

STUDENT NUMBER

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PSYCHOLOGY

Written examination

Thursday 29 October 2015

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	14	14	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 correction fluid/tape.
- No calculator is allowed in this examination.

Materials supplied

- Question and answer book of 39 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

The change in neural connections within the brain that occurs as a result of maturation is referred to as

- A. shaping.
- B. myelination.
- C. adaptive plasticity.
- D. developmental plasticity.

Question 2

In the three-phase model of operant conditioning, the antecedent condition is also known as the

- A. reward.
- B. reinforcer.
- C. behavioural outcome.
- D. discriminative stimulus.

Question 3

In classical conditioning, the learned response is

- A. voluntary, whereas in operant conditioning the learned response is reflexive.
- B. reflexive, whereas in operant conditioning the learned response is voluntary.
- C. involuntary, whereas in operant conditioning the learned response is reflexive.
- D. spontaneous, whereas in operant conditioning the learned response is involuntary.

Question 4

Which one of the following elements is involved in classical conditioning but not in operant conditioning?

- A. extinction
- B. acquisition
- C. punishment
- D. an involuntary response

Question 5

A biological factor that may contribute to the development of a mental illness is

- A. having few friends.
- B. living in a remote town.
- C. lack of access to medical help.
- D. a parent and/or grandparent who suffers from a mental illness.

Question 6

Lisa and Karen are going whitewater rafting. Lisa is experiencing eustress before the event and Karen is experiencing distress.

In comparing the sympathetic and the parasympathetic nervous systems, it is likely that Lisa's

- A. sympathetic nervous system is dominant and Karen's sympathetic nervous system is dominant.
- B. parasympathetic nervous system is dominant and Karen's sympathetic nervous system is dominant.
- C. sympathetic nervous system is dominant and Karen's parasympathetic nervous system is dominant.
- D. parasympathetic nervous system is dominant and Karen's parasympathetic nervous system is dominant.

Question 7

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

- A. composing music
- B. listening to background music
- C. tapping your foot to some music
- D. performing a familiar piece of music

Use the following information to answer Questions 8 and 9.

David is in an alcohol-induced state of consciousness at a party.

Question 8

David is considered to be in an altered state of consciousness because he

- A. has easy access to his memories.
- B. can control his temper when he is provoked.
- C. cannot judge the amount of alcohol he has consumed.
- D. will probably be able to judge correctly when it is time to go home from the party.

Question 9

It is likely that the content of David's thoughts is

- A. less restricted than in normal waking consciousness and selective attention is possible.
- B. more restricted than in normal waking consciousness and selective attention is unlikely.
- C. less restricted than in normal waking consciousness and selective attention is unlikely.
- D. more restricted than in normal waking consciousness and selective attention is possible.

Question 10

Johnny fell asleep during his English class. His arm twitched and he woke up suddenly.

Johnny was most likely in

- A. rapid eye movement (REM) sleep.
- B. stage 1 non-rapid eye movement (NREM) sleep.
- C. stage 2 NREM sleep.
- D. stage 3 NREM sleep.

Question 11

Split-brain surgery involves

- A. severing the corpus callosum.
- B. making lesions in the cerebral cortex.
- C. removing one of the brain's hemispheres.
- D. removing the cerebellum from the cerebrum.

Question 12

The term used to describe the tendency to recall the items at the beginning of a list better than those that occur later in the list is

- A. the primacy effect.
- B. the recency effect.
- C. proactive interference.
- D. retroactive interference.

Question 13

Harper attempted to dial her boyfriend Ari's phone number and was horrified when her ex-boyfriend, Jason, answered the call. She realised she had confused Ari's and Jason's numbers.

In this case, Harper was experiencing

- A. memory decay.
- B. retrieval failure.
- C. proactive interference.
- D. retroactive interference.

Use the following information to answer Questions 14 and 15.

While walking down the street, Mr Harris bumped into one of his former students. He knew he had taught this particular student for three years at university, but he could not remember the student's name.

Question 14

Mr Harris's inability to recall the student's name is most likely due to

- A. proactive interference.
- B. lack of consolidation.
- C. retrieval failure.
- D. decay theory.

Question 15

A few hours later, when he was back at the university, Mr Harris was able to remember the student's name as Dimitri.

