

STUDENT NUMBER

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# PSYCHOLOGY

## Written examination

Thursday 30 October 2014

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 11.45 am (2 hours 30 minutes)

### QUESTION AND ANSWER BOOK

#### Structure of book

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	65	65	65
B	15	15	60
C	3	3	15
			Total 140

- 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 36 pages.
- Answer sheet for multiple-choice questions.
- Additional space is available at the end of the book if you need extra paper to complete an answer.

#### 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.

**Question 1**

Which one of the following statements is true of the retrieval failure theory?

- A. Forgetting is permanent and information that is forgotten is lost forever.
- B. Forgetting is not permanent and information may be retrieved once the right cue is presented.
- C. Retrieval failure occurs more commonly in older people as their neural pathways have decayed.
- D. Retrieval failure occurs equally in older people and younger people due to the serial position effect.

**Question 2**

The ICD-10

- A. places a person's subjective symptoms on a continuum.
- B. is an example of the categorical approach to classifying mental illness.
- C. is an example of the dimensional approach to classifying mental illness.
- D. uses only biological measures, such as neurotransmitter levels, to diagnose mental illness.

**Question 3**

'Chunking' is best described as a method of increasing the

- A. duration of short-term memory.
- B. amount of space in short-term memory.
- C. speed of neural processing in short-term memory.
- D. amount of information that can be stored in short-term memory.

**Question 4**

Lisa gets upset when she remembers her cat being run over by a car. Whenever her family talks about it, Lisa says 'I don't want to think about it', and finds she is unable to remember many details of the event.

This is an example of

- A. repression.
- B. suppression.
- C. retrograde amnesia.
- D. anterograde amnesia.

Use the following information to answer Questions 5–8.

Mikaela, a healthy adult female, is learning Italian for the first time.

**Question 5**

As she forms new memories of the Italian language, Mikaela is most likely to experience an increase in

- A. the size of her amygdala.
- B. gamma-amino butyric acid (GABA) levels.
- C. the number of neurons in her hippocampus.
- D. the number of neural connections in her temporal lobe.

**Question 6**

When Mikaela was studying for her first Italian examination, a clock was ticking very loudly in her bedroom. Mikaela was not distracted by the sound of the clock because learning Italian was

- A. a controlled process; Mikaela had focused attention.
- B. a controlled process; Mikaela had divided attention.
- C. an automatic process; Mikaela had divided attention.
- D. an automatic process; Mikaela had focused attention.

**Question 7**

Mikaela studied hard for her end-of-year Italian examination and was very well prepared. She scored high marks on her practice examination. However, when she began the real examination, she could not remember what she had learned.

This is most likely due to

- A. inadequate encoding.
- B. insufficient rehearsal.
- C. difficulty with retrieval.
- D. organic causes of forgetting.

**Question 8**

To maximise her ability to remember what she had learned, the night before her examination Mikaela should

- A. stay awake all night and study Italian.
- B. play a recording of her Italian language notes while she sleeps.
- C. briefly revise what she has learnt and have a good night's sleep.
- D. finish studying Italian during the day and study French at night to take her mind off the Italian examination.

**Question 9**

An example of problem-focused coping is

- A. venting.
- B. wishful thinking.
- C. escape-avoidance.
- D. redefining the stressor in a more manageable way.

**Question 10**

One disadvantage of the dimensional approach to classifying mental disorders is that it

- A. results in the labelling of disorders.
- B. is too time-consuming to be used widely.
- C. does not enable improvement in mental health to be recognised.
- D. is more likely to promote stigma associated with mental disorders.

**Question 11**

When Geoff feels excited, which parts of his nervous system are most likely to be activated?

- A. the sympathetic branch of the somatic nervous system
- B. the sympathetic branch of the autonomic nervous system
- C. the parasympathetic branch of the somatic nervous system
- D. the parasympathetic branch of the autonomic nervous system

**Question 12**

From a psychological perspective, being mentally healthy is best described as

- A. the absence of a mental illness.
- B. being popular and having lots of friends.
- C. rarely experiencing negative emotions, such as anger.
- D. using one's cognitive, emotional and social abilities effectively.

**Question 13**

The primary cortex areas located in the frontal and temporal lobes are, respectively, the

- A. motor and auditory cortices.
- B. visual and auditory cortices.
- C. somatosensory and visual cortices.
- D. motor and somatosensory cortices.

