



Victorian Certificate of Education 2008

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures

Words

--

PSYCHOLOGY

Written examination 1

Thursday 12 June 2008

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. 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	5	5	14
	3. States of consciousness	5	5	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 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 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 two hemispheres of the brain are connected by

- A. the cerebral cortex.
- B. the corpus callosum.
- C. a deep fissure that separates all the nerve fibres.
- D. a small strip of tissue with no neurons.

Question 2

The main function of the corpus callosum is to

- A. exchange neurons between hemispheres.
- B. process information from both hemispheres.
- C. protect the brain from injury.
- D. transfer information from one hemisphere to the other.

Question 3

Which one of the following statements about the human adult brain is correct?

- A. The adult brain weighs around 500 g.
- B. The brain is divided into sections, each of which has one specific function.
- C. The brain's cerebral cortex is folded to increase cortical surface area.
- D. The brain is responsible for many bodily functions but not body temperature.

Question 4

If you suffered a stroke that caused damage to the temporal lobe, the task that you would probably find most difficult would be

- A. recognising the face of a work colleague.
- B. fitting an object into a space.
- C. feeling the sharpness of a needle.
- D. making decisions about your future.

Question 5

A person suffers from a condition in which they do not acknowledge the existence of the left half of their body and their environment.

This is a condition that is most commonly associated with damage to the

- A. parietal lobe of the right hemisphere.
- B. parietal lobe of the left hemisphere.
- C. frontal lobe of the right hemisphere.
- D. frontal lobe of the left hemisphere.

Question 6

Major functions of the frontal lobe generally include

- A. visual perception, speech production and motor control.
- B. controlled reasoning, memory and personality.
- C. logical thinking, motor control and speech production.
- D. motor control, abstract reasoning and language comprehension.

Question 7

Research involving the recognition of emotions has shown that usually

- A. only the right hemisphere is involved.
- B. only the left hemisphere is involved.
- C. the right hemisphere is more involved than the left hemisphere.
- D. the left hemisphere is more involved than the right hemisphere.

Question 8

In positron emission tomography (PET) scans, a substance is tagged with a radioactive marker and then monitored.

This substance is a form of

- A. iodine.
- B. kryptonite.
- C. uranium.
- D. glucose.

Question 9

A PET scan provides information

- A. in very high resolution pictures that show brain structure and function.
- B. in a colour-coded map that reveals areas of high activity in the brain.
- C. about abnormalities in the structure of the brain.
- D. about the number of cognitive tasks that were performed correctly.

Question 10

Which procedure results in a high-quality three-dimensional picture of the brain?

- A. functional magnetic resonance imaging (fMRI) scan
- B. electrical stimulation of the brain (ESB) scan
- C. positron emission topography (PET) scan
- D. electroencephalograph (EEG) scan

Question 11

Which two procedures allow researchers to view changes in brain activity over time?

- A. positron emission topography (PET) scan and computerised tomography (CT) scan
- B. positron emission topography (PET) scan and functional magnetic resonance imaging (fMRI) scan
- C. magnetic resonance imaging (MRI) scan and functional magnetic resonance imaging (fMRI) scan
- D. computerised tomography (CT) scan and magnetic resonance imaging (MRI) scan

Question 12

The parietal lobe contains

- A. the motor cortex.
- B. the somatosensory cortex.
- C. Broca's area.
- D. Wernicke's area.

Question 13

Which one of the following is controlled by the somatic nervous system?

- A. breathing
- B. blood pressure
- C. decision making
- D. skeletal muscles

Question 14

Which of the following responses is **not** produced by the sympathetic nervous system?

- A. relaxation of the airways
- B. slowing of digestion
- C. an increase in the production of saliva
- D. dilation of the pupils

Question 15

Aidan has acquired damage to the Broca's area of his brain. As a result, he suffers from Broca's aphasia. His speech

- A. makes sense but is slow and deliberate.
- B. does not make sense and tends not to include nouns and verbs.
- C. makes sense but is interrupted with constant stuttering.
- D. does not make sense but includes 'function words' such as 'a' and 'the'.

Question 16

Following split-brain surgery, an individual would have difficulty naming an object that he briefly saw in the left visual field because while the _____ hemisphere 'saw' the object, naming tasks are usually under the control of the _____ hemisphere.