This is most likely due to the

- A. use of mnemonics.
- B. decrease in interference.
- C. presence of state-dependent cues.
- D. presence of context-dependent cues.

Use the following information to answer Questions 16 and 17.

Mardi's 18-year-old son, Charlie, unexpectedly had a stroke. As time passed, Charlie recovered, but it became clear that he was suffering some memory loss. Initially, Charlie was not sure who Mardi was, but after a few weeks, he began to recognise Mardi and call her 'Mum', much to Mardi's relief. Mardi was very sad, however, that Charlie could no longer remember many of the special family events that they shared in the past.

Question 16

It is likely that Charlie was suffering from

- A. retrograde amnesia.
- B. Alzheimer's disease.
- C. anterograde amnesia.
- D. lack of consolidation.

Question 17

In which region of Charlie's brain did the stroke most likely occur?

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

Question 18

Information that is presented only to the left visual field will initially be processed by the

- A. left occipital cortex.
- B. right occipital cortex.
- C. left and right parietal cortices.
- D. left and right occipital cortices.

Use the following information to answer Questions 19 and 20.

Jeremy used his right hand to pinch his brother Tom's left arm.

Question 19

The components of Jeremy's nervous system that enabled him to pinch Tom's arm included the

- A. motor neurons in his left motor cortex.
- B. sensory neurons in his right motor cortex.
- C. motor neurons in his left somatosensory cortex.
- D. sensory neurons in his left somatosensory cortex.

Question 20

In which part of Tom's brain would the feeling of the pinch initially be processed?

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

Question 21

A scan of Angelina's brain showed a lesion in her left frontal lobe.

Symptoms that Angelina may display as a result of damage to this area of the brain include difficulty in

- A. articulating words and producing fluent sentences.
- B. understanding language and producing fluent sentences.
- C. recognising and responding to stimuli on the right side of her body.
- D. retrieving words from memory despite feeling that she knows the right word.

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SECTION A – continued
TURN OVER

Use the following information to answer Questions 22–28.

Vicki wanted to teach her dog, Misha, to sit on command. When first teaching Misha, Vicki would say ‘sit’ and then would give Misha a pat and a dog biscuit every time Misha sat on command. After a number of training sessions, Vicki noticed that Misha began to salivate whenever she said ‘sit’.

Question 22

That Misha learnt to sit on Vicki’s command is a result of

- A. operant conditioning with partial reinforcement.
- B. classical conditioning with partial reinforcement.
- C. operant conditioning with continuous reinforcement.
- D. classical conditioning with continuous reinforcement.

Question 23

That Misha begins to salivate whenever Vicki says ‘sit’ is

- A. a conditioned response.
- B. a conditioned stimulus.
- C. an unconditioned response.
- D. a result of negative reinforcement.

Question 24

Misha learnt to sit each time Vicki said ‘sit’. Now, Vicki only gives Misha a biscuit and a pat on some occasions when Misha sits for her.

In this situation, Vicki’s schedule of reinforcement for Misha is

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

Question 25

Later, Misha also sat and salivated whenever she heard Vicki call her cat ‘Kit’.

That Misha sits whenever she hears the word ‘Kit’ is

- A. a fixed action pattern.
- B. stimulus discrimination.
- C. stimulus generalisation.
- D. an unconditioned stimulus.

Question 26

Eventually, Misha sat and salivated whenever she saw Vicki, despite Vicki not asking Misha to sit.

In this situation, Vicki is the

- A. positive reinforcer.
- B. conditioned stimulus.
- C. discriminative stimulus.
- D. unconditioned stimulus.

Question 27

Vicki found it annoying that Misha salivated whenever she saw her.

To avoid Misha salivating, Vicki should have trained Misha to sit by

- A. using a command word other than the word 'sit'.
- B. teaching Misha to sit only when she was hungry.
- C. giving Misha a biscuit but not a pat whenever she sat on command.
- D. giving Misha a pat but not a biscuit whenever she sat on command.

Question 28

Vicki did not pat Misha or give her a biscuit for sitting on command for several weeks.

Finally, when Vicki said 'sit' to Misha, Misha did not respond.

This is an example of

- A. extinction.
- B. acquisition.
- C. spontaneous recovery.
- D. positive reinforcement.

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Use the following information to answer Questions 29–32.

