

STUDENT NAME:

VCE PSYCHOLOGY

Units 3 & 4 Trial Examination 2023

Reading time: 15 minutes

Writing Time: 2 hours 30 minutes

QUESTION AND ANSWER BOOK

Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	40	40	40
B	11	11	80
			Total 120

- 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 booklet of 27 pages.
- Answer sheet for multiple-choice questions.
- Additional space is available at the end of the booklet if you need extra paper to complete an answer.

Instructions

- Write your **student name** in the space provided above on this page.
- Write your **student name** on your answer sheet for multiple-choice questions.
- 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.

Disclaimer: This practice examination has been written for students of VCE Psychology. This does not imply that it has been endorsed by the Victorian Curriculum and Assessment Authority (VCAA). Teachers are advised to preview and evaluate this resource before using or distributing it to students.

Section A – Multiple Choice Questions**Instructions for Section A**

Answer **all** questions 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 nervous system subdivision associated with the movement of one's legs is the

- A. sympathetic nervous system.
- B. somatic nervous system.
- C. parasympathetic nervous system.
- D. peripheral nervous system.

Question 2

Which of the following is correct about neurochemicals?

	Neurotransmitters	Neuromodulators
A.	Are efficient in delivering a message to the pre-synaptic neuron.	Are less efficient in delivering a message to the pre-synaptic neuron.
B.	Can affect the responsiveness of post-synaptic neurons.	Can affect the responsiveness of pre-synaptic neurons.
C.	Bind to receptor sites on the post-synaptic neuron.	Can enhance the excitatory or inhibitory responses on the post-synaptic neuron.
D.	Exert their influence over a slower period of time than neuromodulators.	Can affect the responsiveness of post-synaptic neurons.

Question 3

All of the following are considered 'active' forms of learning except for

- A. classical conditioning.
- B. operant conditioning.
- C. observational learning.
- D. Indigenous ways of knowing.

Question 4

The brain structure involved in the encoding of procedural memories is the

- A. hippocampus.
- B. neocortex.
- C. amygdala.
- D. cerebellum.

Question 5

Zara has arachnophobia (phobia of spiders). It is most likely that Zara has

- A. low levels of glutamate.
- B. high levels of glutamate.
- C. low levels of GABA.
- D. high levels of GABA.

Question 6

Chronic stress is often associated with all of the following except for

- A. vulnerability to colds and flu.
- B. high blood sugar levels.
- C. digestive problems.
- D. dilated pupils.

Question 7

Mikah seeking help from his teacher when he is stressed with his homework is an example of

- A. coping flexibility.
- B. context-specific effectiveness.
- C. acute stress.
- D. operant conditioning.

Question 8

In Aboriginal and Torres Strait Islander Ways of Knowing, Country is considered to be

- A. the centre of everything.
- B. sentient.
- C. the physical landscape.
- D. the vast desert.

Use the following information to answer questions 9-11.

Katrine walks home from work everyday and passes a supermarket. Over the past 3 times that she has walked by the supermarket, a digital ad starts playing with big bangs. The noise of the 'bang' startles Katrine. As she walks by, her heart rate increases, and she becomes scared. Now, anytime she sees the logo of the supermarket, Katrine feels scared.

Question 9

The neutral stimulus in this scenario is

- A. the ad with the loud bang.
- B. the supermarket logo.
- C. Katrine's heart rate increasing.
- D. Katrine walking home.

Question 10

The brain structure that has encoded the fear in this memory is the

- A. hippocampus.
- B. neocortex.
- C. amygdala.
- D. basal ganglia.

Question 11

The nervous system subdivision that is aroused when Katrine realises that she is not in danger, and her heart rate starts to decrease is the

- A. sympathetic nervous system.
- B. parasympathetic nervous system.
- C. somatic nervous system.
- D. peripheral nervous system.

Question 12

Various subdivisions of the nervous system are activated in response to danger. Which of the following is correct?

	Flight response	Freeze response
A.	Only the sympathetic nervous system is activated.	Only the parasympathetic nervous system is activated.
B.	Only the parasympathetic nervous system is activated.	Only the sympathetic nervous system is activated.
C.	The sympathetic nervous system is dominant.	The parasympathetic nervous system is dominant.
D.	The parasympathetic nervous system is dominant.	The sympathetic nervous system is dominant.