Use the following information to answer Questions 14–16.

Megan was in non-rapid eye movement (NREM) stage 2 sleep when her alarm rang at 6 am. She woke up instantly, refreshed and ready for the day.

**Question 14**

If Megan were attached to an electroencephalograph (EEG), which of the following changes to her brain waves would be likely to be observed when she woke up compared to just before waking?

- A. an increase in frequency and a decrease in amplitude
- B. a decrease in frequency and an increase in amplitude
- C. no change in amplitude
- D. no change in frequency

**Question 15**

When Megan was in stage 2 sleep, compared to when she was awake, it is likely that

- A. the content of her thoughts would be more limited.
- B. an electromyograph (EMG) would show high-frequency, high-amplitude waves.
- C. an electro-oculargraph (EOG) would show low-frequency, high-amplitude waves.
- D. her perception of the birds tweeting outside her bedroom window would be reduced.

**Question 16**

If Megan's alarm had rung after she had been asleep for only a couple of hours, it is likely that

- A. she would wake easily as she would still be in the first sleep cycle.
- B. it would be difficult to wake her as she is likely to be in NREM stage 1 sleep.
- C. it would be difficult to wake her as she is likely to be in NREM stages 3 and 4 sleep.
- D. it would be difficult to wake her as she is likely to be in rapid eye movement (REM) sleep.

*Use the following information to answer Questions 17–19.*

Madeleine was a lawyer who had a very big court case to prepare. For seven days prior to the court case, she stayed back late at the office. During this time, she managed to have only five hours of sleep a night.

**Question 17**

If Madeleine were asked to complete some simple tasks and some complex tasks after suffering partial sleep deprivation for seven days, it is likely that she would perform

- A. well on both the simple and complex tasks.
- B. poorly on both the simple and complex tasks.
- C. poorly on the complex tasks but well on the simple tasks.
- D. poorly on the simple tasks but well on the complex tasks.

**Question 18**

One of the complex tasks required Madeleine to complete a jigsaw puzzle.

During this task, the lobe of the brain that would show the greatest neuronal activation would be the

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

**Question 19**

Madeleine found it much easier to recall her opening address in court when she rehearsed it first in the empty courtroom.

This is most likely due to

- A. elaborative rehearsal.
- B. state-dependent cues.
- C. context-dependent cues.
- D. the use of narrative chaining.

**Question 20**

The part of the human brain that contains almost three-quarters of the brain's neurons, and that is responsible for reasoning, planning and imagining is the

- A. frontal lobe.
- B. parietal lobe.
- C. cerebral cortex.
- D. cerebral hemisphere.

Use the following information to answer Questions 21–23.

Recently, Jake has been experiencing seizures that have increased in frequency and duration. Jake is undergoing tests related to his seizures.

**Question 21**

One of the tests involves Jake staring at a dot on a blank screen and trying to name objects flashed to his left visual field.

During this task, the information received by Jake's right eye would be processed by the

- A. left and right occipital lobes.
- B. left and right parietal lobes.
- C. right parietal lobe only.
- D. left occipital lobe only.

**Question 22**

A brain scan shows a tumour in the lower section of Jake's left frontal lobe.

Jake's doctor explains that there is a risk that removing the tumour might also cause him to have difficulty with

- A. language production and initiation of motor movements.
- B. processing of sensory information and spatial orientation.
- C. processing of visual information and recognition of objects.
- D. processing of auditory information and language comprehension.

**Question 23**

Split-brain surgery is rarely done today.

However, if split-brain surgery were required, Jake's corpus callosum would be severed to

- A. ensure that the cerebral cortex no longer initiates seizures.
- B. stop the transfer of neural impulses between the lobes in his brain.
- C. ensure that both hemispheres of his brain are able to function together.
- D. stop the transfer of neural impulses between the cerebral hemispheres of his brain.

**Question 24**

As a person ages, the total amount of time that they spend asleep each night

- A. decreases, while the proportion of time spent in REM sleep increases.
- B. decreases, while the proportion of time spent in NREM sleep increases.
- C. increases, while the proportion of time spent in REM sleep also increases.
- D. does not change in relation to the percentage of time spent in REM sleep and NREM sleep.

**Question 25**

Dr Lewis is treating John, whose memory has declined significantly over the past 12 months.