Patsy was attempting to build a car from blocks that her grandmother, Merran, had given her. She was very eager to please Merran by making the car out of blocks as quickly as possible. Initially, Patsy took 20 minutes to connect the pieces correctly. She did not follow the instructions, made many mistakes, and needed to pull it apart and start again. Eventually, Patsy finished the car and was very pleased with herself. Merran praised Patsy for her effort in completing the car.

Question 29

Patsy's process of building the car is an example of

- A. shaping.
- B. modelling.
- C. a token economy.
- D. trial-and-error learning.

Question 30

Patsy feeling pleased with herself and Merran's praise of Patsy are, respectively, examples of

- A. retention, selective attention.
- B. positive reinforcement, retention.
- C. selective attention, positive reinforcement.
- D. positive reinforcement, positive reinforcement.

Question 31

Patsy's little brother, Max, watched her build the car with the blocks. Max then built the car on his own. Max's motivation for building the car was most likely

- A. Patsy's praise of Max.
- B. Merran's praise of Patsy.
- C. playing with the completed car.
- D. piecing the car together more quickly than Patsy.

Question 32

To successfully build the car, which was the correct order of processes that Max followed?

- A. attention, retention, reproduction, motivation
- B. motivation, attention, retention, reproduction
- C. motivation, retention, attention, reproduction
- D. attention, retention, motivation, reproduction

Use the following information to answer Questions 33–36.

Bobbi, a one-year-old child, is playing with red balloons when suddenly one bursts, making a loud noise. Bobbi is startled by the loud noise. She continues playing with the balloons and another one pops. Again, Bobbi demonstrates the startle reflex in response to the balloon bursting. After five balloons popping and Bobbi being startled at each pop, Bobbi now startles whenever she sees a balloon.

Question 33

In terms of classical conditioning of Bobbi's fear of a red balloon, the unconditioned stimulus and the conditioned stimulus were, respectively, the

- A. red balloon, loud noise.
- B. loud noise, red balloon.
- C. startle reflex, red balloon.
- D. red balloon, startle reflex.

Question 34

Prior to conditioning, the red balloon and the startle reflex were, respectively

- A. unconditioned stimulus, conditioned response.
- B. conditioned stimulus, unconditioned response.
- C. neutral stimulus, unconditioned response.
- D. neutral stimulus, conditioned response.

Question 35

After conditioning, the conditioned stimulus and the conditioned response were, respectively

- A. Bobbi, the loud noise.
- B. Bobbi, the startle reflex.
- C. the loud noise, the startle reflex.
- D. the red balloon, the startle reflex.

Question 36

A few days later, Bobbi saw a red football but was not startled by it.

This was likely due to

- A. acquisition.
- B. spontaneous recovery.
- C. stimulus generalisation.
- D. stimulus discrimination.

Use the following information to answer Questions 37–39.

Dr Rajesh is researching localisation of function in the brain. She asks Peter, one of her stroke patients, to undertake a series of tasks so she can observe the possible changes in localisation of function as a result of his stroke.

Question 37

Dr Rajesh explained the nature and purpose of the tasks to Peter before he agreed to participate in her research.

The ethical principle Dr Rajesh followed was

- A. debriefing.
- B. withdrawal rights.
- C. informed consent.
- D. voluntary participation.

Question 38

Dr Rajesh's study is an example of a

- A. single-participant experimental design.
- B. case study with convenience sampling.
- C. single-participant experiment with convenience sampling.
- D. repeated-measures experiment with controlled extraneous variables.

Question 39

An advantage of this particular type of study is that

- A. the results are easily generalised.
- B. it produces highly detailed results.
- C. extraneous variables are easily controlled.
- D. conclusions can be drawn about the effect of the independent variable on the dependent variable.

Use the following information to answer Questions 40–43.

Patrick’s mathematics teacher gave Patrick’s class a test.

The first three tasks of the test were as follows:

- Task 1 – Name the type of triangle starting with ‘i’.
- Task 2 – Name one other type of triangle.
- Task 3 – Choose the triangle that has sides of equal length from the following three options:
A. right-angled, B. equilateral or C. scalene.

Question 40

Task 1 required Patrick to use

- A. relearning.
- B. free recall.
- C. cued recall.
- D. recognition.