Question 13

Samira and her mother have signed up to a waitlist for a Saint Bernard dog. Samira's mother is reading Samira a list of pet names that she likes. There are 11 names on her list. Samira can't remember all of the names on the list. This is most likely due to

- A. the capacity of sensory memory.
- B. the capacity of short-term memory.
- C. the capacity of long-term memory.
- D. the duration of long-term memory.

Question 14

Belinda has been diagnosed with Alzheimer's disease. Formal diagnosis of Alzheimer's disease can only be done

- A. through brain imaging techniques.
- B. by detecting structural neuronal changes.
- C. after death.
- D. by giving patients a survey to complete.

Question 15

Homer wants to do well in his Psychology exam and looks up to his older brother Tom who completed Psychology last year and received a good result. Which of the following best describes why Homer is keen to study?

- A. Tom closely focuses on how Homer is studying because Homer implements effective study techniques.
- B. Homer is in the process of operant conditioning where he is positively reinforcing his behaviour through observing his brother Tom.
- C. Homer can be vicariously reinforced to perform well through observing the behaviour and good results that his brother Tom received.
- D. If Homer studies lots, he will be more likely to want to study more.

Question 16

Aboriginal peoples use songlines as a key cultural tradition to connect to Country, to share knowledge and to practise culture. Which of the following reasons explains why songlines are considered a mnemonic device as well?

- A. Songlines allow people to pay greater attention which assists with sensory memory.
- B. Practising songlines on Country helps with retrieving that information as Country acts as a retrieval cue.
- C. The lyrics sung in songlines assist with neural pruning of synaptic pathways.
- D. Songlines help information to stay in short-term memory by extending the duration.

Question 17

Ravshan has been visiting a psychologist for the last two months. Identify an external factor that his psychologist could identify as contributing to his improved mental health.

- A. He has recently developed strong social connections with friends at work.
- B. He is now experiencing an average of 7 hours of sleep per night.
- C. He is developing his ability to be resilient.
- D. He has reduced the amount of alcohol he is drinking.

Question 18

Xin Yi finds it hard to fall asleep at night. Her doctor recommends that she attends a sleep laboratory to gain greater awareness of her sleeping patterns. The research assistant explains to her that sleep is a psychological construct. What does the research assistant mean by this statement?

- A. It is too difficult to investigate sleep, so only self-reports can be used to record the quality of someone's sleep.
- B. Sleep is a behaviour that occurs psychologically but is relatively easy to measure.
- C. The details about what happens when we sleep cannot be directly observed because they happen internally.
- D. Sleep is a behaviour that can be easily observed externally, without the use of equipment.

Question 19

Which of the following statements is true regarding what would be observed during NREM Stage 3 and REM sleep?

- A. Stage 3 NREM and REM both increase in duration as the night progresses.
- B. Stage 3 NREM and REM both indicate high levels of activity on an EOG.
- C. Stage 3 NREM and REM both show high levels of activity on an EEG.
- D. Stage 3 NREM and REM both indicate low levels of activity on an EMG.

Question 20

Yasmin's teacher has informed her class that they shouldn't be on their phones in the hour before they go to bed due to the blue light omitted from their devices. Yasmin is sceptical and has decided to investigate for herself whether being on her phone impacts on her ability to fall asleep. She decides to review the scientific findings of previous research to see if she can find any patterns in what is being reported.

Which type of investigation methodology and type of data is she analysing?

	Investigation methodology	Data
A.	correlational	primary data
B.	correlational	secondary data
C.	literature review	primary data
D.	literature review	secondary data

Question 21

Perin is a new parent. She is concerned about how much sleep she is getting each night and whether this is influencing her ability to drive safely. She has decided to participate in a study at her local university where she reports the number of hours she slept the night before. She does this everyday for a week. Whilst participating in the laboratory sessions they test her reflexes, her ability to navigate through a maze as well as her ability to interpret the emotions expressed on a series of faces. In addition to these tests, she also completes a computer navigation task, which reflects real world driving experiences.

Identify the investigation methodology used when she completed the computer navigation task and the reason why researchers chose this method.

	Investigation methodology	Reason
A.	fieldwork	as it helped to investigate Perin's driving ability in a controlled setting.
B.	simulation	it was a safer way to measure the effect of sleep deprivation on driving ability.
C.	fieldwork	it is a more cost-effective method.
D.	simulation	it has higher external validity.

Use the following information to answer Questions 22 - 24.

Alek lives with his teenage son, Pavel and mother, Mila. Alek jokes to his partner that the only hours in the night where everyone is asleep is between the hours of 2am and 5am. Pavel likes to go to bed late and wake up late, whereas, Mila goes to bed early and wakes up early.

