



**Victorian Certificate of Education
2007**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Figures

Words

Letter

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PSYCHOLOGY
Written examination 1

Wednesday 13 June 2007

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	6	6	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**

Which parts of the body are coordinated by the largest area of the somatosensory cortex?

- A. torso and legs
- B. feet and legs
- C. feet and hands
- D. hands and face

Question 2

Which statement relating to the cerebral cortex is **incorrect**?

- A. The cerebral cortex is approximately 3 mm thick.
- B. The wrinkled nature of the cerebral cortex decreases its surface area.
- C. The cerebral cortex covers most of the forebrain.
- D. The cerebral cortex is divided into 4 lobes.

Question 3

Visual information is first transmitted to the _____ for processing.

- A. primary visual cortex
- B. association areas
- C. primary auditory cortex
- D. secondary visual cortex

Question 4

Visual information received by the right eye is processed in the

- A. parietal lobe of the left hemisphere only.
- B. occipital lobe of the left hemisphere only.
- C. parietal lobe of right and left hemispheres.
- D. occipital lobe of right and left hemispheres.

Question 5

For most people, a function that is performed mainly by the right hemisphere is

- A. controlling speech.
- B. receiving and processing sensations from the right side of the body.
- C. detecting emotions.
- D. evaluating problems.

Question 6

Lee is reading his psychology text book.

Which part of the brain plays the most crucial role in helping him **comprehend** what is written?

- A. Broca's area
- B. Wernicke's area
- C. occipital lobe
- D. parietal lobe

Question 7

Planning, reasoning and logical thinking are major functions of the _____ lobe.

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

Question 8

The brain stimulation method usually involves a _____ electrical current to be applied to a _____ in the brain.

- A. weak; specific location
- B. strong; specific location
- C. weak; general region
- D. strong; general region

Question 9

One disadvantage of using an electroencephalograph (EEG) to investigate the brain is that

- A. it cannot be used with a range of patients such as infants.
- B. it is invasive.
- C. it does not provide detailed information about brain function compared to positron emission tomography (PET).
- D. it is expensive compared to functional magnetic resonance imaging (fMRI).

Question 10

Which of the following is **incorrect** about computerised tomography (CT) scans?

- A. CT scans provide information about the function and extent of damage to the brain.
- B. The risks to the patient associated with CT scans are negligible.
- C. CT scans usually require an injection into the bloodstream.
- D. CT scans use X-rays taken at various angles to create an image of the brain.

Question 11

The functional magnetic resonance imaging (fMRI) scan provides a detailed image of the brain.

It works on the knowledge that

- A. blood flow to the brain is decreased when it is active.
- B. radioactive dyes stimulate brain activity.
- C. active brain neurons are easier to photograph.
- D. more oxygen is required by active brain neurons.

Question 12

Our voluntary movements are controlled through

- A. the autonomic nervous system.
- B. the muscular nervous system.
- C. the sympathetic nervous system.
- D. the somatic nervous system.

Question 13

The central nervous system (CNS) consists of

- A. the somatic and autonomic nervous systems.
- B. the brain and spinal cord.
- C. the brain and vertebrae.
- D. the brain and somatic nervous system.

Question 14

Your heart keeps beating even though you may be unconscious because the autonomic nervous system (ANS) is

- A. self-regulating and not dependent on voluntary control by the brain.
- B. self-regulating and not dependent on involuntary control by the brain.
- C. mainly controlled by the motor cortex.
- D. mainly controlled by the cerebral cortex.

Question 15

When using a polygraph as a lie detector, control questions are used to establish a baseline response.

Control questions are

- A. simple non-emotional questions.
- B. simple emotional questions.
- C. emotional questions that require in-depth responses.
- D. a mixture of non-emotional and emotional questions.

Question 16

A major limitation of using a polygraph as a lie detector is that

- A. physiological changes associated with guilt are different from those associated with fear and anxiety.
- B. similar physiological responses occur with different emotions.
- C. a lie can be detected as the truth if a person self-induces pain during a relevant question.
- D. people with naturally low physiological arousal levels are often detected as lying despite telling the truth.

Question 17

A stressful experience

- A. is subjective in nature.
- B. is caused only by external events.
- C. is accurately measured by self-report.
- D. is never desirable.

Question 18

Paul is undergoing tests related to seizures he has experienced. Paul is informed that, while he is undergoing the tests, the doctor would like to carry out some non-invasive and harmless research on Paul's brain for a research project.

Before the doctor carries out the research he must

- A. get other patients to also participate in the study.
- B. get approval by the ethics committee.
- C. debrief the patient.
- D. get consent by asking the patient to nod his head in agreement.

