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# VCE®
# REVISION QUESTIONS

# PSYCHOLOGY
# UNITS 1 & 2

STUDY DESIGN
FROM 2023

# Psychology Units 1 & 2

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Insight Publications Pty Ltd
3/350 Charman Road
Cheltenham VIC 3192
Australia

Tel: +61 3 8571 4950
Email: books@insightpublications.com.au

**www.insightpublications.com.au**



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Publisher: Robert Beardwood
Project manager: Olivia Shenken
Writer: Chris Heath
Reviewer: Karen Bares
Copy editor: Catherine Greenwood
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# Contents

# Introduction

Insight's *VCE Revision Questions: Psychology Units 1 & 2* contains questions, sample responses and tips to help you develop skills for assessment. The questions cover all areas of study in Units 1 and 2 of VCE Psychology. Key Science Skills, which are applicable across all areas of study, are covered in two separate sections.

A good habit to implement is to test yourself by working through this resource. The process of actively recalling information assists with deeper learning, and you will be able to compare your answers with the provided sample responses.

By using this resource as part of your study regimen throughout the year, you will be prepared for questions you may encounter in your assessment tasks.

We wish you well with your studies.

The Insight Team

# Questions

## Unit 1 | Area of Study 1 What influences psychological development?

### Multiple-choice questions

#### Question 1

Which of the following best describes the role of hereditary factors in psychological development?

**A.** Hereditary factors are the sole influence on psychological development.

**B.** Hereditary factors always influence psychological development independently of environmental factors.

**C.** Hereditary factors interact with environmental factors to influence psychological development.

**D.** Hereditary factors are not significant in psychological development.

#### Question 2

Which of the following is an example of an environmental factor influencing psychological development?

**A.** Genetic predispositions for anxiety

**B.** A supportive family environment

**C.** Hormonal changes during puberty

**D.** Development of muscles through working out

*Use the following information to answer Questions 3 and 4.*

Isis Holt is a former Australian Paralympian who had great success as a sprinter, winning multiple world championship titles, Commonwealth Games and Paralympic medals, before the age of 18. Isis competed in the T35 class, which includes individuals with cerebral palsy, a coordination disorder that is most commonly caused by physical trauma during birth. Isis credited her success to learning resilience and working carefully with both her coach and a psychologist as part of her training.

#### Question 3

Which of the following best categorises the factors affecting Isis's development?

**A.** Cerebral palsy is a hereditary factor, whereas training and working with her psychologist is an environmental factor.

**B.** Cerebral palsy and physical training are environmental factors, whereas resilience is a hereditary factor.

**C.** Cerebral palsy, physical training and resilience are all hereditary factors.

**D.** Cerebral palsy, physical training and resilience are all environmental factors.

### Question 4

According to the biopsychosocial model, the influences on Isis's psychological development and mental wellbeing could be categorised as

| | Biological | Social | Psychological |
|---|---|---|---|
| **A.** | cerebral palsy | support from her coach | resilience level |
| **B.** | resilience level | cerebral palsy | receiving medals |
| **C.** | building muscles through physical training | support from her coach | birth trauma |
| **D.** | cerebral palsy | resilience levels | receiving medals |

### Question 5

The four aspects of human development studied by developmental psychologists are

**A.** physical, cognitive, mental and social.

**B.** physical, cognitive, social and emotional.

**C.** physical, cognitive, social and individual difference.

**D.** physical, cognitive, emotional and continuous.

### Question 6

Which of the following best describes the psychological component of the biopsychosocial model?

**A.** A person sharing their father's sense of humour

**B.** A best friend coming to comfort a person when they are grieving

**C.** A person's anger influencing their decisions

**D.** A person inheriting a square jaw and dimpled chin

### Question 7

In the biopsychosocial model, which of the following accurately describes a social influence on mental wellbeing?

**A.** Hormonal imbalances affecting mood regulation

**B.** An individual's coping mechanisms for stress

**C.** A person's relationship with their significant other

**D.** The presence of neuroplasticity in the brain

### Question 8

Which of the following is not one of the main attachment styles identified by Mary Ainsworth in her Strange Situation experiment?

**A.** Secure attachment

**B.** Insecure-avoidant attachment

**C.** Insecure-resistant attachment

**D.** Disorganised attachment

### Question 9

What behaviour is characteristic of a child with an insecure-avoidant attachment style in Ainsworth's Strange Situation?

**A.** They show significant distress when the carer leaves and are comforted when they return.

**B.** They show little to no distress when the carer leaves and seek attention on their return.

**C.** They cling to the carer and resist exploration.

**D.** They may show limited distress when carer leaves and seem to ignore the caregiver upon return.

### Question 10

What is typical of a child with secure attachment in Ainsworth's Strange Situation?

