



**Victorian Certificate of Education
2006**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures
Words

Letter

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PSYCHOLOGY
Written examination 1

Tuesday 6 June 2006

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

<i>Section</i>	<i>Area of study</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	1. Brain and nervous system	18	18	18
	2. Visual perception	13	13	13
	3. States of consciousness	13	13	13
B	1. Brain and nervous system	7	7	18
	2. Visual perception	6	6	14
	3. States of consciousness	6	6	14
				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 18 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 unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions**Instructions for Section A**

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 – Brain and nervous system**Question 1**

The cerebral cortex

- A. acts as a protective layer covering the brain.
- B. connects the right hemisphere with the left hemisphere.
- C. is responsible for voluntary muscle movements.
- D. increases the strength of the immune system.

Question 2

The cerebral cortex is approximately _____ thick.

- A. 2 to 5 millimetres
- B. 6 to 10 millimetres
- C. 2 to 5 centimetres
- D. 6 to 10 centimetres

Question 3

The _____ is a band of nerve fibres connecting the left and right hemispheres.

- A. cerebral cortex
- B. cerebral hemisphere
- C. corpus callosum
- D. cerebellum

Question 4

Paul suffered a head injury as a result of a sporting accident.

Since the accident, Paul has great difficulty speaking. He generally speaks in very short, unclear sentences, and often omits simple words such as 'the' and 'a'. Psychological testing has indicated that Paul's reading and writing abilities are unaffected.

Paul has most likely suffered damage to _____ area in the _____ lobe.

- A. Broca's; temporal
- B. Wernicke's; frontal
- C. Broca's; frontal
- D. Wernicke's; temporal

Question 5

The primary somatosensory cortex is located in which lobe of the brain?

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

Question 6

Tony is looking straight ahead at a projector screen. His right eye is covered with a blindfold. An image of a penguin is projected onto the middle of the screen.

This information would be registered in _____ hemisphere(s).

- A. the right
- B. the left
- C. both the left and right
- D. neither the left nor right

Question 7

Carmela is looking straight ahead at a projector screen. A picture of a wombat is flashed to her right visual field only.

If Carmela's corpus callosum was completely severed, what would be the best way for her to demonstrate what she had seen?

- A. to name it verbally
- B. to draw it with her right hand
- C. to draw it with her left hand
- D. to name and draw it with either hand

Question 8

The brain scanning methods that provide the most comprehensive information on the functioning brain are _____ and _____.

- A. PET; fMRI
- B. CT; MRI
- C. MRI; fMRI
- D. CT; PET

Question 9

In which of the following areas has the brain stimulation method **not** provided important information?

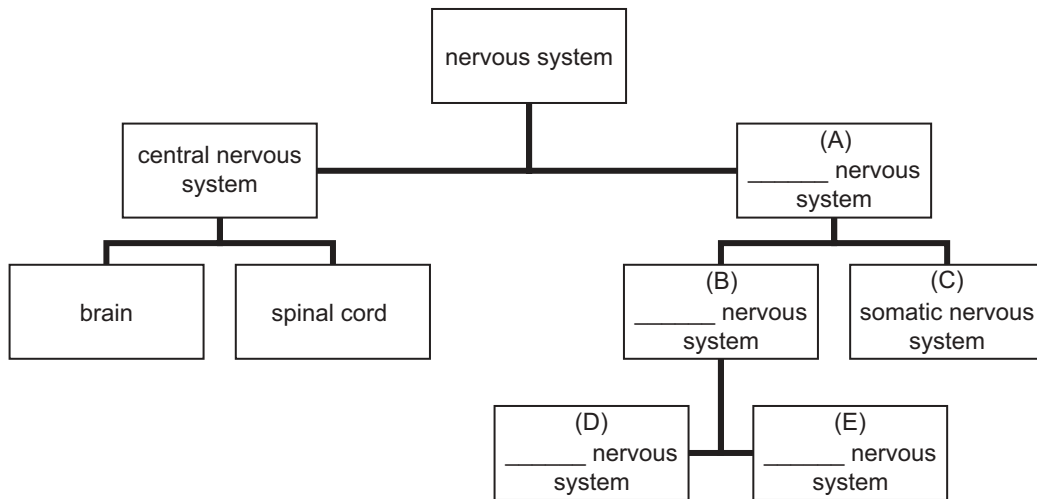
- A. mapping of the somatosensory cortex
- B. hemispheric specialisation
- C. identification of specific language areas in the brain
- D. brain wave patterns