Question 41

Task 2 required Patrick to use

- A. free recall.
- B. relearning.
- C. cued recall.
- D. recognition.

Question 42

Task 3 required Patrick to use

- A. relearning.
- B. free recall.
- C. cued recall.
- D. recognition.

Question 43

Which one of the following ranks the tasks in order from least sensitive to most sensitive?

- A. Task 1, Task 2, Task 3
- B. Task 2, Task 1, Task 3
- C. Task 3, Task 2, Task 1
- D. Task 3, Task 1, Task 2

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Use the following information to answer Questions 44–48.

Dr Gregory wanted to test the effects of different methods of learning on memory retention. Equal numbers of participants were randomly allocated to three different learning groups. Each group learnt the same list of words that were presented on a computer screen, one at a time, in random order. For all groups, half of the words were printed in upper-case letters and half were printed in lower-case letters.

Each group was given a different method of learning the words, as follows:

- Group A – For each word presented, participants were asked to report whether the word was printed in upper-case letters or in lower-case letters.
- Group B – For each word presented, participants were asked to report whether the word rhymed with the word ‘stop’.
- Group C – For each word presented, participants were asked to report whether the word was a kind of animal.

After learning the list of words, participants were asked to recall as many words from the studied list as possible. Dr Gregory then compared the mean number of words correctly recalled between the groups.

Question 44

At the end of the study, the order in which the groups are likely to be ranked, from the greatest percentage of words correctly recalled to the lowest percentage of words correctly recalled, is

- A. Group C, Group B, Group A.
- B. Group A, Group B, Group C.
- C. Group B, Group A, Group C.
- D. Group C, Group A, Group B.

Question 45

The type of encoding in this study for

- A. Group B was semantic and for Group A was structural.
- B. Group A was phonemic and for Group C was semantic.
- C. Group C was semantic and for Group A was structural.
- D. Group A was structural and for Group C was phonemic.

Question 46

The level of processing in this study would have been

- A. moderate for Group B and the deepest for Group A.
- B. the deepest for Group B and moderate for Group C.
- C. the shallowest for Group B and moderate for Group A.
- D. the deepest for Group C and the shallowest for Group A.

Question 47

The level of statistical significance of the results was set at $p = 0.02$

This means that the

- A. probability of the results is 0.2%.
- B. results are significant and can be generalised.
- C. probability of the results being due to chance is set at 2%.
- D. results are not statistically significant and cannot be generalised.

Question 48

For Dr Gregory's study, the independent variable and the dependent variable were, respectively, the

- A. method of learning the word list, time taken to learn the words.
- B. method of learning the word list, number of words recalled.
- C. number of words recalled, method of learning the word list.
- D. number of words in each list, number of words recalled.

Use the following information to answer Questions 49–51.

Simone started a new job at a local cafe. One of the cafe's most popular sandwiches is called 'The Lot'. The ingredients for 'The Lot' had to be placed into the sandwich in a specific order: a slice of cheese, then a slice of ham, followed by some anchovies, then salami and finally some egg.

Question 49

Simone decided to use an acrostic to help her remember the order of the ingredients for 'The Lot'.

A possible example of her acrostic is

- A. CHASE.
- B. Criminals Hate Any Smelly Escapes.
- C. one-cheese, two-ham, three-anchovies, four-salami and five-egg.
- D. 'The cheese said to the ham and anchovies, "Why is the salami kissing the egg?"'

Question 50

One of the other chefs suggested that he would find an acronym more effective to remember the order of the ingredients.

A possible acronym for the ingredients would be

- A. CHASE.
- B. Criminals Hate Any Smelly Escapes.
- C. one-cheese, two-ham, three-anchovies, four-salami and five-egg.
- D. 'The cheese said to the ham and anchovies, "Why is the salami kissing the egg?"'

Question 51

An acrostic is an effective tool for remembering the order of ingredients because

- A. elaborative rehearsal adds meaning and enhances procedural memory.
- B. elaborative rehearsal adds meaning and enhances encoding in declarative memory.
- C. maintenance rehearsal adds meaning and enhances encoding in procedural memory.
- D. maintenance rehearsal adds meaning and enhances encoding in declarative memory.

Question 52

Salmon swimming upstream to spawn and the grasping reflex in humans, respectively, are examples of

- A. maturation, fixed action pattern.
- B. fixed action pattern, fixed action pattern.
- C. unlearned behaviour, learned behaviour.
- D. fixed action pattern, unlearned behaviour.