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

Visual reception involves the

- A. delivery of the visual information to the appropriate lobe for interpretation.
- B. detection of light by the photoreceptors on the retina.
- C. transmission of a visual image to the brain.
- D. interpretation of the visual information in the brain.

Question 20

Visual information is transmitted from the retina to the appropriate lobe in the brain via the _____ nerve.

- A. optical
- B. occipital
- C. optic
- D. optic chiasm

Question 21

Luisa woke at night in her darkened bedroom. At first she could not see anything, but after a few minutes, due to the _____ in her eyes, she could see the shape of her dressing gown hanging on the door. When she turned on the light she could see the colour of the dressing gown, due to the action of her _____ .

- A. cones, rods
- B. rods, cones
- C. rods, rods
- D. cones, cones

Question 22

On a dark night, Melissa asks her friend to walk towards her from a distance with a small torch. This is repeated a number of times.

The absolute threshold for this light stimulus in these conditions would be the point at which she

- A. first perceives the torch light.
- B. can notice a small change in the torch light 50% of the time.
- C. can perceive the torch light 50% of the time.
- D. can perceive the torch light 100% of the time.

Question 23

A person with an eyepatch over one eye for a long period of time could still perceive depth and distance by using the cues of

- A. interposition and relative size.
- B. texture gradient and retinal disparity.
- C. convergence and retinal disparity.
- D. linear perspective and convergence.

Question 24

Mark is hanging his red shirt, blue shirt and white shirt outside in the sun. Suddenly the sun is covered by a large, dark cloud.

The statement that best describes the effect on Mark's visual perception is

- A. the white shirt now appears dimmer than the red and blue shirts.
- B. the red and blue shirts now appear dimmer than the white shirt.
- C. the red and white shirts now appear brighter than the blue shirt.
- D. all three shirts appear as bright as they did previously.

Question 25

When an object is identified as a figure separate from its background, the object is more likely to

- A. have a distinct shape.
- B. be placed behind another object.
- C. be just as noticeable as its background.
- D. be less dominant than its background.

Question 26

Accommodation

- A. enables our eyes to turn inwards to focus on the object.
- B. is a binocular depth cue.
- C. enables a sharp or focused image to be produced on the retina.
- D. is possible because our eyes are 6 to 7 cm apart.

Question 27

During accommodation, the _____ changes shape and _____ when focusing on a far object.

- A. pupil; contracts
- B. pupil; dilates
- C. lens; bulges
- D. lens; elongates

Question 28

_____ are misinterpretations of visual stimuli that tend to be perceived by most people consistently over time, even with knowledge and understanding of this misinterpretation.

- A. perceptual sets
- B. visual illusions
- C. delusions
- D. hallucinations

Question 29

The Müller-Lyer illusion is

- A. more noticeable when the two lines of equal length are vertical rather than horizontal.
- B. more noticeable when the two lines of equal length are horizontal rather than vertical.
- C. more noticeable when there are lines with inward or outward directed angles (arrowheads or fishtails) at the ends of the two lines rather than with inward or outward directed semicircles or circles.
- D. just as noticeable whether there are lines with inward or outward directed angles (arrowheads or fishtails) at the ends of the two lines or with inward or outward directed semicircles or circles.

Question 30

A control group must be

- A. different from the experimental group in all respects except the experimental manipulation.
- B. similar to the experimental group in all respects including the experimental manipulation.
- C. similar to the experimental group in all respects except the experimental manipulation.
- D. similar to the experimental group in all respects except the control group may experience a smaller amount of experimental manipulation.

Question 31

A researcher wishes to measure the effect of prior experience in forming a perceptual set for perceiving a visual stimulus among girls. She selects those participants who are at school on the day of her study.

This sample is

- A. a representative subgroup of the population of interest.
- B. a stratified sample of the population of interest.
- C. not representative of the population of interest.
- D. a random sample of the population of interest.

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

Which of the following descriptions of human consciousness is most accurate?

- A. awareness of the world around us and ourselves, including thoughts and feelings
- B. knowledge of events taking place in the world
- C. being able to understand and express our thoughts, feelings and knowledge of the world
- D. awareness of different situations that may cause an altered state of consciousness

Question 33

Loula has been knitting for 20 years and often knits while watching television. While knitting the basic pattern she mostly uses _____ but knitting a complex pattern mostly involves _____.

- A. selective attention; focused attention
- B. automatic processing; controlled processing
- C. controlled processing; focused attention
- D. divided attention; automatic processing

Question 34

Fiona has two young toddlers and works from home. She is able to concentrate on her computer work and ‘shut out’ the noise of her children playing.

This shows that Fiona is most likely using

- A. controlled consciousness.
- B. divided attention.
- C. automatic focusing.
- D. selective attention.