Question 10

The somatic nervous system carries information from _____ to the _____.

- A. the peripheral nervous system; autonomic nervous system
- B. the sympathetic nervous system; parasympathetic nervous system
- C. skeletal muscles; sensory receptors
- D. sensory receptors; CNS

Questions 11 and 12 relate to the following diagram, which illustrates the divisions of the nervous system.



Question 11

What are the correct labels for the boxes labelled (A) and (B)?

- A. sympathetic; parasympathetic
- B. peripheral; autonomic
- C. sympathetic; peripheral
- D. parasympathetic; autonomic

Question 12

What are the correct labels for the boxes labelled (D) and (E)?

- A. sympathetic; parasympathetic
- B. peripheral; autonomic
- C. sympathetic; peripheral
- D. parasympathetic; autonomic

Question 13

Ralph has been in a bicycle accident. This has caused severe brain damage and left him in a coma. Despite this, his internal organs (for example, his heart) continue to function.

This is because his _____ is still able to operate.

- A. somatic nervous system
- B. corpus callosum
- C. autonomic nervous system
- D. digestive system

Questions 14 and 15 relate to the following information.

John is sitting quietly watching the television late at night. He hears a very loud noise, like a gunshot, just outside his window. He jumps out of his chair, his muscles tense, and he can feel his heart thump hard in his chest.

Question 14

John's reactions are controlled primarily by his _____ nervous system.

- A. sympathetic
- B. parasympathetic
- C. central
- D. somatic

Question 15

John quickly realises that the noise was just a car backfiring. He calms down, his heart stops thumping and his muscles relax.

These reactions are controlled primarily by his _____ nervous system.

- A. sympathetic
- B. parasympathetic
- C. central
- D. somatic

Question 16

For many years Silvia worked long, strenuous hours and found little time to relax. Eventually, she suffered a heart attack. Her heart attack was most likely a result of her stressful lifestyle.

Silvia's body responded to the stress she was experiencing by

- A. increasing the functioning of the immune system.
- B. increasing blood pressure.
- C. decreasing breathing rate.
- D. decreasing level of arousal.

Question 17

At which point in the General Adaptation Syndrome does the sympathetic nervous system help an organism prepare to deal with a stressor?

- A. shock
- B. countershock
- C. resistance
- D. exhaustion

Question 18

A psychologist is conducting research into a new brain scanning technique that has the potential to reveal important new information about brain function. The technique, however, involves a potential risk associated with exposure to chemicals. The impact of the chemicals on people is largely unknown. In weighing up the risks and benefits associated with this study, the researcher is primarily considering which important ethical issue?

- A. beneficence
- B. integrity
- C. respect for persons
- D. justice

AREA OF STUDY 2 – Visual perception**Question 19**

Which of the following is the **first** process to occur in visual perception?

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

Question 20

In visual perception, transduction involves converting _____ into _____.

- A. neural impulses; feature detectors
- B. specific features of a visual stimulus; an organised form
- C. electrochemical energy; electromagnetic energy
- D. electromagnetic energy; neural impulses

Question 21

It is hypothesised that during transmission certain neurons respond to specific visual stimuli, such as horizontal, vertical and diagonal lines.

These neurons are known as

- A. photoreceptors.
- B. motor neurons.
- C. feature detector cells.
- D. visual perception cells.

