



Victorian Certificate of Education 2004

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures

Words

Letter

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PSYCHOLOGY

Written examination 1

Tuesday 8 June 2004

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	7	7	15
	3. States of consciousness	7	7	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 19 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.
Choose the response that is **correct** or that **best answers** the question.
A correct answer scores 1, an incorrect answer scores 0.
Marks will **not** be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

AREA OF STUDY 1 – Biological bases of behaviour**Question 1**

When you swing a golf club, the movement of your muscles is regulated by the

- A. autonomic division of the peripheral nervous system.
- B. autonomic division of the central nervous system.
- C. somatic division of the peripheral nervous system.
- D. somatic division of the central nervous system.

Question 2

Which **one** of the following statements about the cerebral cortex is true?

- A. the larger the area on the somatosensory cortex, the more sensitive the perception
- B. the smaller the area on the somatosensory cortex, the more sensitive the perception
- C. the larger the area on the parietal cortex, the more sensitive the hearing
- D. the smaller the area on the parietal cortex, the more sensitive the hearing

Question 3

The most important function of the corpus callosum is to

- A. regulate control of heart rate and blood pressure.
- B. regulate hormone production.
- C. transfer sensory and motor information between the hemispheres.
- D. transfer language information from Broca's area to Wernicke's area.

Question 4

The _____ lobe processes _____ information.

- A. temporal; motor
- B. parietal; auditory
- C. occipital; visual
- D. frontal; sensory

Question 5

Broca's area is in the

- A. right temporal lobe.
- B. left parietal lobe.
- C. right occipital lobe.
- D. left frontal lobe.

Question 6

When Ebonnie patted her friend's cat she was astonished at the softness of the fur. This tactile information was initially received by the

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

Question 7

High levels of stress are associated with

- A. enhanced immune function.
- B. an increased risk of coronary heart disease.
- C. a reduction in the production of stress-related hormones.
- D. increased numbers of white blood cells.

Question 8

Simon, a 'split-brain' patient, is sitting at a table. On the table there are a number of common household objects, including a screwdriver. Simon can touch the objects, but he cannot see them because a screen blocks his view.

The word 'screwdriver' is flashed on the screen to Simon's left visual field for 0.1 of a second.

Typically, Simon will be able to

- A. name the screwdriver by touching it with his left hand.
- B. name the screwdriver by touching it with his right hand.
- C. retrieve the screwdriver with his left hand.
- D. retrieve the screwdriver with his right hand.

Question 9

A radio station held a competition where participants were asked to undertake a polygraph test to see if they had been telling their parents the truth about times when they had been in trouble. Some of the participants gave responses that indicated on the polygraph that they had lied to their parents.

These findings should be treated

- A. with caution, because the participants would get into more trouble from their parents.
- B. believed, because the polygraph detects physiological changes that cannot be controlled.
- C. with caution, because the participants responses may have been due to anxiety and fear rather than dishonesty.
- D. believed, because the polygraph is an accurate measure of lying.

Question 10

In right-handed individuals, which part of the brain shows the highest levels of activation when trying to solve a jigsaw puzzle?

- A. left temporal lobe
- B. right parietal lobe
- C. right temporal lobe
- D. left parietal lobe

Question 11

Neurons that pass sensory information from the peripheral nervous system to the brain are called

- A. sensory neurons.
- B. motor neurons.
- C. interneurons.
- D. reflex arc neurons.

Use the following information to answer Questions 12 to 15.

Maxine is suddenly awoken by a loud noise in the middle of the night. She immediately jumps out of bed.

Question 12

The nervous system that immediately activates Maxine's internal muscles, organs and glands is the

- A. sympathetic nervous system.
- B. parasympathetic nervous system.
- C. somatic nervous system.
- D. arousal nervous system.

Question 13

Maxine notices that her heart is racing.

The nervous system that is responsible for increasing heart rate is the

- A. sympathetic nervous system.
- B. parasympathetic nervous system.
- C. somatic nervous system.
- D. arousal nervous system.

Question 14

Maxine then thinks that the noise is just her household heating system and begins to relax.

The nervous system that is involved with calming her down is the

- A. sympathetic nervous system.
- B. parasympathetic nervous system.
- C. somatic nervous system.
- D. arousal nervous system.

Question 15

The loud noise eventually proves to be due to road works outside Maxine's house. The road works go on every night for the next few weeks.

As a result

- A. Maxine feels less anxious.
- B. Maxine's immune system functions less efficiently.
- C. Maxine's concentration improves.
- D. Maxine's digestion and quality of sleep improve.

AREA OF STUDY 2 – Visual perception**Question 16**

The human eye responds to

- A. electrochemical energy.
- B. neural energy.
- C. visual energy.
- D. electromagnetic energy.

