. _____

_____

1 mark

iii. _____

_____

1 mark

Question 14

Consider the amazing examples of mind over matter that you might have heard about or seen on television. For example, people lying on beds of nails, piercing themselves with spikes or walking on hot coals. How might an altered state of consciousness explain the resistance to pain in these situations?

_____

_____

_____

_____

_____

_____

2 marks

Question 15

Mrs Steele notices that her students are not alert and appear sleepy in her afternoon class. She decides that the class should have EEG and GSR readings taken. These will show whether the students are alert or sleepy.

i. Explain what the GSR measures.

_____

_____

1 mark

ii. How can the EEG be used to determine if a person is in an alert state?

_____

_____

_____

1 mark

Question 16

Ravi is an environmental activist. He is on a protest in an old growth forest. As a part of his protest Ravi sits in a tree all day and all night. Ravi needs to stay awake continuously so that he does not fall out of the tree.

After five days and nights, the timber company finally agrees not to cut down the trees and Ravi goes home for a good night's sleep.

i. Describe two specific **psychological** and two specific **physiological** effects of prolonged sleep deprivation.

Psychological effects

1. _____

2. _____

1 mark

Physiological effects

1. _____

2. _____

1 mark

ii. What will be the long-term harmful effects of Ravi's sleep deprivation?

_____

_____

1 mark

Question 17

Francis suffers from severe anxiety whenever he sees a spider. He consulted a psychologist to try and control his anxiety. The psychologist told Francis that he had to learn to relax without medicine or drugs. The psychologist taught Francis to monitor his heart rate, control his breathing and generally use his psychological responses to change the way his body reacted to seeing spiders.

The psychologist used two types of treatment.

1. Francis was connected to a device that monitored his vital signs, and sent a signal that could be heard when his vital signs differed from the normal range.

2. Francis learnt some exercise strategies that focused on his breathing in order to stay calm when he encountered a spider.

i. The procedure used by the psychologist to self-monitor physiological responses to seeing spiders is known as _____

1 mark

ii. How could this procedure be used to assist people to relieve chronic pain conditions?

_____

_____

1 mark

iii. What was the name of the other technique used by the psychologist to make Francis become more relaxed while viewing spiders?

_____

1 mark

Question 18

During the night, Jemima often wakes up and has difficulty breathing. She reports that she is still tired after eight hours sleep.

i. This sleep disorder is commonly referred to as _____

1 mark

ii. Name one other symptom often associated with this disorder.

_____

_____

1 mark

END OF QUESTION AND ANSWER BOOK