Question 22

Researchers have found that a candle flame can be detected _____ per cent of the time at a distance of 48 kilometres on a dark and clear night. In this situation, the researchers identified the _____.

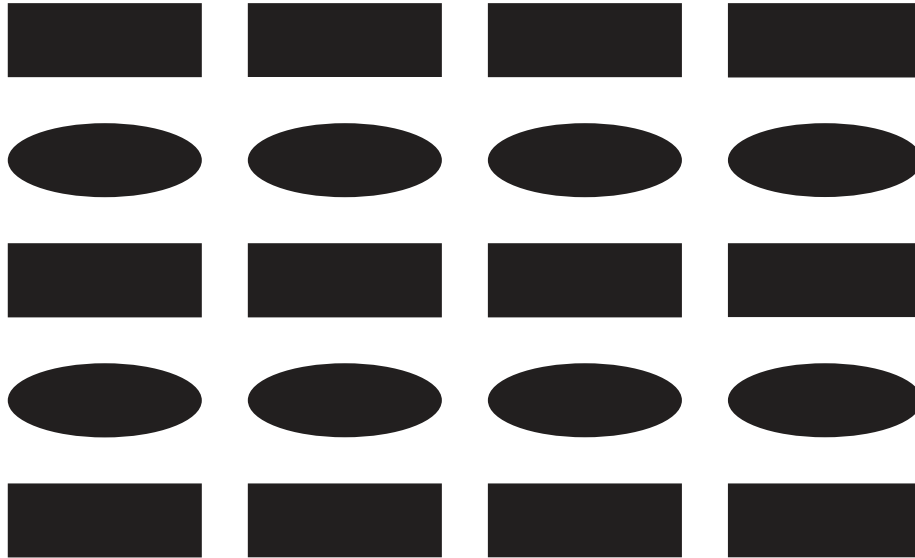
- A. 50; difference threshold
- B. 50; absolute threshold
- C. 100; difference threshold
- D. 100; absolute threshold

Question 23

In visual perception, _____ involve the grouping of individual parts into a whole form.

- A. visual thresholds
- B. visual constancies
- C. depth or distance cues
- D. Gestalt principles

The following figure relates to Question 24.



Question 24

The pattern above can be perceived as rows of rectangles and ovals.

Which of the following Gestalt principles explains how the pattern is perceived?

- A. closure only
- B. figure-ground and similarity only
- C. similarity and proximity only
- D. figure-ground, similarity and proximity

Question 25

Camouflaging occurs because

- A. the Gestalt principle of closure is used.
- B. the Gestalt principle of similarity is not used.
- C. the figure is similar to the ground.
- D. the figure is different from the ground.

Question 26

Retinal disparity gives us an indication about depth and distance.

The ____ the object is relative to the individual, the ____ the retinal disparity.

- A. closer; greater
- B. closer; smaller
- C. further; greater
- D. further; smaller

Question 27

A child is hanging upside down by his knees from some playground equipment. He is able to perceive a nearby tree as upright, despite the retinal image of the tree being upside down.

This is due to

- A. figure-ground.
- B. size constancy.
- C. shape constancy.
- D. orientation constancy.

Question 28

Jenny is running late for an important meeting in the city. The traffic is terrible, and she is searching for somewhere to park her car free of charge. She sees a sign 'Free Parking', but as she gets closer she realises the sign actually says 'Fee Parking'.

The most likely explanation for her mistake is that she was influenced by

- A. a visual illusion.
- B. a perceptual set.
- C. the difference threshold.
- D. the Gestalt principle of closure.

Question 29

In the Müller-Lyer illusion

- A. the two lines are perceived to be the same length, even though they each cast a different image on the retina.
- B. the two lines are perceived to be of differing lengths, even though they each cast the same image on the retina.
- C. the two lines are perceived to be the same length, even when the retinal images for each line are manipulated to enhance the linear perspective.
- D. the shapes placed at the ends of each of the lines result in a change in the retinal image of the line.