Dr Lewis is **not** able to make a conclusive diagnosis of Alzheimer's disease because

- A. John's memory for semantic information is still good.
- B. Alzheimer's disease can only be confirmed via an autopsy.
- C. John is only 45 years old and Alzheimer's disease occurs only in elderly people.
- D. John is still able to do everyday activities, such as dressing, cooking and cleaning his house.

*Use the following information to answer Questions 26–29.*

Fraser hit his head playing hockey and found he was unable to remember the events leading up to the hockey game.

**Question 26**

Fraser was most likely suffering from

- A. proactive amnesia.
- B. retroactive amnesia.
- C. retrograde amnesia.
- D. anterograde amnesia.

**Question 27**

The type of memory affected by Fraser's amnesia was his

- A. sensory memory.
- B. working memory.
- C. short-term memory.
- D. long-term memory.

**Question 28**

Fraser's wife noticed that when he was shaving, he did not shave the left side of his face and, when he dressed, he did not put a sock or shoe on his left foot.

The area of Fraser's brain that has most likely been damaged is the

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

**Question 29**

Fraser was asked by the hospital to take part in a case study to examine the effects of his injury on the functioning of his brain.

In this situation, a case study would be useful because

- A. a case study uses only non-invasive techniques to study the brain.
- B. case studies could provide ideas for further research into brain injuries.
- C. a case study is an experimental method that collects only qualitative data.
- D. results from Fraser's case study could be generalised to other patients with different brain injuries.



Use the following information to answer Questions 30–32.

Jo experienced a head injury during a cycling accident. Afterwards, she had difficulty naming familiar places and people, and could not remember the meaning of words or recognise familiar faces, pictures and music.

**Question 30**

A scan of Jo's brain is most likely to show damage to the

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

**Question 31**

Jo is also likely to have difficulty

- A. completing jigsaw puzzles.
- B. forming new memories of facts and events.
- C. learning new skills or procedures, such as changing a car tyre.
- D. undertaking normal daily activities, such as driving or dressing herself.

**Question 32**

A witness to Jo's accident is likely to recall events most accurately if they

- A. return to the scene of the accident.
- B. are provided with leading questions.
- C. use a mnemonic device to remember the scene.
- D. are given the opportunity to ask Jo what happened.

**Question 33**

Taiga's wife lost her job and Taiga had to start working 60 hours a week to make sure they could pay their bills. During the next two months, Taiga experienced several viral infections. He went to his doctor, who said he was suffering from stress.

Taiga's recurring viral infections were most likely due to

- A. an increase in cortisol.
- B. a decrease in cortisol.
- C. a decrease in noradrenaline.
- D. a decrease in allostatic load.

**Question 34**

A characteristic of biofeedback as a tool for managing stress is that

- A. it deals with the cause of the stress.
- B. its effects translate easily from the laboratory to the real world.
- C. it can effectively treat stress-related illnesses, such as hypertension.
- D. it monitors physiological responses, such as heart rate and body temperature, without instruments.

**Question 35**

Body temperature can be used to study sleep because it

- A. is not linked to alertness.
- B. follows a regular daily cycle.
- C. always reaches its lowest level during REM sleep.
- D. is higher during sleep than in normal waking consciousness.

**Question 36**

This year Dave married, started a new business and his first child was born.

Dave's allostatic load would have

- A. changed, depending on how he appraised these situations.
- B. stayed the same.
- C. decreased.
- D. increased.

**Question 37**

Which one of the following is an example of allostasis?

- A. maintaining constant blood pressure
- B. maintaining the body's temperature at 37 °C
- C. an increase in the rate of respiration in anticipation of exercise
- D. a decrease in heart rate in response to increased blood pressure

**Question 38**

In Lazarus and Folkman's Transactional Model of Stress and Coping, the difference between a primary appraisal and a secondary appraisal is the

- A. primary appraisal is always conscious, whereas the secondary appraisal is not.
- B. secondary appraisal is always conscious, whereas the primary appraisal is not.
- C. primary appraisal evaluates the situation, whereas the secondary appraisal evaluates resources for coping.
- D. primary appraisal involves problem-focused coping strategies, whereas the secondary appraisal involves emotion-focused coping strategies.

**Question 39**

The sensory function of the somatic nervous system can be demonstrated by

- A. the activation of the fight-flight response.
- B. moving your hand away from a hot stove reflexively.
- C. the homeostatic response to an increase in body temperature.
- D. experiencing the sensation of heat when holding a cup of coffee.