- A. right; left
- B. left; right
- C. dominant; nondominant
- D. nondominant; dominant

Question 17

The nervous system that consists of the somatic and autonomic nervous systems is the _____ nervous system.

- A. central
- B. skeletal
- C. peripheral
- D. sympathetic

Question 18

Before performing research, the researcher must weigh up the potential risks to the participants and the potential benefits to society.

This ethical consideration is known as

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

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

The process of reception in visual perception occurs when

- A. photoreceptors in the back of the eye detect light.
- B. rods and cones differentiate between different shapes.
- C. visual information is received by the occipital lobe.
- D. electromagnetic energy is received and converted by the lens.

Question 20

A red light, green light and blue light differ in

- A. amplitude.
- B. complexity.
- C. wavelength.
- D. purity.

Question 21

Visual acuity is greatest

- A. in the fovea where there are only rods.
- B. in the fovea where there are only cones.
- C. in the area of the retina where there are equal numbers of rods and cones.
- D. in the area of the retina where the optic nerve attaches.

Question 22

The process of converting one kind of energy to another by cells in the eye is called

- A. feature detection.
- B. perceptual organisation.
- C. transmission.
- D. transduction.

Question 23

Absolute threshold refers to the

- A. difference between visual sensations received under two different conditions.
- B. maximum amount of energy possible before a change is detected 50% of the time.
- C. minimum amount of energy necessary before a stimulus is detected 50% of the time.
- D. type of energy required for an organism to detect it.

Question 24

The adjustment of the shape of the lens to focus on a near object is known as

- A. convergence.
- B. retinal disparity.
- C. accommodation.
- D. transduction.

Question 25

An open drawer is perceived as having the same shape when seen from the front, the side, or from above. This is an example of

- A. perceptual constancy.
- B. perceptual set.
- C. similarity.
- D. visual illusion.

Use the following figure to answer Questions 26 to 29.

The following illustrates the floor plan of the Ames room.

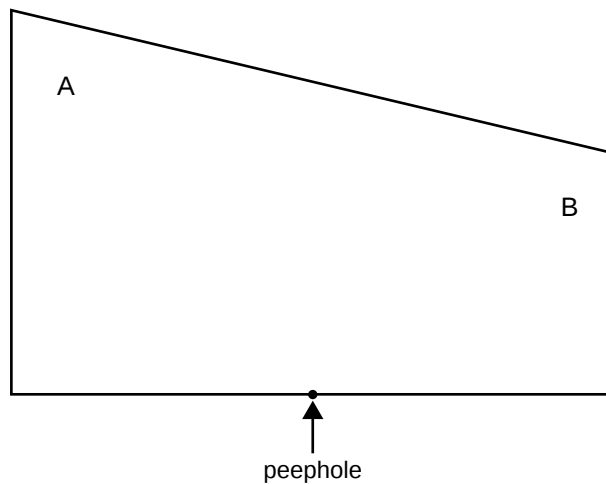


Figure 1

The Ames room is viewed through the peephole.

Lachlan walks from position A to position B in the Ames room.

Question 26

According to the Ames room illusion, when Lachlan is at position A he is perceived as being _____ than when at position B.

- A. more distant
- B. closer
- C. smaller
- D. bigger

Question 27

Lachlan _____ on the viewer's retina when at position A compared to position B.

- A. casts a larger image
- B. casts a smaller image
- C. casts the same size image
- D. does not cast an image

Question 28

The floor of the Ames room

- A. slants downwards from the viewer at the peephole to position A.
- B. slants downwards from the viewer at the peephole to position B.
- C. does not slant and neither does the ceiling.
- D. does not slant but the ceiling does have a slant.

Question 29

The Ames room illusion is produced by our tendency to maintain _____ constancy while _____ constancy is not maintained.

- A. orientation; size
- B. shape; size
- C. size; shape
- D. size; orientation

Question 30

Alex is conducting an experiment on visual perception and wishes to use random sampling to select her participants from the population of VCE students at her school.

An appropriate method would involve

- A. calling for volunteers.
- B. selecting every fourth student who enters the VCE common room.
- C. organising participants alphabetically by surname and selecting every second participant.
- D. assigning each VCE student a number and putting all numbers into a box and drawing out 20 numbers.