**A.** The child seeks contact and comfort from the caregiver upon reunion.

**B.** The child becomes excessively distressed when the caregiver leaves but ignores them upon return.

**C.** The child is indifferent to the caregiver's presence or absence.

**D.** The child shows fear or anger towards the caregiver upon reunion.

### Question 11

Which of the following is considered an accomplishment of the concrete operational stage in Piaget's theory?

**A.** Believing that others see the world in the same way that they do

**B.** The ability to understand that some objects can be returned to a previous state

**C.** The use of symbols and language to represent objects

**D.** The ability to reason abstractly

*Use the following information to answer Questions 12 and 13.*

Olivia and her sister Emma are playing in the garden with their grandmother, Joy. When Joy sees Olivia hit Emma for taking her toy, she tells Emma off and says, 'You must be nice to your sister.' Emma then says, 'But Olivia doesn't have a sister; she's my sister!' Olivia retorts, 'You are so stupid Emma, if you're my sister, I'm your sister!'

Later, when playing hide and seek, Olivia laughs at her sister when Emma does not realise that just because she cannot see their grandmother searching, it does not mean that Joy cannot see Emma in her poor hiding place.

### Question 12

Which stage of Piaget's theory is Emma most likely in?

**A.** Sensorimotor, as she is unable to show goal-directed behaviour by moving to a good hiding place

**B.** Preoperational, as she is unable to understand that her grandmother can still see her

**C.** Preoperational, as she does not show the ability to conserve information

**D.** Concrete operational, as she cannot follow logical reasoning

### Question 13

What two accomplishments does Olivia demonstrate in this scenario?

**A.** Overcoming egocentrism and reversibility

**B.** Reversibility and logical reasoning

**C.** Overcoming egocentrism and conservation

**D.** Abstract reasoning and egocentrism

### Question 14

Which of the following psychosocial processes occurs during Erikson's stage of trust versus mistrust?

**A.** Learning to develop a sense of identity

**B.** Developing the ability to form intimate relationships

**C.** Developing confidence in a caregiver based on caregiver responsiveness

**D.** Learning to achieve independence from caregivers

### Question 15

At what stage of life do individuals face the conflict of identity versus role confusion?

**A.** Childhood

**B.** Adolescence

**C.** Adulthood

**D.** Old age

### Question 16

In Erikson's stage of integrity versus despair, what is the primary focus?

**A.** The ability to form intimate relationships to avoid being left unfulfilled

**B.** Reflecting on one's life and feeling satisfied or regretful

**C.** Developing a sense of personal identity or being unable to grow

**D.** Gaining independence from parental figures or feeling powerless

### Question 17

Which of the following is true about sensitive periods in psychological development?

**A.** Sensitive periods refer to times in a person's life when they are biologically predisposed to learn specific skills efficiently.

**B.** Sensitive periods only occur in humans before birth.

**C.** Sensitive periods are fixed and identical for all individuals.

**D.** Sensitive periods only apply to language development in infants.

### Question 18

Which of the following is an example of a sensitive period in psychological development?

**A.** The first year of life being the only time a child can learn motor skills such as walking

**B.** The inability to learn a second language after the age of 5

**C.** Adolescence being the most sensitive time for emotional regulation to develop

**D.** The period between 2 and 3 years when a child develops basic social skills through interaction

### Question 19

Which of the following best describes the difference between sensitive periods and critical periods in psychological development?

**A.** Sensitive periods are necessarily shorter than critical periods.

**B.** Critical periods are irreversible, whereas sensitive periods are flexible.

**C.** Sensitive periods are only related to emotional development.

**D.** Both terms have functionally the same meaning when applied to human development.

### Question 20

Mark is a healthy eight-year-old but is struggling at school, and the school psychologist has suggested he have tests to determine his level of cognitive development. This testing may involve

**A.** observing his social interactions with other children.

**B.** observing his ability to physically place small pieces of a puzzle into the correct spaces.

**C.** observing his level of confidence when his mother leaves the room.

**D.** assessing his thinking and problem-solving skills.

### Question 21

The nature versus nurture debate suggests that

**A.** environmental factors are more important than biological factors in human development.

**B.** biological factors may be equally as important as environmental factors in human development.

**C.** environment is not important in human development.

**D.** it is clear that biological factors are more important than environmental factors in human development.

### Question 22

Which of the following is an example of a maladaptive behaviour?

**A.** A student regularly feeling anxious before exams and talking to her coordinator about the issue

**B.** A teenager avoiding social events they would otherwise like to attend because of severe social anxiety

**C.** A person experiencing stress during work deadlines

**D.** A person enjoying solitary hobbies during a holiday and choosing not to respond to phone calls and emails during this time

### Question 23

Which of the following is a specific limitation of using statistical rarity to define atypical behaviour?