Question 22

Which of the following options correctly identifies the sleeping patterns of the household?

- A.** Alek is likely experiencing an Advanced Sleep Phase Disorder.
- B.** Mila is likely experiencing an Advanced Sleep Phase Disorder.
- C.** Pavel is likely experiencing an Advanced Sleep Phase Disorder.
- D.** Mila is likely sleeping for longer periods compared with her family and would possibly have naps during the day.

Question 23

Which of the following best explains why Pavel tends to fall asleep later?

- A.** Melatonin is secreted into his bloodstream later in the night.
- B.** Melatonin is secreted into his bloodstream earlier in the night.
- C.** His levels of melatonin are too high.
- D.** His levels of melatonin are too low.

Question 24

Which of the following statements is a correct comparison between the sleep patterns of Pavel and Mila?

- A. Mila would spend more of her time asleep in NREM 3, compared with Pavel.
- B. Mila would sleep for longer periods of time, compared with Pavel.
- C. Mila is likely to experience more sleep cycles, compared with Pavel.
- D. Mila is unlikely to experience REM sleep, whereas Pavel will spend approximately 50% of his time asleep in the REM stage.

Question 25

Jamie and Aggie have been chosen by their teacher to participate in a survival camp. Aggie is nervous but excited, she has never gone camping before. Prior to the camp, she spends her weekends hiking and practising how to use her compass. Jamie, however, is afraid of spiders and is worried about how many he will encounter on the camp. He spends his time wishing he didn't have to go.

Identify the appropriate primary appraisal they are demonstrating.

	Aggie	Jamie
A.	She is viewing the camp as benign-positive.	He is viewing the camp as stressful and as a harm/loss.
B.	She is viewing the camp as stressful and as a challenge.	He is viewing the camp as stressful and as a threat.
C.	She is implementing avoidance strategies.	He is implementing approach strategies.
D.	She is implementing approach strategies.	He is implementing avoidance strategies.

Question 26

Lalika works in a sleep laboratory. She is observing the sleep patterns of a newborn baby. Which of the following is she most likely to observe throughout their sleep cycle?

- A. A large amount of high frequency, low amplitude brain waves.
- B. No activity being detected by the EMGs throughout the night as babies cannot move.
- C. Low activity on their EOGs when they are in REM sleep.
- D. Sleep patterns that reflect REM sleep only.

Question 27

Deception can be used in a study when

- A. revealing the true nature of the study isn't possible due to extraneous variables.
- B. the researcher isn't sure how the participants will respond.
- C. the researcher feels it would allow for the participants to give more accurate results.
- D. revealing the true nature of the study to participants is likely to influence the results.

Question 28

Which statement regarding stress and anxiety is incorrect?

- A. Both can impact on the person's ability to function and complete daily activities.
- B. Both could be a risk factor that could contribute to the development of a mental health problem.
- C. Both tend to be triggered by a specific and external object.
- D. Both are side effects of sleep deprivation.

Question 29

Decreasing the likelihood that the post-synaptic neuron will fire, is the role of which neurotransmitter?

- A. Glutamate
- B. GABA
- C. Cortisol
- D. Melatonin

Question 30

Which of the following is the most appropriate example of a social protective factor?

- A. Regularly attending a fitness class with other people and attempting to say hello to others in the class.
- B. Having your aunty call past your house to say hello, when you are busy preparing for a school assignment.
- C. Talking to your friend while playing a game online, and feeling excited after talking to them.
- D. Pretending to like watching football on the weekend, so that you have something to talk about with your friends at school.

Multiple-choice questions continue on next page.

Use the following information to answer Questions 31 - 32.

Shift work statistics to get the heart racing

A total of 87 'healthy' males in the Bathurst region were divided into two categories; those currently employed in rotational shift work, and those who worked 9am-5pm.

Researchers assess their cardiovascular and metabolic functions to determine the effect of shift work on health.

Findings indicate that when employees are matched for lifestyle and behavioural factors, including current health status, sleep quality and physical activity, employment in rotational shift work significantly increases markers of future cardio-metabolic disease risk.

Reference: Barlow, N. (2021). Shift work statistics to get the heart racing. News.csu.edu.au.

<https://news.csu.edu.au/latest-news/shift-work-statistics-to-get-the-heart-racing>

Question 31

Identify the independent variable and the research design used in this research.