Use the following information to answer Questions 53 and 54.

Rosie was an accomplished ballerina and had been learning ballet for 15 years, since she was four. She attended ballet classes four times a week and practised ballet at home every day to prepare for her upcoming ballet performance.

Question 53

At the age of four, when Rosie was first learning to dance ballet, it was likely that she would have needed to use

- A. divided attention.
- B. selective attention.
- C. controlled processes involving little mental effort and conscious awareness.
- D. automatic processes involving greater mental effort and conscious awareness.

Question 54

As Rosie was an accomplished ballerina who had been learning ballet for 15 years, it is likely that she would have a higher density of sensory neurons associated with the legs and feet in her

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

Question 55

After a psychologist listened to her patient explaining his symptoms, she consulted the DSM-IV and DSM-V, and determined that the patient was suffering from a personality disorder.

The DSM uses a

- A. scaled approach.
- B. categorical approach.
- C. dimensional approach.
- D. biopsychosocial approach.

Question 56

Thoughts, feelings and behaviours are generally considered to be normal if an individual

- A. is able to live independently.
- B. has always exhibited these thoughts, feelings and behaviours.
- C. has friends who exhibit similar thoughts, feelings and behaviours.
- D. is able to function in society and cope with living independently.

Question 57

The key assumption underlying the biopsychosocial framework is that

- A. psychologists alone cannot diagnose mental illness.
- B. factors from several domains may combine to influence mental health.
- C. social factors are more important than psychological factors in determining mental health.
- D. biological factors are not as important as psychological factors in determining someone's degree of mental health.

Use the following information to answer Questions 58–60.

Susan was delayed on her way to the airport to catch a flight to Sydney for an important business meeting. While she was sitting in a long line of cars, she became worried that she would miss her flight. Her heart started pounding and she could feel herself becoming quite anxious.

Question 58

Susan telephoned her manager from the car and told her that she was feeling very stressed by the delay.

In Lazarus and Folkman's Transactional Model of Stress and Coping, Susan's identification of her stressful state was an example of

- A. primary appraisal.
- B. secondary appraisal.
- C. problem-focused coping.
- D. emotion-focused coping.

Question 59

Susan decided that she would telephone the branch of her office in Sydney to see if it was possible to delay the meeting.

In Lazarus and Folkman's Transactional Model of Stress and Coping, Susan's attempt to delay the meeting was an example of

- A. reappraisal.
- B. primary appraisal.
- C. problem-focused coping.
- D. emotion-focused coping.

Question 60

Susan decided that there was nothing she could do to change the situation and accepted that she would miss the meeting.

According to Lazarus and Folkman's Transactional Model of Stress and Coping, Susan's acceptance of the situation was an example of

- A. reappraisal.
- B. primary appraisal.
- C. problem-focused coping.
- D. emotion-focused coping.

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Use the following information to answer Questions 61 and 62.

As part of an experiment, a psychologist records the number of correct responses on a memory test. He records the following scores: 11, 15, 17, 24, 19, 28, 27, 28, 15, 15, 15, 19, 16

Question 61

The mode for this set of data is

- A. 15
- B. 17
- C. 19
- D. 27

Question 62

The median for this set of data is

- A. 15
- B. 17
- C. 18
- D. 19

Use the following information to answer Questions 63–65.

Dr Nguyen is a psychologist interested in investigating the effect of age on the cycling ability of Victorians. He recruits 93 Victorian bike riders who responded to an advertisement that he placed in a newspaper. The bike riders are divided into two groups:

- Group 1 consists of riders aged 20–39 years old.
- Group 2 consists of riders aged 40–59 years old.

Question 63

The independent and the dependent variables in this study were, respectively

- A. cycling ability, age.
- B. age, cycling ability.
- C. cycling ability, 93 Victorian bike riders.
- D. 93 Victorian bike riders, cycling ability.

Question 64

In this study, the sampling method used was

- A. random.
- B. stratified.
- C. convenience.
- D. random-stratified.

Question 65

The population and the sample for this study were, respectively

- A. Victorians, 93 Victorian bike riders.
- B. 93 Victorian bike riders, Victorians.
- C. 93 Victorian bike riders, Victorian bike riders.
- D. Victorians who responded to the advertisement, 93 Victorian bike riders.