Question 35

Which of the following methods is **unlikely** to be used to determine different states of consciousness?

- A. self-report
- B. computerised tomography (CT) scan
- C. heart rate
- D. body temperature

Question 36

Some friends are having a sleepover. It is midnight but Julie is still very excited and chatty. Yasmin, however, is very tired and about to fall asleep. Sasha has already been asleep for 30 minutes. Of these three girls, it is most likely that at this moment _____ will have the **highest frequency** brainwaves, and _____ will have the **highest amplitude** brainwaves.

- A. Sasha; Julie
- B. Yasmin; Sasha
- C. Sasha; Yasmin
- D. Julie; Sasha

Question 37

Research into sleep patterns indicates that the number of episodes spent in rapid eye movement (REM) sleep per night is typically around

- A. two.
- B. three.
- C. four to five.
- D. seven to eight.

Question 38

Hypnic jerks are

- A. more commonly known as sleep spindles.
- B. more likely to occur in REM sleep.
- C. an indicator that a person is dreaming.
- D. more likely to occur in Stage 1 sleep.

Question 39

Dreams in non-rapid eye movement (NREM) sleep

- A. tend to be short-lived compared to REM dreams.
- B. tend to be longer compared to REM dreams.
- C. tend to be more vivid compared to REM dreams.
- D. do not occur.

Question 40

Sleep spindles are typically characterised by

- A. brief bursts of high amplitude.
- B. brief bursts of high frequency.
- C. a single surge of high amplitude.
- D. a single surge of high frequency.

Question 41

After going without sleep for 4 days, a person is most likely to

- A. find it very difficult to get to sleep.
- B. suffer long-term physiological effects.
- C. sleep for 24 hours or more.
- D. suffer no long-term psychological effects.

Question 42

Lachlan works in a fruit-processing factory. His job is simply to look for fruit with marked skins and put them in a separate crate.

If he has gone without sleep for several days, he is most likely to

- A. continue working efficiently as the task is not difficult.
- B. sort the fruit as efficiently as usual but not listen as carefully to instructions.
- C. make more mistakes than usual in checking the fruit for marked skins.
- D. work faster than usual as he is concentrating more because he knows he is tired.

Question 43

A person is most likely to remember a

- A. nightmare.
- B. night terror.
- C. sleepwalking episode.
- D. sleep talking episode.

Question 44

A person diagnosed with hypersomnia is likely to

- A. easily wake after a full night's sleep.
- B. wake with difficulty after a full night's sleep.
- C. wake prematurely from sleep.
- D. take longer than 30 minutes to go back to sleep if they wake during sleep.

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**

What is the main function of the corpus callosum?

1 mark

Question 2

Case studies are used in brain research. Outline one value and one limitation of using case studies for brain research.

Value _____

Limitation _____

2 marks

Question 3

Corey is undergoing a positron emission tomography (PET) scan. He is asked to perform some cognitive tasks during the PET scan.

a. What radioactive substance in the bloodstream is detected by the PET scan?

1 mark

b. What information about the functioning of the brain will the PET scan provide during the performance of the cognitive tasks?

1 mark

c. Name one other imaging technique that could be used to find out similar information to the PET scan.

1 mark

Question 4

Charlotte is diagnosed with Broca's aphasia.

- a. Where is Broca's area located?

1 mark

- b. Describe two ways in which her speech could be impaired.

1. _____

2. _____

2 marks

Question 5

Pauline was almost hit by a car when she ran across the road.

- a. The survival response which prepares Pauline's body to deal with the immediate threat is called the

_____.

The _____ branch of the autonomic nervous system is responsible for returning her body to homeostasis after this survival response.

2 marks

- b. State **one** physiological change Pauline would initially experience during the survival response, and explain how this change might improve her chances of survival.

Physiological change _____

Explanation _____

2 marks

Question 6

Suzanne suffers a heart attack. Her husband blames this on a prolonged stressful environment she has experienced at work.

According to the general adaptation syndrome (GAS), there is a series of stages that we go through in response to a stressful situation.

- a. What is the **name** of the final stage of the GAS?

1 mark

- b. What are two psychological problems that Suzanne may have experienced that are associated with the final stage of the GAS?