Question 17

The process of transforming light into neuronal activity is called

- A. reception.
- B. transduction.
- C. transmission.
- D. selection.

Question 18

The just noticeable difference is

- A. the ability to detect a change in the stimulus more clearly in the peripheral visual field rather than at the fovea.
- B. the ability to detect a change in the stimulus more clearly at the fovea rather than in the peripheral visual field.
- C. the smallest change in a stimulus that is detectable by the observer.
- D. change in the stimulus sufficient for the observer to note whether it is more pleasant.

Question 19

The cornea is the part of the eye that is responsible for

- A. focusing light rays on the iris.
- B. absorbing light rays and converting them into neural impulses.
- C. bending light rays as they enter the eye.
- D. changing the amount of light that enters the eye.

Question 20

Mitchell walks out of a dark movie theatre into the brightly lit foyer.

This causes the pupils in Mitchell's eyes to

- A. immediately contract.
- B. immediately dilate.
- C. stay the same size.
- D. gradually get smaller over the next 10 minutes.

Question 21

To obtain the **best** visual acuity an image needs to be focused on the

- A. pupil.
- B. lens.
- C. retina.
- D. fovea.

Question 22

You are looking at a picture that sometimes seems to be composed of fish and at other times seems to be composed of birds.

This is an example of the Gestalt principle of

- A. figure-ground alternation.
- B. incomplete closure.
- C. lack of similarity.
- D. proximity of elements.

Question 23

In order to experience depth perception using binocular cues

- A. all information registered on the right side of the body must be relayed to the right hemisphere.
- B. both the left and the right hemisphere must have equal access to the visual stimulus.
- C. all information registered on the right side of the body must be relayed to the left hemisphere.
- D. both eyes must coordinate together using overlapping views of the world.

Question 24

Two objects at different distances cast the same retinal image.

This occurs because

- A. the visual angles for each object are different.
- B. the objects are the same size.
- C. the closer object is smaller.
- D. the images are inverted and projected on the fovea.

Use the following information to answer Questions 25, 26 and 27.

In an experiment, Group A participants were shown pictures of the moon, an astronaut, a star and a satellite. Group B participants were shown pictures of waves, the beach, a wetsuit and a beach towel. Both groups were then shown an ambiguous drawing that could be interpreted either as a rocket or a surfboard.

Question 25

The researchers predicted that Group A were more likely to perceive the ambiguous figure as a _____ due to _____ processing based on immediate past experience.

- A. rocket; top-down
- B. surfboard; top-down
- C. rocket; bottom-up
- D. surfboard; bottom-up

Question 26

The researchers concluded that immediate past experience established _____ when interpreting the ambiguous drawing.

- A. a perceptual set
- B. shape constancy
- C. a visual illusion
- D. size constancy

Question 27

To interpret the stimulus as a surfboard, participants had to fill in gaps to create a complete image. This process is an example of the Gestalt principle of

- A. similarity.
- B. proximity.
- C. closure.
- D. interposition.

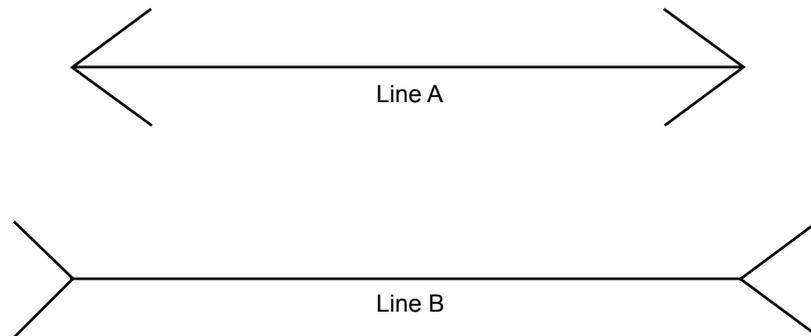
Question 28

Which of the following statements about the Ames room is correct?

- A. The illusion occurs because size constancy is not maintained.
- B. It is a carefully constructed rectangular room that is viewed through a peephole.
- C. The illusion occurs because size constancy is maintained over shape constancy.
- D. The room must include distorted furniture for the illusion to exist.

Question 29

The Müller-Lyer illusion



According to the apparent distance hypothesis, Line A appears to be _____ Line B.

- A. closer than
- B. further away than
- C. identical to
- D. longer than

Question 30

According to the apparent distance hypothesis, the greater perceived size of the moon at the horizon as compared with the zenith is because the moon seems to be

- A. the same distance as at the zenith.
- B. nearer.
- C. further away.
- D. brighter.