**A.** It does not account for cultural differences.

**B.** It focuses on frequency of certain behaviour patterns.

**C.** It relies on social norms.

**D.** It is always generalisable across all cultures.

### Question 24

Which of the following is a key advantage of using social norms to categorise typical or atypical behaviour?

**A.** It allows behaviour to be evaluated on the basis of an individual's experiences in a group.

**B.** It provides an objective measure of typicality rather than subjective.

**C.** It accounts for specific cultural influences on what is considered normal.

**D.** It helps categorise behaviour based on the expectations of a relevant group.

### Question 25

Caitlin is very upset when her beautiful standard poodle, Reilly, goes missing. He is her constant companion. She raised him from a pup during the COVID-19 pandemic and considers him her best friend. Unfortunately, he ran away during a lightning storm and Caitlin is devastated. She calls in sick at work and spends the week in bed, crying because she misses him so much, and catastrophising that he is likely to have been hit by a car and will never come back.

Which of the following is not an appropriate evaluation of Caitlin's behaviour?

**A.** Caitlin's behaviour is atypical because a social norm would be to go out and look for her dog, rather than cry in bed.

**B.** Caitlin's behaviour is maladaptive as it is unlikely to be productive in finding her dog or keeping her job.

**C.** Caitlin's behaviour is statistically rare because most people would be upset by losing their dog.

**D.** Caitlin's behaviour is atypical as her level of personal distress at losing her dog is having a significant impact on her daily functioning.

### Question 26

Which of the following best describes the concept of 'normality' in psychological development?

**A.** The absence of any psychological distress or difficulties

**B.** Behaviour that conforms to societal expectations and norms

**C.** The ability to perform at a high level in every aspect of life

**D.** The ability to function and adapt to life despite challenges

### Question 27

Which of the following is an example of a behaviour that would be considered adaptive?

**A.** A teenager coping with stress by seeking to problem-solve

**B.** A child constantly seeking reassurance from others due to anxiety

**C.** An adult avoiding social situations due to fear of judgement

**D.** A person using alcohol to manage their emotions

### Question 28

Which of the following best outlines neurotypicality?

**A.** The ability to perform complex cognitive tasks successfully

**B.** The absence of any mental health disorder or emotional distress

**C.** Cognitive, emotional and social development that matches societal norms

**D.** The presence of abnormal patterns of behaviour and cognition

### Question 29

Which of the following best describes attention deficit hyperactivity disorder (ADHD)–inattentive symptoms?

**A.** Difficulty maintaining focus, easily distracted

**B.** Constant fidgeting and an inability to stay still

**C.** Challenges with written language and strength with verbal descriptions

**D.** Difficulty in social interactions and repetitive behaviours

### Question 30

Which of the following is a common misconception about ADHD?

**A.** ADHD can only be diagnosed in children.

**B.** ADHD symptoms may change over time, especially with age.

**C.** People with ADHD are more likely to be creative and inventive.

**D.** People with ADHD often struggle with organisation and time management.

*Use the following information to answer Questions 31 and 32.*

Annie was diagnosed with dyslexia after her teacher noticed her exhibiting a number of characteristics that can be associated with dyslexia and encouraged her parents to organise an assessment for her.

### Question 31

Which of the following strengths and challenges are most likely to have been observed by Annie's teacher?

| | Strength(s) | Challenge(s) |
|---|---|---|
| **A.** | Reading speed | Handwriting and spelling |
| **B.** | Strong social awareness | Presenting her learning with her friends |
| **C.** | Handwriting and spelling | Algebra calculations |
| **D.** | Creativity and strong verbal language skills | Reading accurately and at speed |

### Question 32

What type of qualification is the individual who conducted Annie's assessment and diagnosis of dyslexia likely to have?

**A.** Mental health support worker

**B.** Psychiatrist

**C.** Psychologist

**D.** General practitioner

### Question 33

Which of the following statements about autism spectrum disorder (ASD) is correct?

**A.** ASD often presents similarly in males and females.

**B.** Individuals with ASD typically struggle with reading social cues.

**C.** ASD primarily affects cognitive functions, not social skills.

**D.** Individuals with ASD generally find functioning is no longer affected in adulthood.

### Question 34

Nagisa is going to the concert of her favourite singer. She excitedly talks about it non-stop for the two weeks leading up to the concert, even to students and teachers she does not know or in the middle of conversations about different topics. She finds it hard to concentrate on her assessments because of her preoccupation with the concert. Nagisa asks permission to leave school early on the day of the concert because she needs to prepare her costume precisely and wants to listen to every song in the setlist before she leaves for the concert, as she does for every concert she attends.

Which example of neurodiversity would you anticipate Nagisa may experience?