Question 30

For the Ames room illusion to occur, the Ames room **must**

- A. be viewed through a binocular peephole.
- B. include specialist furniture that is odd in shape but perceived as normal.
- C. be rectangular in shape but perceived as a trapezoidal shape.
- D. have one back corner that is further away from the viewer than the other back corner.

Question 31

Christopher would like to carry out an experiment that tests the effect of context on perceptual set. He wishes to test a sample of students and then generalise the results to all the VCE students at his school.

Which of the following methods for selecting participants is most likely to produce a sample that is representative of the population?

- A. using the first 25 VCE students who respond to an advertisement in the school's newsletter
- B. selecting the first 25 VCE students who walk into the library during lunchtime
- C. testing everyone in his VCE psychology class (25 students)
- D. generating a random list of 25 names from a list of all VCE students in the school

AREA OF STUDY 3 – States of consciousness**Question 32**

Which of the following is most likely to be associated with normal waking consciousness?

- A. coma
- B. selective attention
- C. dreams
- D. insomnia

Question 33

Which of the following is most likely to rely on controlled processing?

- A. tapping your pen repeatedly on the desk
- B. listening to background music
- C. washing the dishes
- D. composing an essay

Question 34

Selective attention occurs when a person

- A. concentrates on one task while ignoring others.
- B. divides their attention between two or more tasks.
- C. is carrying out only one task and this is automatic.
- D. is not highly focused on any particular task.

Question 35

A number of physiological measures can be used to study states of consciousness.

Physiological measures that are commonly used include

- A. electroencephalogram, self reports, blood pressure.
- B. galvanic skin response, body temperature, heart rate.
- C. glucose absorption in the brain, blood pressure, electromyogram.
- D. heart rate, electroencephalogram, CT scan.

Question 36

The pattern of EEG waves present when someone is awake and alert is characterised by _____ waves.

- A. alpha
- B. beta
- C. theta
- D. delta

Question 37

Stage 1 sleep primarily consists of

- A. alpha and theta waves.
- B. beta and theta waves.
- C. beta and alpha waves.
- D. alpha and delta waves.

Question 38

During which stage of sleep would you expect to find delta waves starting to appear?

- A. stage 1
- B. stage 2
- C. stage 3
- D. stage 4

Question 39

According to most sleep experts, the most effective way to treat insomnia is

- A. medication.
- B. dietary and lifestyle changes.
- C. going to a sleep clinic.
- D. staying awake for extremely long periods of time.

Question 40

A person diagnosed with hypersomnia is likely to

- A. take longer than 30 minutes to fall asleep.
- B. function normally on very few hours of sleep (less than 5) per day.
- C. suddenly collapse into REM sleep at random times during wakeful periods of the day.
- D. fall asleep immediately upon going to bed.

Questions 41–44 relate to the following information.

A psychologist has devised a new technique that is designed to alleviate the feeling of stress and induce sleep. She sets up two conditions. The experimental condition involves being taught the technique while the control condition does not.

Question 41

To minimise the effects of individual differences between the participants in each condition, which research design could the psychologist use?

- A. independent-groups design
- B. matched-participants design
- C. between-subjects design
- D. counterbalancing design

Question 42

When obtaining informed consent from prospective participants, the psychologist must

- A. tell the participants of any risks involved in the study.
- B. coerce the participants to become involved in the study.
- C. debrief the participants after the study.
- D. allow participants to withdraw from the study at any time.

Question 43

While carrying out an experiment, the psychologist unintentionally encouraged the experimental group to perform well.

The psychologist's influence on the participants confounded the results and is known as the

- A. participant effect.
- B. experimenter effect.
- C. bias effect.
- D. random allocation effect.

Question 44

To overcome the problem outlined in Question 43, the psychologist could

- A. employ a research assistant, who is unaware which group the participants are in, to collect the results.
- B. make sure the participants do not know which group they are allocated to.
- C. include a placebo group.
- D. use a stratified sampling technique.