1. _____

2. _____

2 marks

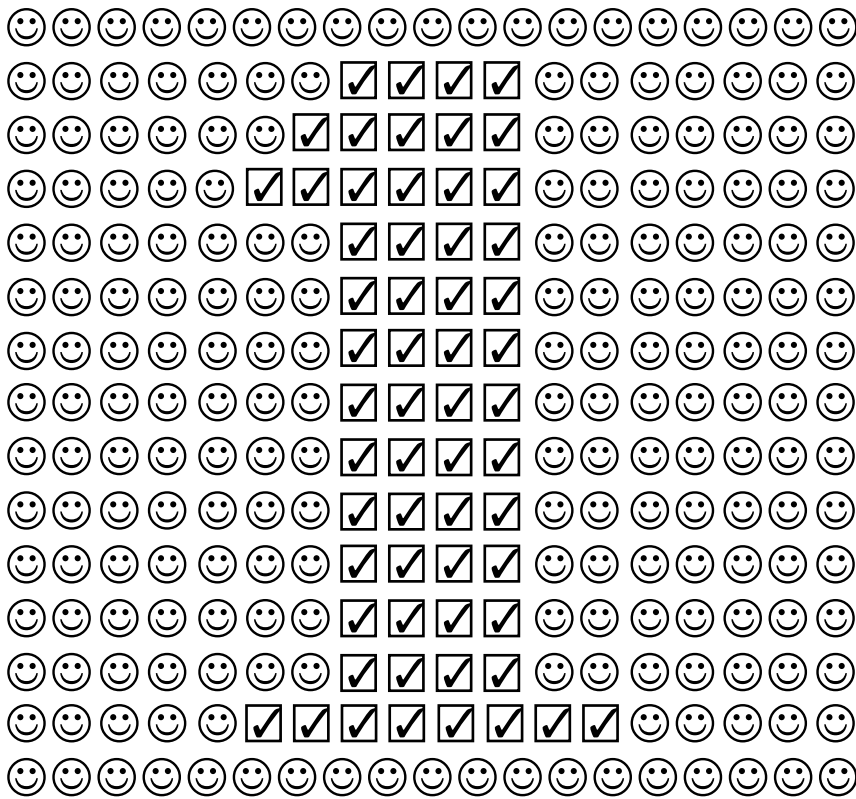
- c. Briefly explain how Suzanne's physiological arousal due to stress can both help **and** lead to problems.

2 marks

AREA OF STUDY 2 – Visual perception

Question 7

Question 7 relates to the following picture.



The pattern in this picture can be perceived as the number 1.

Name **two** Gestalt principles that are applied when perceiving the number 1 in this picture. Clearly explain how each principle assists the viewer to perceive the number 1 in **this** picture.

Name _____

Explanation _____

Name _____

Explanation _____

4 marks

Question 8

Maya is a talented painter. She paints a landscape on a flat surface that shows depth and distance.

- a. Name one monocular depth cue that **cannot** be used to portray depth in Maya’s painting.

1 mark

Maya plans to draw a cloud that is far in the distance compared to the other clouds.

- b. According to height in the visual field, where should she draw the cloud so it is perceived as being distant?

1 mark

Question 9

Use an example to clearly explain how context affects the formation of a perceptual set in visual perception.

2 marks

Question 10

- a. The Ames room illusion is produced by our tendency to maintain _____ constancy over _____ constancy.

2 marks

- b. In terms of its design, explain how the Ames room creates an illusion.

3 marks

Question 11

Psychologists have to follow a national set of ethical guidelines when conducting research. What is the most important reason for having a national set of ethical guidelines?

1 mark

AREA OF STUDY 3 – States of consciousness

Question 12

An altered state of consciousness is different from normal waking consciousness in a number of ways.

Give an example of an altered state of consciousness and identify **two** psychological characteristics that could distinguish this example from normal waking consciousness.

Example _____

Characteristics

1. _____

2. _____

1 + 2 = 3 marks

Question 13

Galvanic skin response (GSR) can indicate an altered state of consciousness.

Archie is in an altered state of consciousness with heightened arousal. Compared to his normal state, **how** would his GSR reading be different and **why**?

2 marks

Question 14

A number of devices are often used to monitor sleep patterns in sleep clinics.

Name one of these devices, list what it measures, and clearly explain **how** its recordings can distinguish between rapid eye movement (REM) and non-rapid eye movement (NREM) sleep.

Name _____

Measure _____

Explanation _____

1 + 1 + 1 = 3 marks

Question 15

Mario has been attending a sleep clinic and has been told he has sleep apnea.

- a. What is sleep apnea?

1 mark

- b. The cause of Mario's sleep apnea needs to be determined before treatment can be considered. Outline two possible causes of his sleep apnea.

1. _____

2. _____

2 marks

Question 16

Tegan is planning to carry out a study that considers the effects of caffeine on sleep. She plans to have two independent groups of participants. One group will take a low dose of caffeine while the other will drink a high dose of caffeine.

Tegan does not want the participants to know to which group they have been allocated.

- a. Name and define the effect that could occur if participants knew to which group they had been allocated.

Name _____

Definition _____

2 marks

Tegan's study involves some deception.

- b. When is deception allowed according to ethical guidelines?

1 mark