**A.** ADHD–hyperactive, as she shows difficulty with concentration and focus

**B.** Dyslexia, as she finds it challenging to complete assessments but freely engages in verbal interaction

**C.** ASD, as she shows evidence of having restricted interests and repetitive behaviours

**D.** ADHD–inattentive, as she shows an ability to hyperfocus on areas of interest only

### Question 35

Joshua has been diagnosed with ADHD–inattentive subtype and has been referred to a psychiatrist. Why might this be?

**A.** The psychiatrist is likely to have a greater expertise in ADHD than a psychologist.

**B.** A psychiatrist may be able to prescribe Joshua a medication to assist with his concentration.

**C.** A psychiatrist is likely to be best placed to engage in therapeutic techniques with Joshua to improve his time management and organisation.

**D.** An individual with ADHD must be under the care of a medical practitioner.

### Question 36

What is a key responsibility of mental health organisations in supporting individuals with mental health conditions?

**A.** Ensuring that patients have access to specific medications

**B.** Providing community-based resources and support services

**C.** Assessing patients' coping behaviours as adaptive or maladaptive

**D.** Enforcing strict diagnostic criteria for all mental health conditions

### Question 37

Why is it important for mental health professionals to develop and practise cultural competence?

**A.** To ensure that therapy is conducted in the patient's language of preference

**B.** To make sure that the patient's cultural practices do not influence the treatment of mental health disorders

**C.** To reduce the need for culturally diverse staff in mental health organisations

**D.** To understand how culture can affect a client's mental health and treatment needs

## Short-answer questions

### Question 1 (5 marks)

Tui is a talented pianist, the daughter of two professional musicians. Her mother taught her to play and has supported her to prepare for practical music exams over her many years of learning. However, some of her more outspoken classmates at school made fun of her for playing classical music, saying that it was too boring and depressing, just like her.

**a.** Identify **one** hereditary and **one** environmental factor that have influenced Tui. 2 marks

Hereditary: _____

Environmental: _____

**b.** Evaluate Tui's likely level of confidence in public performance with reference to **two** factors. 3 marks

**Question 2** (4 marks)

Wendy and Jenna are identical twins who, due to their parents' divorce when they were infants, have been raised apart.

Wendy has been raised in Mildura by her father, who has encouraged her to engage in practical activities and frequently withdraws her from school to compete in sporting events.

Jenna has been raised by her mother in Melbourne and has a strict schedule of after-school academic and music tuition each day in addition to school.

With reference to factors influencing psychological development, explain why Jenna may have more academic success than Wendy.

**Question 3** (2 marks)

Amal is experiencing anxiety. Suggest **one** possible biological factor and **one** social factor that may be contributing to this.

Biological: _____

Social: _____

**Question 4** (3 marks)

David is enjoying his Year 12 studies. He knows that he has some challenging exams coming up at the end of the year, but he is making sure to create lots of good memories of the year, such as by taking part in the school play and playing pranks on his friends. He has recently recovered from a fight with leukaemia, so he views every day as a blessing and is thankful for the opportunities he has ahead of him. He believes that as long as he faces the world with confidence, he'll be able to make it through.

Use the biopsychosocial model to explain David's state of mental wellbeing.

**Question 5** (3 marks)

Gita is a two-year-old who has recently started at her local daycare, Sunnyside Children's Centre. When her mother dropped her off at Sunnyside the first morning and pretended to leave, Gita became very upset and cried for some time. At first, the early childhood teachers could not get her to calm down at all, but once her mother came back in, she ran to her for a big hug and quickly calmed down.

**a.** Identify the type of attachment Gita has towards her mother. 1 mark

**b.** State **two** pieces of evidence from the scenario that show this type of attachment. 2 marks

**Question 6** (8 marks)

Yair reads about a study by a psychologist called Mary Ainsworth, where infants and their primary caregiver would enter a room, followed by a 'stranger', then the caregiver would leave for a period, before returning. During this study, the behaviour of the infants was observed and categorised.

Yair and his partner Tony agree that they should see how their infant Sadie will react in a re-enactment of the study. They arrange for one of Tony's friends, Jocelyn, to visit and they approximate the steps of Ainsworth's study.

**a.** Name the process of psychological development studied by Mary Ainsworth. 1 mark

**b.** What was Mary Ainsworth's study called? 1 mark

**c.** Yair hypothesises that Sadie will be strongly attached to him even though Tony is her primary caregiver, and predicts her behaviour accordingly. Complete the following table to label and/or describe Sadie's predicted behaviours as per Ainsworth's study.

| Behaviour classification | Behaviour |
|---|---|
| | Sadie will play with the toys and gradually explore, but is likely to avoid Jocelyn at first. |
| Separation anxiety | |
| Reunion behaviour | |

3 marks

**d.** Yair is surprised when Sadie instead shows behaviours better reflective of insecure-resistant attachment. Outline **two** behaviours she may have displayed that would differ from **part c.** and explain why these would occur. 3 marks

**Question 7** (3 marks)

Baby Jimena is 18 months old. Identify what stage of Piaget's theory of cognitive development she is in and outline **two** accomplishments she may have achieved.