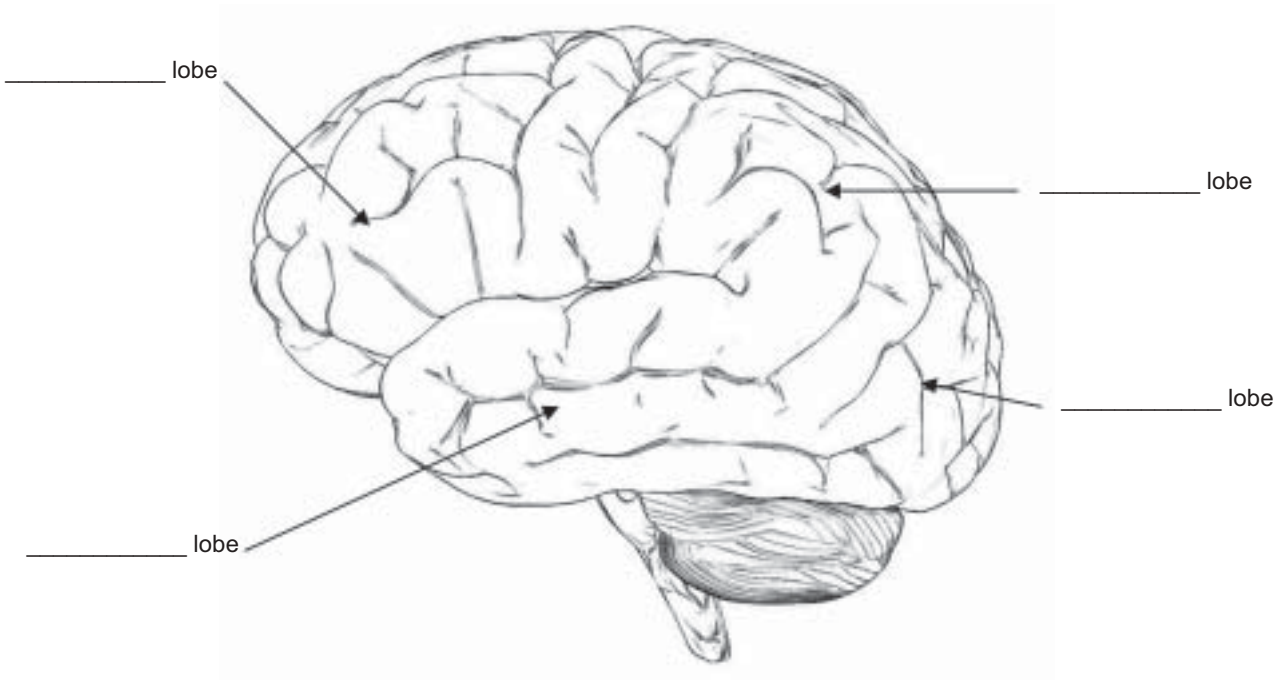
SECTION B – Short-answer questions

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

AREA OF STUDY 1 – Brain and nervous system

Question 1

Correctly label the brain lobes indicated on the diagram below.



4 marks

Question 2

Describe two functions of Wernicke’s area.

- 1. _____

- 2. _____

2 marks

Question 3

- a. In terms of the potential risks to participants, describe one disadvantage of PET scanning in comparison with CT scanning.

1 mark

- b. If a person has a metallic implant in their body, such as a heart pacemaker or a pin in a bone, they are advised not to undertake a certain brain scanning technique. What is the name of this technique?

1 mark

Question 4

The polygraph is used as a lie detector in some countries.

- a. A number of control questions are asked when undergoing a lie detector test. In order to establish a baseline physiological response, the control questions vary from each other.
How do these questions vary?

1 mark

- b. Anthony underwent a polygraph test and was accused of lying when, in fact, he was telling the truth. Describe how this incorrect conclusion could have been reached. Give two explanations.

1.

2.