AREA OF STUDY 3 – States of consciousness**Question 31**

William James indicated that the content of consciousness

- A. is a stream of information which is under conscious control.
- B. is a changing sequence of thoughts, feelings and perceptions.
- C. arises from the activation of the neurons.
- D. is a discrete stage of perceptual processing.

Question 32

Which of the following is **not** an example of normal waking consciousness?

- A. planning
- B. anticipating
- C. thinking
- D. dreaming

Question 33

Elizabeth has not slept for the last two days.

As a result she is likely to

- A. perform well on monotonous tasks.
- B. have problems with memory and recall.
- C. experience hypnic jerks.
- D. perform as usual on interesting or complex tasks.

Question 34

Ian enjoys playing the computer game SuperRace 2000. He plays the game a lot and often achieves high scores. Brett rarely plays computer games. Both Ian and Brett attempt to play the game while talking on the telephone. _____ performance is less likely to be affected because playing this computer game is a(n) _____ process.

- A. Ian's; automated
- B. Brett's; automated
- C. Ian's; controlled
- D. Brett's; controlled

Question 35

Gerard is in an altered state of consciousness. He reports that his pain threshold is significantly lower compared with his pain threshold during his normal waking state.

This difference is best explained by

- A. a reduction in signals for the pain receptors.
- B. a perceptual distortion.
- C. changes in self-control.
- D. changes in emotional feelings.

Question 36

Which of the following statements about the way pain can be controlled is correct?

- A. Hormones are released by the body to increase the sensation of pain.
- B. Psychological factors can reduce the severity of pain.
- C. Lower arousal is associated with a reduction in pain.
- D. Stress increases the severity of pain.

Question 37

Max is able to drive his car, listen to conversation on the radio, and work out his travelling direction. He can do this efficiently and all at the one time.

This is an example of which aspect of consciousness?

- A. selective attention
- B. focused attention
- C. divided attention
- D. concentrated attention

Question 38

It is generally accepted that sleep

- A. detoxifies the substances built up in the body during the day.
- B. allows time for damaged brain cells to heal.
- C. provides both adaptive and restorative functions.
- D. allows time for dreaming, which gives meaning and purpose to our daily lives.

Question 39

At the deepest level of sleep, _____ brain waves are likely to occur, and they tend to have _____ frequency and _____ amplitude.

- A. beta; low; high
- B. delta; low; high
- C. beta; high; low
- D. delta; high; low

Question 40

Which brain wave patterns are associated with sleep spindles?

- A. theta
- B. alpha
- C. delta
- D. mixture of beta and alpha

Question 41

Dreams usually occur

- A. if you go to sleep with a full stomach.
- B. during the occurrence of REM sleep.
- C. during sleep spindles.
- D. because of sleep paralysis.

Question 42

A graph that shows electrical activity of muscles is called an

- A. electromyograph.
- B. electroencephalograph.
- C. strain gauge.
- D. electromusculargraph.

Question 43

Generally, during REM sleep

- A. most skeletal muscles are relaxed.
- B. small muscles of the face are tense.
- C. virtually no electrical activity in eye muscles can be detected.
- D. large amounts of electrical activity can be detected in leg muscles.

Question 44

Rosalie is a newborn baby and her grandmother, Vera, is 65 years old.

Which of the following statements about their sleep patterns is most likely to be correct?

- A. Rosalie sleeps for an average of 8 hours; Vera sleeps for an average of 4 hours.
- B. Rosalie sleeps for an average of 15 hours; Vera sleeps for an average of 10 hours.
- C. Rosalie undergoes about 50% of her sleep in REM; Vera undergoes about 20% of her sleep in REM.
- D. Rosalie undergoes about 20% of her sleep in REM; Vera undergoes about 50% of her sleep in REM.

Question 45

Sleeptalking usually occurs during _____ sleep and is regarded as a _____ phenomenon.

- A. NREM; rare
- B. NREM; common
- C. REM; rare
- D. REM; common

SECTION B – Short-answer questions

Instructions for Section B
Answer **all** questions in the spaces provided.

AREA OF STUDY 1 – Biological bases of behaviour

Question 1

Describe the two main functions of the spinal cord.

2 marks

Question 2

The somatosensory cortex is located in the _____ lobe and the motor cortex is located in the _____ lobe.

2 marks

Question 3

Uncle Toby has just had a stroke (a disruption of the blood supply to the brain) in his right hemisphere. List three difficulties he might now show because of the damage to his brain.

3 marks

Question 4

Justin has a brain tumour which has caused Wernicke's aphasia.

- i. What **side** and **lobe** of Justin's brain is most likely to have been affected?