**Question 40**

Last year, Zoe was taught by Mrs Hopper. This year, Mrs Hopper teaches Zoe's sister, Pia, but she often calls Pia by Zoe's name.

This is known as

- A. retrograde amnesia.
- B. anterograde amnesia.
- C. proactive interference.
- D. retroactive interference.

**Question 41**

According to Craik and Lockhart's levels of processing model, Daniel is more likely to remember the name of his new classmate if he notices that their

- A. first name is hyphenated.
- B. first and last names rhyme.
- C. name contains two sets of double letters.
- D. last name is the same as that of Daniel's doctor.

**Question 42**

If Anna learns the definition of episodic memory by remembering that it refers to **episodes** in her life, she is using

- A. a mnemonic device.
- B. elaborative rehearsal.
- C. maintenance rehearsal.
- D. semantic network theory.

*Use the following information to answer Questions 43–45.*

Romish began to crawl at 10 months and started to read and write simple words at age four. His parents tried to teach him to walk, and to read and write at the earliest possible age by demonstrating the desired behaviour, and then smiling and clapping if Romish reproduced a similar behaviour.

**Question 43**

Which of the following best accounts for Romish beginning to crawl at 10 months, and beginning to read and write at age four, respectively?

- A. maturation, learning
- B. classical conditioning, learning
- C. maturation, classical conditioning
- D. observational learning, maturation

**Question 44**

Romish's parents were most likely to have been able to influence the age at which Romish started to

- A. walk.
- B. read and write.
- C. walk and write.
- D. walk, read and write.

**Question 45**

The strategy used by Romish's parents is best described as using elements of

- A. operant conditioning.
- B. classical conditioning.
- C. observational learning and operant conditioning.
- D. observational learning and classical conditioning.

Use the following information to answer Questions 46–49.

Dan was born in England, but when he was five years old, his family moved to Australia. When Dan started school in Australia, the other boys teased him because they did not like his English accent; they wanted him to speak with an Australian accent. Dan quickly learned to speak with an Australian accent at school so that the boys would stop teasing him.

**Question 46**

Dan quickly learned to speak with an Australian accent as a result of

- A. negative reinforcement.
- B. positive reinforcement.
- C. response cost.
- D. punishment.

**Question 47**

Mr Zhang, the class teacher, tried to make the boys stop teasing Dan. Mr Zhang's first strategy was to take away recess time from any boy he caught teasing Dan.

This strategy is best known as

- A. punishment.
- B. response cost.
- C. positive reinforcement.
- D. negative reinforcement.

**Question 48**

Mr Zhang's second strategy was to praise the boys if they were not teasing Dan when he checked on them. The boys never knew when Mr Zhang was going to check on them; sometimes he checked on the boys every 10 minutes, sometimes he checked only twice a day and sometimes he did not check at all.

The schedule of reinforcement in Mr Zhang's second strategy was

- A. variable interval.
- B. fixed interval.
- C. variable ratio.
- D. fixed ratio.

**Question 49**

Unlike Dan, Dan's parents did not end up speaking with an Australian accent because

- A. Dan's parents were too old for their brains to form any new neurological pathways.
- B. adult brains display less plasticity for language acquisition than a young child's brain.
- C. adult brains display more plasticity for language acquisition than a young child's brain.
- D. the development of brain plasticity means that it is impossible to learn a new accent after childhood.

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*Use the following information to answer Questions 50–53.*

Edward loved and admired his grandmother. Edward always watched carefully as his grandmother knitted. Edward's grandfather always praised Edward's grandmother for her beautiful knitting. Edward praised her too.

One day, Edward decided to try knitting. His grandfather saw him knitting and praised his skill. When Edward's grandmother heard that he was trying to knit, she spent an hour teaching him and praised him on his efforts.

**Question 50**

The type of learning demonstrated by Edward when he first tried knitting is best described as

- A. social learning.
- B. operant conditioning.
- C. classical conditioning.
- D. trial-and-error learning.

**Question 51**

In this scenario, the model is

- A. Edward.
- B. Edward's grandfather.
- C. Edward's grandmother.
- D. both Edward and his grandfather.

**Question 52**

The likelihood of Edward correctly reproducing the behaviour of knitting the first time was influenced by the fact that

- A. Edward loved and admired his grandmother.
- B. Edward's grandmother praised Edward for knitting.
- C. Edward's grandmother took the time to teach Edward to knit.
- D. Edward was praised by his grandfather for his knitting skills.