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**END OF SECTION A
TURN OVER**

SECTION B – Short-answer questions**Instructions for Section B**

Answer **all** questions in the spaces provided. Write using black or blue pen.

Question 1 (3 marks)

Henry was 27 years old when he underwent surgery for frequent and severe epileptic seizures. The surgery involved removing both of the medial temporal lobes of the brain.

Although he was cured of epilepsy, Henry was left with an inability to recall any events that had occurred in the two years prior to his surgery, and he was unable to retain any new facts or episodes from the time of his surgery until he died at the age of 82. However, researchers working with Henry in the years following his surgery found that Henry could learn new skills.

- a. The removal of which structure within the medial temporal lobe most likely caused Henry's problem with memory? 1 mark

- b. What term is used to describe the memory disorder associated with Henry's inability to store and retrieve new facts and episodes? 1 mark

- c. Name the type of long-term memory that was preserved in Henry. 1 mark

Question 2 (2 marks)

Identify **two** possible changes at the synapse during the formation of new memories.

Question 3 (4 marks)

a. Why did Ebbinghaus use syllables such as ‘nuz’, ‘gel’ and ‘xof’ when he conducted his research on memory?

2 marks

b. Ebbinghaus described the rate of forgetting in terms of the time that elapsed between learning and the test of recall of the nonsense syllables.

What are **two** key features of the forgetting rate that Ebbinghaus reported?

2 marks

Question 4 (4 marks)

Identify **two** strengths and **two** limitations of Lazarus and Folkman’s Transactional Model of Stress and Coping.

Strengths

Limitations

DO NOT WRITE IN THIS AREA

Question 5 (3 marks)

One year ago, Toby's wife died. For the past six months, Toby has been acting out of character. Despite being physically in good health, he has not left the house for several weeks and has asked his parents to shop for groceries for him. Whenever his parents visit, they notice that he has not showered for days and is often wearing the same clothes. He lost his job because of extended absences and his friends are concerned as Toby is no longer responding to their text messages or telephone calls. He has also shown a lack of interest in physical activity despite previously completing many marathons.

Give three reasons why these behaviours may cause Toby's psychologist to conclude that he has a mental illness.

1. _____

2. _____

3. _____

Question 6 (7 marks)

Ernie started a new job working regular night shifts in a factory. In his new job he is required to operate a machine.

- a. When sleeping during the day, Ernie experienced an increase in the number of memorable and vivid dreams compared to when he was sleeping at night.

With reference to the characteristics and patterns of sleep, explain why Ernie experienced this increase in dreams.

3 marks

- b. Identify two characteristics of Ernie's brain wave patterns when he experienced vivid dreams.

2 marks

1. _____

2. _____

- c. Ernie persevered with his new job for six months but found it difficult to cope with working night shifts for extended periods. He finally started looking for another job as he was worried that he might eventually become involved in an accident.

State **one** physiological effect of long-term sleep deprivation and identify **one** reason why it may increase the likelihood of Ernie injuring himself or someone else at work.

2 marks

Question 7 (4 marks)

Dean had a stressful job as a police officer. He found that going on a daily 5 km jog greatly reduced his stress levels.

Identify **two** effects of exercise on the autonomic nervous system and state how each may reduce Dean's experience of stress.

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Question 8 (4 marks)

Slater started talking to Melody in a cafe. After chatting for several minutes, Slater and Melody realised they had attended primary school together 15 years earlier. Melody was amazed when Slater could name and describe all the teachers from their primary school.

- a. With reference to semantic network theory, describe how the knowledge relating to the names of Slater's primary school teachers could be stored in his long-term memory.

3 marks

- b. According to semantic network theory, what determines how quickly Slater can retrieve his long-term memories?

1 mark

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Question 9 (4 marks)

Josie was diagnosed with spatial neglect syndrome after suffering a stroke.

- a. Which part of Josie’s brain (lobe and hemisphere) was most likely to be damaged? 2 marks

- b. An occupational therapist placed Josie’s right arm in a sling.
Why might the occupational therapist use a sling to treat Josie’s spatial neglect syndrome? 2 marks

Question 10 (8 marks)

Every evening after school, Najida’s father pestered her to do her homework. After a lot of pestering, Najida did her homework to make her father’s pestering stop.