	Independent Variable	Research Design
A.	whether they were employed in rotational shift work, or whether they worked 9am-5pm shifts.	mixed design
B.	whether they were employed in rotational shift work, or whether they worked 9am-5pm shifts.	between-subjects design
C.	how long they have been employed in rotational shift work.	mixed design
D.	how long they have been employed in rotational shift work.	between-subjects design

Question 32

Identify what the researchers controlled for when they matched participants on their current health status, sleep quality and physical activity.

- A. systematic error
- B. random error
- C. extraneous variables
- D. dependent variables

Question 33

Cyan has decided to go see his doctor to help him overcome his phobia of birds. Which of the following treatments would be the most effective psychotherapeutic treatment?

- A. Helping him ensure that he had adequate hydration and nutrition.
- B. Participating in one session of cognitive behavioural therapy.
- C. Engaging in systematic desensitisation to recondition the fear response.
- D. Taking medication that are GABA agonists.

Question 34

Dr Morse's research demonstrated that exercise reduced the levels of chronic stress. He used several investigation methodologies to collect his data including a survey, a heart rate monitor and a saliva swab, which measured the levels of cortisol in the participants' bodies. Dr Morse found that the values collected all agreed with and indicated a consistent level of stress across the measurements.

Which of the following did this research show?

- A. High levels of precision
- B. The identification of a true value
- C. High levels of accuracy
- D. Reproducibility

Question 35

Esmee has a phobia of public speaking. Which of the following is not a component of a phobia?

- A. Her physiological response when she has to speak in front of the class is intense.
- B. Her fear of public speaking is irrational.
- C. Her fear of public speaking has persisted for a long period of time.
- D. Her fear is an adaptive response and can help her avoid unsafe situations.

Question 36

Which statement regarding circadian rhythms and ultradian rhythms is true?

- A. Most people will experience more circadian rhythms throughout their day and fewer ultradian rhythms.
- B. Zeitgebers can synchronise and regulate a body's circadian rhythm.
- C. An example of an ultradian rhythm is the sleep-wake cycle.
- D. Ultradian rhythms follow a 24-hour period.

Question 37

Alisha has a phobia of clowns and has decided to seek treatment for it. Which of the following is not true regarding psychoeducation?

- A. Alisha's family and friends will be taught information about the condition.
- B. The sessions seek to reduce the stigma associated with experiencing a phobia.
- C. Family members and friends will help to challenge Alisha's cognitive biases associated with clowns.
- D. Her family and friends will help her to avoid clowns in her daily life so that she doesn't experience distress.

Question 38

Gayatri has just finished her Year 12 studies. The night before her final assessment she didn't go to sleep as she was frantically trying to review her notes. Identify an affective and behavioural response she is likely to experience during her examination.

	Affective Response	Behavioural Response
A	She has trouble concentrating and accidentally misreads a question.	She is clumsy and bumps into a chair she walks past.
B	She feels more anxious compared with when she completed her previous exams.	She isn't motivated to do her best on the examination.
C	She has trouble concentrating and accidentally misreads a question.	She isn't motivated to do her best on the examination.
D	She feels more anxious compared with when she completed her previous exams.	She is clumsy and bumps into a chair she walks past.

Question 39

Kevin started working as a television presenter three months ago. He is finding the job stressful but enjoyable; his boss says that he is thriving. Which of the following is the most accurate description of the role of cortisol in Kevin's stress response, according to Selye's General Adaptation Syndrome?

- A.** A. Cortisol would stop Kevin's immune system from working.
- B.** B. Cortisol would increase glucose in the bloodstream and help him deal with his chronic stress.
- C.** C. Cortisol would activate functions that are non-essential to his survival.
- D.** D. Kevin is in the Alarm stage, so cortisol would reduce the amount of adrenaline in his bloodstream.

Question 40

Children have been participating in yarnng circles with their Elders and are learning how to enhance their mental wellbeing. Participating in a yarnng circle is an example of which investigation methodology?

- A.** Experiment
- B.** Fieldwork
- C.** Correlation
- D.** Simulation

END OF SECTION A

Section B - Short Answer Questions**Instructions for Section B**

Answer **all** questions in the spaces provided.

Question 1 (10 marks)

Two years ago, Joan saw her doctor after her family noticed that she was becoming increasingly forgetful and short-tempered. Now, her symptoms have progressed further, and she can no longer live independently because she might go out for walks and get lost as she is unable to remember how to get home, even though she has lived in the same house for 40 years.