**Question 53**

Vicarious reinforcement may have occurred when

- A. Edward praised his grandmother.
- B. Edward's grandfather praised Edward's knitting skills.
- C. Edward heard his grandfather praise his grandmother's knitting.
- D. Edward's grandmother taught Edward more knitting skills and then praised him.

Use the following information to answer Questions 54–57.

Miss Athorn set up a practical activity for her Psychology class. She gave each student a packet of sherbet powder with a small spoon.

First, Miss Athorn asked the students to put a spoonful of sherbet powder on their tongues and notice the salivation response produced by tasting the sherbet. Then, she told the students to continue with their work, but to be ready to quickly eat a spoonful of sherbet powder every time she blew a whistle.

Miss Athorn blew her whistle 10 times during the lesson and, each time, the students ate some sherbet powder. Towards the end of the class, Miss Athorn took the sherbet powder away. Then she blew the whistle again and asked the students if they noticed a salivation response.

Most of the class reported that they salivated.

Miss Athorn then blew the whistle five more times without the students having any sherbet powder. By the fifth time, all of the students said that salivation had stopped.

#### Question 54

The unconditioned stimulus (UCS) and the conditioned stimulus (CS) respectively were

- A. whistle, salivation to tasting sherbet.
- B. salivation to tasting sherbet, whistle.
- C. whistle, sherbet powder.
- D. sherbet powder, whistle.

#### Question 55

The unconditioned response (UCR) and the conditioned response (CR) respectively were

- A. salivation to tasting sherbet, no response.
- B. no response, salivation to tasting sherbet.
- C. salivation to the whistle, salivation to tasting sherbet.
- D. salivation to tasting sherbet, salivation to the whistle.

#### Question 56

Classical conditioning of the students' salivation response was most clearly demonstrated

- A. when the students first tasted the sherbet powder.
- B. during the 10 times that Miss Athorn blew the whistle, and the students tasted the sherbet powder and experienced salivation.
- C. towards the end of the lesson, when Miss Athorn blew the whistle and the students experienced salivation for the first time without the sherbet powder.
- D. at the end of the lesson, when Miss Athorn blew the whistle five times and, by the fifth time, no student experienced salivation without the sherbet powder.

#### Question 57

At the start of the next lesson, Miss Athorn blew the whistle and asked if any student had experienced salivation.

Two students said that they experienced salivation at the sound of the whistle.

The experience of these two students demonstrated

- A. spontaneous recovery of the CR.
- B. spontaneous recovery of the UCR.
- C. that the CR had not been extinguished.
- D. that the UCR had not been extinguished.

Use the following information to answer Questions 58 and 59.

Iwan was feeling hungry and so he tried to open a can of baked beans with his complicated new can-opener. He tried lots of different ways to work the can-opener. He was becoming very frustrated when he tried one more time and finally managed to open the can. Iwan felt relieved and enjoyed eating the baked beans. The next couple of times he wanted to open a can, it took him only a few tries until he got the can-opener to work. Soon he could open a can on the first try.

**Question 58**

In the beginning, the type of learning demonstrated by Iwan is best described as

- A. social learning.
- B. classical conditioning.
- C. observational learning.
- D. trial-and-error learning.

**Question 59**

In terms of operant conditioning, an essential element to Iwan's future success in opening a can on the first attempt is the

- A. variable schedule of reinforcement.
- B. complicated nature of the can-opener.
- C. feeling of relief and eating baked beans after opening the can.
- D. repeated association of the UCS of the can of beans with the CS of the can-opener.

**Question 60**

Jessica is left-handed and uses her left hand for all fine motor tasks, including writing, using scissors and using a mouse on a computer.

Jessica could be expected to have a higher density of motor neurons associated with the fingers and hand in her

- A. left primary motor cortex.
- B. right primary motor cortex.
- C. left primary somatosensory cortex.
- D. right primary somatosensory cortex.

**Question 61**

Alzheimer's disease is best explained by

- A. the decay theory.
- B. motivated forgetting.
- C. the interference theory.
- D. the retrieval failure theory.

**Question 62**

The primacy effect of the serial position effect suggests that

- A. long-term memory has a limited duration.
- B. short-term memory has a limited duration.
- C. material that is rehearsed can pass into long-term memory.
- D. material that is rehearsed can stay in short-term memory indefinitely.