2 marks

Question 5

Zoe has developed a bad cold and cough and visits her doctor. In taking Zoe's history, the doctor discovers that Zoe has just completed several highly important university exams. Among other recommendations, Zoe's doctor suggests she undertake some form of relaxation training to reduce her stress levels.

- a. How may the stress associated with Zoe's examination period contribute to her illness?

1 mark

- b. What stage of the General Adaptation Syndrome is Zoe most likely to be experiencing?

1 mark

- c. With reference to the General Adaptation Syndrome, why would Zoe's doctor have recommended relaxation?

1 mark

Question 6

Explain how the flight-fight response increases a person's chances of survival.

2 marks

Question 7

Professor Edwards is interested in conducting brain research. To do so, he must always follow ethical guidelines, including getting informed consent from participants. What information does the participant need to have in order to give informed consent?

2 marks

AREA OF STUDY 2 – Visual perception

Question 8

During the stage of transmission, electrochemical energy is relayed via the _____ nerve to the _____ lobe of the brain for further processing.

2 marks

Question 9

One night when Leisel is reading in bed, her sister asks her to dim the reading light. Leisel does so, but her sister immediately complains that Leisel has not done as she asked. With reference to the visual threshold involved, explain why Leisel's sister did not notice that Leisel had dimmed the reading light.

2 marks

Question 10



Name **two** pictorial depth cues used to produce the perception of depth and/or distance in this picture. Clearly explain how each assists the viewer to perceive depth and/or distance in **this** picture.

1. Cue _____

Explanation _____

2. Cue _____

Explanation _____

Question 11

James sustains an injury to his left eye, and has to wear an eye patch for several weeks.

- a. Name a depth perception cue that James would be **unable** to use.

1 mark

- b. Name a non-pictorial depth cue that James would be **able** to use and explain how this cue would assist him to perceive depth.

2 marks

Question 12

The Müller-Lyer diagram is considered to be a visual illusion. Explain the term ‘visual illusion’.

1 mark

Question 13

A researcher is interested in studying the effects of sleep deprivation on visual perception. She advertises for participants from the psychology department at the university at which she lectures. Participants are paid a small fee and given a credit towards their psychology coursework. The researcher informs them that the experimental group will be deprived of sleep for a period of time, and that it is vital that participants stay until the end of the experiment because of the time and money invested in carrying out the sleep deprivation phase. She is pleased to obtain a sufficient number of participants for her experiment. She carries out her experiment and conducts a debriefing session.

Name one ethical principle the researcher has broken in the conduct of her experiment and explain how she has broken this principle.

2 marks

AREA OF STUDY 3 – States of consciousness

Question 14

Yusef has just obtained his driver's licence, and is excited about being able to drive his own car. Yusef understands that it would be extremely dangerous for him to drive his new car and talk on a mobile phone at the same time.

Why, in terms of attention and processing, is it dangerous to carry out both tasks simultaneously?

2 marks

Question 15

Dr Jens, a psychologist, is using hypnosis with a patient as part of a treatment plan. During hypnosis a patient is in an altered state of consciousness. Give three psychological characteristics the patient may report to Dr Jens to indicate he is experiencing an **altered state of consciousness**.

1. _____
2. _____
3. _____

3 marks

Question 16

The most common brain wave patterns in REM sleep are similar to _____ waves.

These brain waves have a _____ amplitude.

2 marks

Question 17

Name and describe the unique brain wave features that are characteristic of stage 2 sleep.

2 marks

Question 18

Jack has not done much study for his psychology examination. He decides to stay up all night to study for two nights prior to the examination. In terms of the effects of sleep deprivation, give two reasons why this decision may negatively impact on Jack's examination performance.

1. _____

2. _____

2 marks

Question 19

Bobbie is worried about her four-year-old daughter's sleep problems that have been occurring in the middle of the night. She is not sure if her daughter is experiencing nightmares or night terrors. Clearly outline three ways to distinguish between nightmares and night terrors.

1. _____

2. _____

3. _____

3 marks