**Question 8** (6 marks)

Aditi, a seven-year-old, is playing with a set of blocks and understands that even though the blocks are rearranged into a different shape, the number of blocks remains the same. Her younger cousin Dinesh doesn't understand this and insists that the number of blocks has changed because they look different.

**a.** Identify the stage of Piaget's theory that Aditi is in. 1 mark

**b.** What age would Piaget predict Dinesh to be? 1 mark

**c.** Name the specific accomplishment that Aditi shows in this scenario. 1 mark

**d.** Explain what Dinesh would be likely to say if his father were to show him two glasses with equal amounts of liquid, then pour one glass into a wider, shallower container. 3 marks

**Question 9** (5 marks)

Maggie, a 75-year-old woman, reflects on her life and feels a sense of contentment. She is comfortable with her legacy and the life she has lived. She is very proud of her grandson, Jake, a 15-year-old who is doing well at school and is usually very polite. In contrast to his grandmother, Jake currently feels confused. He likes spending time with his grandmother, but he struggles to fit in with his peers. He is questioning who he wants to be in life and has no idea about his future.

**a.** Name the psychologist who developed the theory of psychosocial development. 1 mark

**b.** The theory of psychosocial development includes a number of stages. Identify which stage Maggie and Jake are in, respectively. Categorise which psychosocial stages Maggie and Jake are in. 2 marks

Maggie: _____

Jake: _____

**c.** How might Jake resolve his conflict? 2 marks

**Question 10** (2 marks)

Emily is a 35-year-old woman in the generativity versus stagnation psychosocial stage. Outline how she can successfully move past this stage.

**Question 11** (6 marks)

Krista is a talented 13-year-old gymnast who performs on the beam. Her parents explain excitedly to anyone who will let them that she has always had an amazing sense of balance and motor coordination. She seemed to have developed this when she was a toddler, learning to walk while living on her parents' sailboat until they returned to Australia when she was five and her baby brother Nico was born. A doctor explained to them that this early life experience may have been crucial in Krista developing her skills, and that now nine-year-old Nico would be unlikely to ever develop similar skills no matter how hard he tries.

**a.** State the type of developmental period that Krista was in while on the sailboat. 1 mark

**b.** Explain why Nico will never be able to develop the level of balancing skill that Krista has. 3 marks

**c.** Krista and Nico have recently moved to a new school, where they take language classes in Mandarin.

With reference to another type of developmental period, why might it be easier for Nico to learn Mandarin than for Krista? 2 marks

**Question 12** (5 marks)

Layla finds it challenging to keep up with her university coursework, often feeling overwhelmed and unable to concentrate. She finds it peaceful and calming to catch up with her friends and visit family but desperately needs to study hard for exams. In the two weeks before exams, she isolates herself from friends and family and takes time off work so that she can focus solely on her study. She thinks it is a good idea because lots of her fellow university students limit social engagement during exams, but she finds it only increases her anxiety and leads to her panicking before the exams.

**a.** Name the psychological criterion that best describes Layla's determination of her behaviour and outline how it influences her to perceive her behaviour as 'typical'. 2 marks

**b.** Evaluate whether this strategy was adaptive for Layla. 3 marks

**Question 13** (2 marks)

Quoc is a 40-year-old account executive who is always punctual to meetings and highly organised. Outline how this behaviour could be considered neurotypical and adaptive.

**Question 14** (5 marks)

Alex is an eight-year-old child who finds it difficult to sit still in class and constantly fidgets. If the classroom is silent and he is working on an activity he loves, such as drawing, he can block out the world around him and show sustained focus. However, if he is not enthused by a topic, he is easily distracted by the smallest noise or novel stimulus. Alex often likes to be active and will run and jump around the classroom until his teacher tells him off.

**a.** State the specific neurodiverse experience that Alex may be diagnosed with. 1 mark

**b.** Explain how Alex's strengths in creativity may be linked to his neurodiversity. 2 marks

**c.** Outline **one** specific challenge Alex may face in his learning in the future at secondary school, and **one** way he could be supported by his teachers. 2 marks

**Question 15** (5 marks)

Ben, a six-year-old child, has difficulty making eye contact and prefers to play alone. He has a deep interest in trains and spends hours playing with train sets, memorising train schedules, and discussing his favourite trains. His parents are seeking support for his social development as his prep teacher reports that he will not engage with any other students unless they are talking about or playing with the train set in the classroom. Ben says there is no point in talking to them.