Question 31

In an experiment, the group that is not exposed to the independent variable is known as the

- A. experimental group.
- B. double-blind group.
- C. random group.
- D. control group.

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

A state of deep relaxation such as meditation is likely to produce

- A. a lowered heart rate.
- B. body tremors.
- C. an increased galvanic skin response (GSR).
- D. a significant increase in body temperature.

Question 33

An alcohol-induced state could be called an altered state of consciousness because the individual

- A. would be fully aware of their surroundings.
- B. can control the amount of alcohol they drink.
- C. may be unable to control their emotions.
- D. will probably be able to judge time.

Question 34

Sue is sitting at her desk working on some complex mathematical questions.

An electroencephalograph (EEG) would most likely show _____ brain waves.

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

Question 35

Which of the following statements is true of the sleep cycle in a typical night's sleep for an adult?

- A. Each cycle lasts for approximately 35 minutes.
- B. About 60% of the night is spent in rapid eye movement (REM) sleep.
- C. Periods of rapid eye movement (REM) sleep get longer and closer together as the night progresses.
- D. Periods of Stage 4 sleep occur more often as the night progresses.

Question 36

Trish notices that while her husband Jonathan is sleeping, he stops breathing for short periods and then gulps air. Sometimes he wakes briefly during these times.

Jonathan is most likely suffering from

- A. hypersomnia.
- B. sleep apnea.
- C. insomnia.
- D. narcolepsy.

Question 37

A characteristic of rapid eye movement (REM) sleep is that

- A. the person dreams only during this stage of sleep.
- B. the brain-wave pattern resembles the pattern of an awake and alert individual.
- C. the person does not dream and the brain-wave pattern resembles that of an awake and relaxed individual.
- D. the person may be dreaming and their muscles often move.

Question 38

Bruce suffers from night terrors.

In which stage of sleep is he most likely to be when he has night terrors?

- A. Stage 1
- B. Stage 2–3
- C. Stage 3–4
- D. rapid eye movement (REM)

Question 39

The electrooculogram (EOG) detects, amplifies and records

- A. movement of the eyes.
- B. electrical activity in the muscles that are part of the iris.
- C. electrical activity in the muscles responsible for controlling eye movements.
- D. muscle tension in the muscles that are part of the iris.

Question 40

Consciousness is often described as being

- A. selective, continuous and changing.
- B. selective, objective and changing.
- C. selective, subjective and unchanging.
- D. selective, objective and unchanging.

Question 41

As a person changes from being alert to a drowsy state, the brain waves will _____ in frequency and _____ in amplitude.

- A. increase; decrease
- B. increase; increase
- C. decrease; increase
- D. decrease; decrease

Question 42

The galvanic skin response (GSR)

- A. measures sweat.
- B. measures body temperature.
- C. measures electrical conductivity of the skin.
- D. causes electrical conductivity on the skin.

Question 43

The sleep disorder characterised by tiredness during the day, a difficulty falling asleep and a consistently reduced amount of sleep is most likely

- A. hypersomnia.
- B. insomnia.
- C. sleep apnea.
- D. narcolepsy.

Question 44

All psychological research in Australia must

- A. avoid deception.
- B. cause long-term physiological harm.
- C. avoid any minor short-term psychological harm.
- D. be approved by an ethics committee.

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**

Visual information is processed by the primary _____, located in the _____ lobe of the brain.

2 marks

Question 2

Describe two major functions of Wernicke's area.

1. _____

2. _____

2 marks

Question 3

Case studies are an important research tool used to study the brain. However, case studies lack control over variables.

In terms of **research**,

a. why can the lack of control over variables be considered a limitation?

1 mark

b. how can the findings from a case study be useful?

1 mark

Question 4

Electrical stimulation of the brain (ESB) studies are rarely used in today's society to map the location of different functions in the motor and somatosensory cortices.

- a. Explain why ESB is rarely used for this purpose.

1 mark

- b. Name an alternative method that could be used to obtain this information.

1 mark

Question 5

- a. The Alarm Reaction, Stage 1 of the General Adaptation Syndrome (GAS), consists of two phases: _____ and _____.