- a. Identify the brain structure most likely initially affected in Joan's brain and describe the role of that brain structure. [2 marks]

- b. After the doctors told Joan that she likely had Alzheimer's disease, her family tried to cheer her up by teaching her how to knit. Explain whether Joan would be able to knit by referring to long-term memory. [2 marks]

- c. Distinguish between the two main structural neuronal changes that occur in Alzheimer's disease. [2 marks]

Jai is a neuropsychological researcher and has developed a new drug that would stop the progressive neural decline that occurs in Alzheimer's disease.

- d. Jai wants to discover the effectiveness of his drug. One group takes a placebo pill, and the other group takes the drug. He then records the number of neurons with structural damage using measurements before and after the trial. Identify the most likely experimental design that Jai would use. [1 mark]

- e. Describe an ethical guideline that Jai would need to take into consideration when implementing his research. [2 marks]

- f. Jai's research was peer reviewed by his colleague John. John wrote that Jai's research had high reproducibility. Explain what is meant by this. [1 mark]

Question 2 (6 marks)

Jeremy is meeting his friends for a picnic and needs to remember the order of the streets to get there. The streets are Open St, Merrywell St, Mud St, Apple St and Kite St.

- a. Suggest how Jeremy could use an acrostic to remember the orders of these streets and explain how he could use those mnemonics to remember the streets. [3 marks]

- b. Using the Atkinson-Shiffrin Model of Memory, explain how this information would travel through the various stores. [3 marks]

Question 3 (2 marks)

Compare and contrast between Indigenous Ways of Knowing and Observational Learning. [2 marks]

Question 4 (6 marks)

- a. Mr Zhang would like to incorporate mindfulness meditation into his lessons to help maintain the mental wellbeing of his students. Outline how mindfulness can help enhance their mental wellbeing. [2 marks]

- b. He also encourages his students to bring their water bottles with them to each class. Explain how adequate hydration can help maintain mental wellbeing. [2 marks]

- c. After one class, Mr Zhang reflects that by encouraging mindfulness and adequate hydration, he has addressed two of the three components of the biopsychosocial approach to maintaining mental wellbeing. Identify the third component of the biopsychosocial approach that hasn't been addressed in the strategies above and outline a strategy that he could implement to ensure that all elements of the biopsychosocial approach are addressed. [2 marks]

Question 5 (11 marks)

Max works as a research assistant in a sleep laboratory. The current piece of research they are investigating is whether bright light therapy can help adolescents who are experiencing insomnia.

- a. Their role is to ensure that participants are aware of their withdrawal rights. Outline what this process entails for Max and the participants. In your response, identify whether withdrawal rights is an ethical concept or an ethical guideline. [2 marks]

- b. Evaluate the use of video monitoring as a measurement of physiological responses associated with sleep. [2 marks]

Strength:

Limitation:

- c. Suggest a way that sleep diaries could collect quantitative and qualitative data. [2 marks]

Quantitative data:

Qualitative data:

- d. Identify two differences between the typical sleep patterns of a 17-year-old and a newborn baby. [2 marks]

- e. During the night, Max mentioned to their colleague that one participant had entered REM sleep. Describe the readings that Max is likely to have observed when looking at an EMG. [2 marks]

EMG:

- f. During the debriefing stage of the experiment, one participant looked at their hypnogram and said that they had experienced four circadian rhythms that night. Outline what Max would say to correct their understanding. [1 mark]

Question 6 (6 marks)

During a visit to the local park, Marnie experienced a distressing incident when an unleashed dog suddenly attacked her, biting her leg. The distress she experienced had a significant impact on her. She can now no longer go to the park and avoids visiting the homes of any friends who have dogs. Marnie realises that her behaviour is maladaptive, so she has decided to seek help from a psychologist.

- a. During their first session together, Marnie's psychologist asks her to outline her thoughts and beliefs about dogs. Her psychologist reflected that she is showing memory bias and catastrophic thinking. Provide an example demonstrating what Marnie might be thinking about dogs for each cognitive bias. [2 marks]

Memory bias:

Catastrophic thinking:

- b. How could cognitive behavioural therapy be used to improve Marnie's phobia of dogs? [3 marks]

- c. Outline a limitation of using cognitive behaviour therapy. [1 mark]

Question 7 (12 marks)

Alana and Nikki are moving into a share house. Nikki is a paramedic who does shift work. Her roster usually consists of four night shifts followed by four day shifts, with a three day break in between. Nikki has difficulty falling asleep and is constantly tired when her alarm wakes her up for her next shift. While moving into their new accommodation, Nikki saw that one room was significantly smaller but had better curtains. She requested that she moves into this room.