*Use the following information to answer Questions 63–65.*

Dr Rose is a psychologist working in a busy clinic and she has three clients waiting to see her. She has to use the most appropriate and efficient strategy to treat each of her clients.

**Question 63**

The first client has decaying teeth, but he has developed a phobia of going to the dentist.

To treat the phobia, Dr Rose is most likely to use

- A. shaping.
- B. aversion therapy.
- C. a token economy.
- D. graduated exposure.

**Question 64**

Dr Rose's second client is a mother who wants advice on how to improve her child's behaviour.

To change the child's behaviour, Dr Rose is most likely to recommend

- A. flooding.
- B. shaping and token economies.
- C. aversion therapy and punishment.
- D. graduated exposure and flooding.

**Question 65**

The third client is a young woman who has had trouble giving up smoking. To help her overcome her smoking habit, Dr Rose gives her medication that makes her feel sick every time she has a cigarette.

Dr Rose is using

- A. shaping.
- B. flooding.
- C. response cost.
- D. aversion therapy.

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**END OF SECTION A  
TURN OVER**



**Question 3** (5 marks)

The table below compares features of classical conditioning and operant conditioning.

Use the information in each of the three completed cells as a model to help you fill in each of the five blank cells.

Feature	Classical conditioning	Operant conditioning
acquisition	<i>response is conditioned or learned through association of two stimuli</i>	
nature of response		<i>voluntary, intentional response involving central nervous system</i>
timing of stimulus and response		
spontaneous recovery		<i>a response may occur after a period of extinction</i>

**Question 4** (4 marks)

Describe two sleep-wake shifts that could be observed in the sleep patterns of a healthy adolescent compared with those of an adult.

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**Question 5** (3 marks)

Jonah was very scared of spiders. One morning, he walked into the bathroom and saw a very large spider on the mirror. He screamed and ran out of the bathroom. His mouth was dry, his heart was beating very fast and he was also breathing quickly.

With reference to the human nervous system, explain why Jonah would have experienced these changes in his body.

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**Question 6** (3 marks)

Dr Bannatyne conducted a repeated-measures design in a hospital’s sleep laboratory by using healthy, pain-free individuals as participants. Results showed that small decreases in sleep time and a reduction in rapid eye movement (REM) sleep produced increased sensitivity to pain from a needle prick the following morning.

**a.** What is one benefit of using a repeated-measures design in this particular study? 1 mark

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**b.** In terms of REM sleep and sensitivity to pain, what results would Dr Bannatyne expect to observe once participants were able to sleep for the normal length of time? 2 marks

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**Question 7** (5 marks)

Laura must remember to stop at the following places in this order: post office, optometrist, supermarket and hotel.

- a. Give an example of an acrostic and an acronym that would assist her with remembering where she needs to stop.

2 marks

Acrostic \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Acronym \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- b. Explain how acrostics and acronyms assist in the retrieval of information from memory.

3 marks

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**Question 8** (6 marks)

A researcher is studying measures of retention and aims to determine which of two different measures of retention is more effective.

The researcher randomly divides 50 participants into two groups.

The Red Group and the Blue Group are both given five minutes to study List 1 (20 nonsense syllables).

The Red Group's members are asked to write as many syllables as they can remember, in any order.

The Blue Group is given List 2 (50 nonsense syllables, including the 20 nonsense syllables from List 1). Its members are asked to highlight the syllables they recognise from List 1.

- a. Which group would you expect to correctly recall the greatest mean number of nonsense syllables? Why?

3 marks

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- b. The  $p$  value of the measured difference between the two groups is  $p < 0.05$

What does this indicate about the results?

1 mark

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- c. Why would the researcher have used nonsense syllables rather than real words in this experiment?

2 marks

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**Question 9** (6 marks)

Dr Spiteri wanted to research the difference between eustress and distress. To do this, Dr Spiteri advertised within the student population of a university for participants to volunteer for a visual perception task.

On the day of the experiment, each participant was asked to complete a consent form that also required contact details, including a mobile phone number. Each participant was then placed alone in a room, where they were attached to various machines that measured the heart rate and the galvanic skin response (GSR).

The participants were then told there was a problem with the projector that displayed the visual perception tasks and that it would take some time to fix. The participants were asked to read a magazine while they waited. While they were reading, Dr Spiteri sent them a fake text message from the university, with one of the two following statements:

- Message 1 – ‘Congratulations, your most recent assignment has won an award for excellence. Please report to the office.’