- ii. Describe two difficulties that Justin would experience when he is involved in a verbal conversation.

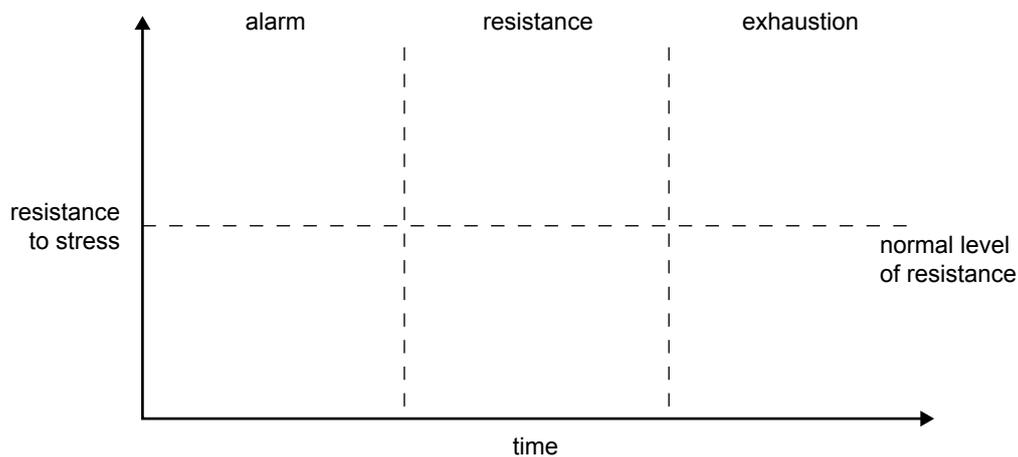
1 + 2 = 3 marks

Question 5

- i. Alarm reaction is the first stage of the General Adaptation Syndrome and can be divided into two parts.

The names of these two parts are _____ and _____.

The diagram below represents the General Adaptation Syndrome.



- ii. Draw a curve in the diagram above that represents the change in resistance across the three stages.
- iii. Describe the effect on the immune system if additional stressors affect the individual during the stage of resistance.

1 + 1 + 1 = 3 marks

Question 6

i. What is the Fight/Flight response?

ii. What function does it serve?

1 + 1 = 2 marks

AREA OF STUDY 2 – Visual perception

Question 7

Distinguish between the absolute and difference thresholds?

2 marks

Question 8

Indicate the differences between the rods and cones in the areas listed in the following table.

Tick the correct answers.

	Rods				Cones			
Location on the retina	fovea	<input type="checkbox"/>	periphery	<input type="checkbox"/>	fovea	<input type="checkbox"/>	periphery	<input type="checkbox"/>
Respond best to targets in which type of light	bright	<input type="checkbox"/>	dim	<input type="checkbox"/>	bright	<input type="checkbox"/>	dim	<input type="checkbox"/>
Respond best to colours in the range	red-yellow	<input type="checkbox"/>	blue-green	<input type="checkbox"/>	red-yellow	<input type="checkbox"/>	blue-green	<input type="checkbox"/>

3 marks

Question 9

The ability to perceive the true position of an object regardless of whether our body is vertical or horizontal

is known as _____ .

1 mark

Question 10

i. How is relative size used to convey depth or distance in a painting?

ii. Name one other cue for depth or distance in a picture.

1 + 1 = 2 marks

Question 11

Gabriel is watching a tennis ball flying towards him.

How does convergence normally help Gabriel judge distance?

2 marks

Question 12

Describe two visual problems typically experienced by someone suffering from age-related macular degeneration.

1.

2.

2 marks

AREA OF STUDY 3 – States of consciousness

Question 14

i. What does the Galvanic Skin Response (GSR) measure?

ii. The GSR can be incorrectly interpreted as a measure of a state of consciousness. Give one example of how this can occur.

1 + 1 = 2 marks

Question 15

A psychologist wants to determine whether a patient is in an altered state of consciousness. Describe two pieces of psychological evidence that she could use to make this distinction.

1.

2.

2 marks

Question 16

State one similarity and one difference between daydreaming and lucid dreaming.

2 marks

Question 17

Indicate the differences between nightmares and night terrors by ticking the appropriate box.

	Nightmares	Night terrors
Occur in REM sleep		
Occur frequently		
Occur in stage 3–4 sleep		
More common in females		
More easily remembered		
Heightened physiological awareness		

3 marks

Question 18

Describe how meditation can be used to relieve pain.

2 marks

Question 19

i. Define sleep apnea.

ii. What does an electrooculogram measure?

1 + 1 = 2 marks

Question 20

What are two characteristics that could indicate that someone is suffering from hypersomnia?

1.

2.

2 marks