- a. Using key terminology, explain why Nikki preferred the smaller darker room. [4 marks]

- b. In order to address her tiredness, Nikki has started to use bright light therapy as a zeitgeber. Should she use bright light therapy for half an hour before she goes to bed or for half an hour when she first wakes up before her shift. Justify your response. [2 marks]

- c. With reference to sleep hygiene, suggest two other ways in which Nikki could help to improve her sleep-wake patterns on the nights when she is not working. [3 marks]

- d. At her workplace Nikki has been required to learn a new computer system to record the treatment that has been provided to patients. Outline how long-term depression may have assisted in her learning this new process. [3 marks]

Question 8 (6 marks)

- a. The social and emotional wellbeing framework (SEWB) for Aboriginal and Torres Strait Islander peoples is a multidimensional and holistic framework. Outline what this means using examples from the framework. [4 marks]

Multidimensional:

Holistic:

- b. Cultural continuity and self-determination are integral cultural determinants that can help to maintain the wellbeing of Aboriginal and Torres Strait Islander peoples. Outline how cultural continuity can contribute to social and emotional wellbeing. [2 marks]

Question 9 (7 marks)

Felicity is renovating her apartment. One day she foolishly walked around the house without shoes on. As she walked into the kitchen, she accidentally stepped on a piece of glass. She quickly jumped and moved away from the kitchen.

- a. Identify the biological process involved when Felicity jumped and outline the role of this process in Felicity's response. [2 marks]

- b. Felicity was really surprised by her response as her body moved without her being aware. Describe the process involved that enable her to jump and move away so quickly. [3 marks]

- c. Afterwards she said to herself "I'm so confused, I moved before I even knew what was happening." Outline why this is a correct summary of what happened. [2 marks]

Question 10 (4 marks)

Hayden is a medical student. Today is his first day in the emergency department and he is eager to get started. Hayden is looking after an elderly gentleman, who appears to be calm but is experiencing some pain and discomfort after a car accident. As he examines his leg, Hayden accidentally knocks out an object that had been embedded and hidden by a blanket. Blood spurts out and the man is now screaming in pain. Hayden is so surprised by this. He jumps and then momentarily looks like he is going to fall over, he stares at the leg for a couple of seconds without doing anything to help the man. Shortly after, his supervisor comes over to check that he and the patient are okay. Hayden quickly responds and begins to use bandages to stop the bleeding.

- a. With reference to the flight-or-fight-or-freeze response, explain why Hayden's stopped and stared blankly at the leg when the man was bleeding and screaming. [2 marks]

- b. Identify the stage of Seyle's General Adaptation Syndrome Hayden experienced when he started using bandages to stop the bleeding. In your response, comment on Hayden's ability to cope with the stressor. [2 marks]

Question 11 (10 marks)

There is an increasing amount of research into the Gut-Brain Axis and the gut microbiome. The ABC news summary below highlights contemporary research focusing on how faecal transplants could be used to help improve mood.

How poo transplants and changes in your gut microbiome might affect your mood

Key points:

- Our intestines contain trillions of bacteria and other bugs collectively called the gut microbiome
- It's thought imbalances in gut microbe populations can contribute to diseases, including those affecting mental health
- Poo transplants can ease psychiatric symptoms in some people, but there are loads of questions to be answered before it becomes an approved treatment

What is a faecal transplant?

- Faecal matter, or stool, is collected from a donor
- Stool is mixed with a solution, strained and introduced to a patient's gut via colonoscopy, endoscopy, enema or in pill form
- A faecal transplant can be administered once or in multiple doses
- The aim is to replace the recipient's "bad" gut bacteria with the donor's "good" bacteria

In 2016, researchers discovered that putting poo from a human with depression into a rat, caused the rat to display depression-like symptoms.

Reference: Smith, B. (2022, March 6). How poo transplants and changes in your gut microbiome might affect your mood. ABC News. <https://www.abc.net.au/news/science/2022-03-06/gut-microbiome-mental-health-mood-psychiatric-disorders-poo/100851070>

Evaluate the use of a between-subjects design compared to a within-subjects design when investigating faecal transplants, including any relevant extraneous variables. In your response, refer to the gut-brain axis, gut microbiota and stress.

[illegible]

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Extra space for responses.

Clearly number all responses in this space.

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