**a.** Explain how Ben's interest in trains may reflect a neurodiverse trait, and how this may be a positive for Ben. 3 marks

**b.** Outline **one** potential support strategy that could be used to help Ben with his social development. 1 mark

**c.** Identify **one** difference between common signs of ASD in girls and boys. 1 mark

**Question 16** (6 marks)

Jasmine is a Year 10 student who has shown good academic achievement in previous years but is starting to fall behind with her written work.

Her mentor teacher broaches the subject teachers' concerns with her, and Jasmine describes feeling very tired, and having to work incredibly hard to manage the workload of Year 10. She says that she has always had to work very hard at school but has been able to keep up until now. When her mentor discusses what has changed this year, Jasmine identifies that the volume of reading required has increased dramatically and describes that sometimes it can seem as though the words just 'swim before her eyes' and don't make sense.

Her teachers have also noticed that she finds it difficult to finish tests on time, often leaving questions blank. They report that she is a bright and bubbly student in class, is socially well connected, regularly engages in class discussions and is a good verbal contributor.

Her mentor teacher discusses the situation with the school's learning support team, who suspect Jasmine may have a neurodiverse learning profile.

**a.** What type of neurodiversity is Jasmine experiencing? 1 mark

**b.** Identify **two** challenges Jasmine may experience. 2 marks

**c.** Identify **one** of Jasmine's strengths as observed by her teachers and discuss **two** support strategies that could be implemented by them to utilise this strength. 3 marks

**Question 17** (2 marks)

Outline the difference between the support offered by a psychologist and a psychiatrist to an individual experiencing ADHD, with reference to examples from the biopsychosocial model.

**Question 18** (2 marks)

Identify a group of people that an organisation might work with to support a child with ASD, and how they would work with this group to support the child.

# Unit 1 | Area of Study 2 How are mental processes and behaviour influenced by the brain?

## Multiple-choice questions

### Question 1

What was the focus of the heart versus brain debate?

**A.** Determining whether the mind and body are interconnected structures or distinct entities with different roles

**B.** Which of the two structures controlled mental processes and behaviour

**C.** Looking at the effect of skull shape on personality and heart size on function

**D.** A debate held between early physicians and early psychologists about who was better qualified to treat patients

### Question 2

What technique involves the purposeful removal or destruction of different areas of brain tissue for the primary purpose of observing changes in behaviour and determining function of the affected areas?

**A.** Split-brain surgery

**B.** Phrenology

**C.** Structural neuroimaging

**D.** Ablation

### Question 3

Which of the following options shows approaches that could legitimately give insight into the functions of various parts of the brain?

**A.** Structural neuroimaging, ablation, phrenology

**B.** fMRI, heart versus brain debate, CT

**C.** Mind–body problem, lesions, MRI

**D.** CT, ablation, split-brain studies

### Question 4

Which of the following best describes the main difference between structural and functional neuroimaging techniques?

**A.** Structural imaging measures brain activity during specific tasks, whereas functional imaging provides detailed images of brain anatomy.

**B.** Structural imaging detects neurochemical levels in the brain, whereas functional imaging identifies skull abnormalities.

**C.** Structural imaging shows the physical structure of the brain, whereas functional imaging shows brain activity in real time.

**D.** Structural imaging is only used for research, whereas functional imaging is only used in clinical diagnosis.

### Question 5

Which of the following correctly describes the differences between fMRI and PET scans?

**A.** fMRI is a functional neuroimaging technique, whereas PET is a structural technique.

**B.** fMRI is a higher resolution, more detailed and time-sensitive neuroimaging technique.

**C.** PET is a more expensive, but better-quality functional neuroimaging technique.

**D.** Both fMRI and PET are functional neuroimaging techniques that can be used for diagnosis and research into brain functioning.

### Question 6

What is one advantage and disadvantage of using CT scanning as an imaging technique?

| | Advantage | Disadvantage |
|---|---|---|
| **A.** | High-resolution images of soft tissues | Limited availability in hospitals |
| **B.** | Quick and widely accessible for emergency situations | Exposure to ionising radiation |
| **C.** | No radiation exposure | Poor visualisation of bone structures |
| **D.** | Excellent for measuring brain activity in real time | Expensive and time consuming |

### Question 7

Which region of the forebrain, particularly the neocortex, is most associated with higher-order functions such as reasoning, problem-solving and planning?

**A.** Thalamus

**B.** Hypothalamus

**C.** Cerebrum

**D.** Reticular formation

### Question 8

What is the primary role of the pons in the brain?

**A.** Regulating heart rate and breathing

**B.** Coordinating voluntary movement and balance

**C.** Relaying sensory and motor information between the brain and spinal cord

**D.** Facilitating communication between the cerebellum and the forebrain

### Question 9

Which of the following best describes the role of the parietal lobe?