**OR**

- Message 2 – ‘You have been reported for cheating on your most recent assignment. Please report to the office.’

- a. Describe **two** physiological reactions a participant is likely to experience after receiving either of the messages. 2 marks

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- b. Why would you expect to see similar physiological reactions in both groups of participants? 1 mark

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- c. Dr Spiteri’s consent form also asked about the participant’s nationality.  
Why might Dr Spiteri want to know this information? 1 mark

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- d. Which ethical principle is Dr Spiteri possibly breaching by sending a fake text message and what would he need to do to ensure this principle is not breached? 2 marks

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**Question 10** (3 marks)

Drew is usually a confident, funny and friendly man. However, when his grandfather died, Drew started spending most of each day in bed, stopped going out with his friends and ate very little. This continued for two weeks.

Could the information above be used to determine if Drew was experiencing a mental illness? Why or why not?

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**Question 11** (4 marks)

George experienced an episode of mental illness and was admitted to a psychiatric ward for two months. After he recovered and left the hospital, George was informed that he had lost his job. George sold his car to get some money, but that meant he was unable to get to his counselling sessions as he had no transport. Then, he ran out of money and was evicted from his home. Without a permanent address, George did not receive his concession card and could not afford to buy his medication.

After six weeks, George experienced another episode of mental illness.

- a.** Suggest a biological factor, a psychological factor and a social factor that may have resulted in a more positive outcome for George than the one he experienced.

3 marks

Biological factor \_\_\_\_\_

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Psychological factor \_\_\_\_\_

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Social factor \_\_\_\_\_

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- b.** When George returned to the hospital, his psychiatrist suggested that he take part in a research trial for a new medication. However, this would mean that George would not be able to take his regular medication during the trial.

Why may the withdrawal of regular medication be considered unethical?

1 mark

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**Question 12** (6 marks)

Karen has a puppy called Treasure and she wants to teach Treasure how to shake hands on command.

Using the language of the three-phase model of operant conditioning, explain how Karen could use operant conditioning to teach this skill to Treasure.

Phase 1 \_\_\_\_\_

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Phase 2 \_\_\_\_\_

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Phase 3 \_\_\_\_\_

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**Question 15** (4 marks)

Dr Higgins is conducting a case study investigating the function of the left hemisphere of the brain. She uses an electrode to stimulate different areas of the left primary motor cortex in Tom, a healthy adult male.

- a. Identify **one** response that Dr Higgins may observe when these areas of Tom's brain are stimulated. 1 mark

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- b. Dr Higgins then stimulated different areas of the right primary somatosensory cortex.  
What is **one** response that Dr Higgins may observe when these areas of Tom's brain are stimulated? 1 mark

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- c. In terms of hemispheric specialisation in the brain, what do the above responses suggest? 2 marks

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**SECTION C – Research scenario****Instructions for Section C**

Answer the questions in the spaces provided. Write using black or blue pen.  
Your responses may include diagrams, charts and tables.

The Green Valley Tennis Club decided to fund research to investigate the effectiveness of observational learning as a method for teaching its members to master a new serving technique. The club employed Dr Fairley, a sports psychologist and member of the club, to conduct the study.

Dr Fairley recruited volunteers to participate in the study by posting an advertisement on the club's social media site. Of the club members, 90 volunteered to participate. He divided them into two equal groups according to which day they usually played their social tennis game.

Participants in Group A were asked to watch a video of a professional tennis player modelling the serving technique, twice a week over a 12-week period. They were also given a set of instructions containing images and text explaining each of the steps in the technique. They were asked to practise the new serving technique for one hour a week.

Participants in Group B did not watch the video, but did receive the set of instructions and were also asked to practise serving using the new technique for one hour a week.

All participants continued to take part in their usual social competition involving one game per week.

At the completion of the 12-week training period, all participants were asked to perform 10 serves using the new technique. The accuracy with which each serve matched the new serving technique was rated on a five-point scale by a panel of judges made up of senior club officials. This gave a total score out of 50 for each participant, with higher scores indicating more successful learning of the new serving technique.

The results for each group are summarised in the table below.

**Mean scores for Groups A and B**

Group	Mean score/50
A	45
B	31

Dr Fairley conducted a statistical test to determine whether the difference between the means for the two groups was significant and found that  $p = 0.10$