2 marks

- b. Describe the body's ability to deal with the stressor during the Alarm Reaction stage.

2 marks

Question 6

Elliot gets very nervous when he has to speak in public. However, his nervousness subsides as soon as he starts to speak.

After he has been speaking for five minutes,

- a. which branch of his autonomic nervous system is most active?

1 mark

- b. Elliot will experience physiological changes to his body. Describe two of these changes.

1. _____

2. _____

2 marks

Question 7

Nick's employer accused him of stealing, but Nick claimed he did not do it. The police asked Nick to submit to a polygraph test to see if he was lying.

The police interpreted that the polygraph results indicated that Nick was lying.

- a. Describe what the graph of the galvanic skin response (GSR) would have shown and explain why the police would have therefore assumed that Nick was lying.

2 marks

- b. Assuming Nick was innocent and that he wanted the polygraph to show his innocence, give a reason for the change in the galvanic skin response (GSR) result.

1 mark

AREA OF STUDY 2 – Visual perception**Question 8**

Sasha is sitting at her desk examining the nail polish on her outstretched hand.

- a. She closes one eye after another and notices that her hand appears to move a little to the side.
Why did her hand appear to move a little to the side?

1 mark

- b. Name a binocular depth cue and explain how this depth cue can help Sasha judge the distance of her outstretched right hand.

Name _____

Explanation _____

2 marks

Question 9

What is orientation constancy? Give an example to support your answer.

2 marks

Question 10

Sergio is designing the set for the school play. He wishes to camouflage the stage door so it blends into the wall on the set.

Sergio studies psychology and understands Gestalt principles.

Name one relevant Gestalt principle and explain how Sergio may apply his knowledge of this Gestalt principle in order to camouflage the stage door.

Name of Gestalt principle _____

Explanation _____

2 marks

Question 11

A country town wants to advertise its monthly market. The town council asks an artist to draw an interesting two-dimensional scene of a market along the sides of its main street, with lots of people buying from the stalls.

How can the artist use relative size and height in the visual field to create the appearance of depth and distance in this market scene?

Relative size _____

Height in the visual field _____

4 marks

Question 12

Emma-Jane and Kirk view a picture of an ambiguous figure that can be perceived as a young woman or an old woman.

Emma-Jane perceives the figure as a young woman. Kirk perceives it as an old woman. Their perceptions may be because both Emma-Jane and Kirk have formed a perceptual set for viewing the picture.

Name one factor that may explain their different perceptual sets. Use examples to show how this factor could influence Emma-Jane and Kirk differently when viewing the ambiguous figure.

Name _____

Example – Emma-Jane _____

Example – Kirk _____

3 marks

AREA OF STUDY 3 – States of consciousness**Question 13**

The awareness people have of themselves, others and of the world around them is commonly known as _____.

1 mark

Question 14

Andrew, a taxi driver, travels overseas and finds it difficult to sleep on an aeroplane. On a recent trip from London to Melbourne, Andrew did not sleep for 28 hours and then went straight to work.

a. State two physical effects of sleep deprivation that might impact on Andrew's work.

1. _____

2. _____

2 marks

b. State two psychological effects of sleep deprivation that might impact on Andrew's work.

1. _____

2. _____

2 marks

After work, Andrew went home and slept.

c. What long-term physiological and psychological effects is Andrew most likely to experience as a result of this instance of sleep deprivation?

1 mark

Question 15

Divided attention can often be successfully used when performing tasks. Give an example of how divided attention could be used to perform tasks, and clearly explain **why** it is possible for us to do two things at one time.

Example _____

Explanation _____

2 marks

Question 16

A sleep laboratory researcher wishes to determine when a person has entered Stage 4 sleep.

- a. The brain-wave patterns predominantly found in Stage 4 sleep are _____ in frequency and _____ in amplitude.

2 marks

- b. State two other characteristics of Stage 4 sleep.

1. _____

2. _____

2 marks

Question 17

Doctor Finlay is carrying out research into the causes of insomnia. She selects a sample of participants and randomly divides them into two experimental groups.

- a. Name the research design Doctor Finlay is using.

1 mark

Doctor Finlay uses a single-blind procedure.

- b. Explain the benefit of using a single-blind procedure.

1 mark