**A.** Processing emotional responses and regulating hormones

**B.** Coordinating voluntary muscle movements

**C.** Processing sensory information such as touch, pressure and pain

**D.** Recognising faces and emotional expressions

### Question 10

Which lobe of the neocortex contains the primary auditory cortex?

**A.** Parietal lobe

**B.** Temporal lobe

**C.** Frontal lobe

**D.** Occipital lobe

### Question 11

Where is Broca's area located, and what is its primary function?

**A.** Left temporal lobe; responsible for understanding spoken language

**B.** Left frontal lobe; involved in speech production

**C.** Frontal lobe; responsible for understanding spoken language

**D.** Right parietal lobe; involved in spatial awareness

### Question 12

What is the term that describes the brain's ability to reorganise itself and form new neural connections in response to learning or after injury?

**A.** Neurogenesis

**B.** Neuroplasticity

**C.** Synaptogenesis

**D.** Developmental plasticity

### Question 13

Which of the following is a characteristic of adaptive plasticity following brain trauma?

**A.** The brain forms new connections to compensate for the lost function.

**B.** The brain loses its ability to compensate for the injury.

**C.** The brain forms harmful, dysfunctional connections.

**D.** The brain's structure becomes fixed and unchangeable after trauma.

### Question 14

Which of the following accurately describes how neuroplasticity occurs?

**A.** Active engagement in rehabilitation is irrelevant for recovery from injury.

**B.** Neuroplasticity occurs only in situations of learning or trauma.

**C.** Rehabilitation after injury results in sprouting of new neural connections but cannot involve rerouting of pre-existing neuronal pathways.

**D.** Neuroplasticity will occur more efficiently in a younger individual than in an older individual.

### Question 15

After a stroke, Jane is unable to use her left arm. Over time, she regains limited movement in the arm, although her doctors say that the original neural pathway in her brain is likely to be permanently damaged and her brain must be using alternative pathways.

What process of adaptive plasticity is being shown?

**A.** Synaptogenesis

**B.** Pruning

**C.** Rerouting

**D.** Neurogenesis

### Question 16

Ember is learning a new language for the first time. Over the first few months of learning, they find themselves becoming better at understanding individual words and sentences, and at speaking the language with the right accent.

What is occurring in Ember's brain to help them learn?

**A.** Synaptogenesis, as their brain develops new neural connections involved in learning the language

**B.** Pruning, as their brain reduces the synapses used to focus on the new language

**C.** Rerouting, as they focus on the new language, pathways used for their first language are repurposed

**D.** Developmental plasticity, as Ember is in a sensitive period for second language acquisition

### Question 17

An individual with an acquired brain injury may experience emotional difficulties, such as irritability and mood swings. These symptoms are most likely to be a result of damage to which part of the brain?

**A.** Occipital lobe

**B.** Frontal lobe

**C.** Temporal lobe

**D.** Cerebellum

### Question 18

Which of the following is a psychological impact of an acquired brain injury?

**A.** Paralysis of the left leg

**B.** Changes in cognitive abilities, such as memory loss

**C.** Difficulty with speech and swallowing

**D.** Impaired vision

### Question 19

After Sarah has a bad car accident, she experiences difficulty with her balance and has trouble coordinating her hand movements. Additionally, she feels more irritable and has difficulty controlling her emotions. Which of the following shows the correct categorisation of Sarah's symptoms?

| | Balance issues | Irritability | Coordination difficulty |
|---|---|---|---|
| **A.** | Psychological | Psychological | Biological |
| **B.** | Biological | Biological | Social |
| **C.** | Biological | Social | Psychological |
| **D.** | Biological | Psychological | Biological |

### Question 20

Which of the following best describes a traumatic brain injury?

**A.** A degenerative condition that gradually affects memory and cognitive skills

**B.** A brain disorder caused by a genetic mutation during development

**C.** A disruption in normal brain function caused by an external force, such as a blow to the head

**D.** A chemical imbalance in the brain that affects mood and behaviour

### Question 21

Tom works in a warehouse. As a result of a work accident in which he received a traumatic brain injury, he now experiences persistent headaches and blurred vision. He finds it difficult to get along with his coworkers, which has started affecting his work performance. At times, he has difficulty concentrating during meetings, which further affects his work. Which of the following categorises the impact of Tom's injury?

| | Biological | Psychological | Social |
|---|---|---|---|
| **A.** | Headaches | Blurred vision | Work disagreements |
| **B.** | Headaches | Difficulty concentrating | Work disagreements |
| **C.** | Blurred vision | Work disagreements | Difficulty concentrating |
| **D.** | Blurred vision | Headaches | Work performance |

### Question 22

What is a key difference between a traumatic brain injury (TBI) and an acquired brain injury (ABI)?