- a. Name the learning principle associated with Najida eventually choosing to complete her homework and state how this learning principle encouraged Najida to do her homework. 3 marks

DO NOT WRITE IN THIS AREA

b. How could Najida’s father use a token economy to encourage Najida to do her homework without pestering her?

3 marks

c. Najida’s mother decided she would withdraw Najida from her favourite weekend activity every time Najida did not do her homework.

Name the learning principle Najida’s mother is applying and state why this may be effective in getting Najida to do her homework.

2 marks

Question 11 (4 marks)

Miley is a tourist in London and becomes lost while trying to find her way to a cafe to meet a friend. She has left her mobile phone at home and does not have a tourist map, so she asks someone on the street for directions. The stranger talks her through a series of directions involving a number of street names, landmarks and turns.

Name two components of Baddeley and Hitch’s model of working memory and describe the role of each in Miley remembering and following the instructions to find her way to the cafe.

Component of working memory _____

Role _____

Component of working memory _____

Role _____

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Question 12 (4 marks)

Although she is able to function in her everyday life, Annie is stressed about her driving test scheduled for today.

With reference to the physiological aspects of Annie's stress response, give two reasons why this level of stress may be helpful when Annie takes her driving test.

1. _____

2. _____

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Question 13 (6 marks)

Since losing his job six months ago, Lou has experienced ongoing stress.

- a. With reference to the physiological aspects of Lou’s stress response, give two reasons why this level of stress may be harmful to Lou’s health if his stress continues. 2 marks

1. _____

2. _____

- b. If Lou were to be connected to an electroencephalograph (EEG), a heart-rate monitor, a galvanometer and an electromyograph, what would the readings most likely indicate about his physiological responses at the height of his anxiety? 4 marks

EEG _____

Heart-rate monitor _____

Galvanometer _____

Electromyograph _____

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Question 14 (3 marks)

Identify one similarity and two differences between daydreaming and dreaming.

Similarity _____

Difference 1 _____

Difference 2 _____

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END OF SECTION B
TURN OVER

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.

Scenario

A researcher designed an experiment to investigate how the introduction of false information affects people's eyewitness testimonies.

The participants were 100 university students, randomly allocated to two groups of 50, called Group A and Group B. The experiment involved three stages.

Stage 1

Participants in Groups A and B watched a three-minute video showing the journey of a car that eventually collided with a shopping trolley filled with groceries that was being pushed by a man. The video also showed a number of objects and events leading up to the collision.

Stage 2

Immediately after viewing the video, the participants in both Groups A and B answered a series of 20 questions about what they had seen.

Fifteen of the questions were common to both groups. The other five questions were asked as follows:

- **Group A** was asked five **open** questions that focused on objects or events that **did not** actually appear in the video. These questions were asked by using 'a ...' to refer to the object or event (e.g. Did you see **a bus** in the video? Did you see **a stop sign** in the video? Did you see **a woman** pushing the shopping trolley in the video?).
- **Group B** was asked five **intentionally misleading** questions that focused on objects or events that **did not** actually appear in the video. These questions used 'the ...' to refer to the object or event (e.g. Did you see **the bus** in the video? Did you see **the stop sign** in the video? Did you see **the woman** pushing the trolley in the video?).

Stage 3

One week after viewing the video, participants in both groups were asked to answer 20 questions about the video. All participants were given the 15 common questions from Stage 2 **and** the five open questions that were only given to Group A in Stage 2.

For each participant, the researcher recorded the number of open questions to which they responded, 'Yes'. Results are displayed in Table 1.

Table 1. Mean percentage of 'Yes' responses

	Question type (Stage 2)	% 'Yes' responses for objects/events not actually in the video when tested with open questions one week later (Stage 3)
Group A	open questions ('a ...')	15.6
Group B	misleading questions ('the ...')	34.2

The level of significance was set at $p \leq 0.05$

A statistical test was conducted on the data and $p \leq 0.02$

Question 1 (3 marks)

Construct a research hypothesis for this study.

Question 2 (2 marks)

Identify either one deceptive element or one potentially harmful/distressing element of this experiment. What measure could be taken to address this to ensure that the study is conducted ethically?

Element identified _____

Suggested measure _____

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