**A.** ABI occurs before birth, whereas TBI occurs after birth.

**B.** TBI includes all types of brain injuries, whereas ABI only includes injuries from external force.

**C.** TBI results from external force, whereas ABI includes both traumatic and non-traumatic causes.

**D.** There is no difference; the terms are interchangeable.

### Question 23

What is machine learning commonly used for in the context of psychological research?

**A.** Diagnosing psychological disorders by analysing large datasets

**B.** Replacing therapists in clinical sessions

**C.** Editing brain imaging scans for visual presentation

**D.** Preventing memory loss through brain stimulation

### Question 24

How is machine learning contributing to research on neurological disorders such as Parkinson's disease?

**A.** By predicting the exact location of brain lesions in the early stages

**B.** By identifying potential biomarkers for early detection through using existing patient records

**C.** By directly repairing damaged neurons using AI algorithms

**D.** By improving motor coordination through neuroplasticity

### Question 25

How is machine learning currently helping researchers understand chronic traumatic encephalopathy (CTE)?

**A.** By creating models to predict the progression of CTE based on neuroimaging data

**B.** By repairing damaged brain cells associated with CTE

**C.** Through analysing performance data of football players to determine the risk of developing CTE

**D.** By developing wearable devices to monitor CTE symptoms in real time

### Question 26

What role does the gut–brain axis play in understanding Parkinson's disease, according to contemporary research?

**A.** It indicates that the disease is primarily caused by viral infections in the gut.

**B.** It suggests that changes in gut bacteria may contribute to disease progression.

**C.** It demonstrates that Parkinson's disease is a purely genetic disorder.

**D.** It highlights that motor control is mainly influenced by gut health.

### Question 27

Which of the following correctly describes how MRI and fMRI could be used when investigating Parkinson's disease?

| | MRI | fMRI |
|---|---|---|
| **A.** | Measures brain activity during movement tasks | Provides detailed structural images of brain regions |
| **B.** | Detects changes in dopamine transporter levels | Tracks degeneration of brain tissue over time |
| **C.** | Produces high-resolution images of brain structure to detect atrophy | Monitors brain activity and connectivity during motor or cognitive tasks |
| **D.** | Measures neurotransmitter release in real time | Identifies brain tumours affecting motor pathways |

### Question 28

Which of the following best describes a neurodegenerative disease?

**A.** A disorder caused by an infection that temporarily affects the brain and spinal cord

**B.** Negative symptoms that immediately result from physical trauma to the brain, such as a concussion

**C.** A sudden disruption in blood flow to the brain, causing temporary loss of function

**D.** A progressive loss of structure or function of neurons, often leading to cognitive or motor decline

### Question 29

Which of the following best describes chronic traumatic encephalopathy (CTE)?

**A.** A disorder caused by a single traumatic brain injury

**B.** A progressive neurodegenerative disease linked to repeated head trauma

**C.** A disease primarily affecting the spinal cord

**D.** A genetic disorder unrelated to head injuries

### Question 30

What is one of the challenges in diagnosing CTE?

**A.** It can only be diagnosed through blood tests.

**B.** It can only be diagnosed in living patients.

**C.** It is typically diagnosed through brain imaging methods such as MRI.

**D.** It can only be definitively diagnosed after death through brain tissue examination.

### Question 31

What is the primary reason why CTE is considered a fatal disease?

**A.** It leads to the complete loss of all brain function within months of diagnosis.

**B.** It causes progressive brain degeneration that severely impairs cognitive, emotional and motor functions.

**C.** It only affects motor coordination and does not impair cognitive function.

**D.** It primarily affects the spinal cord, leading to paralysis.

## Short-answer questions

### Question 1 (3 marks)

Explain Franz Gall's concept of phrenology, with reference to **one** strength and **one** limitation of this approach to studying the brain.

**Question 2** (2 marks)

Describe how modern neuroimaging techniques advanced our understanding of the brain compared to earlier methods.

**Question 3** (6 marks)

In the 1920s, Karl Lashley trained rats to run through mazes. In order to work out how they were able to learn to do this, he caused lesions in parts of their brains and looked at how this affected their ability to run through the maze.

**a.** What is a brain lesion? 1 mark

**b.** Explain how Lashley could have used ablation to understand the brain function of these rats. 3 marks

**c.** Explain **one** reason why it would be unethical to use ablation studies on humans. 2 marks

**Question 4** (6 marks)

A neuroscientist is conducting research on a patient who has undergone a split-brain operation to treat severe epilepsy. After the surgery, the patient reports that when they cannot see the object, they cannot verbally name objects placed in their left hand but can describe them if they use their right hand.

**a.** What is the term used to describe the different sides of the brain having different functions? 1 mark

**b.** Explain how a split-brain operation would have caused the difficulty naming an object placed in the patient's left hand. 3 marks

**c.** Describe how functional neuroimaging (such as fMRI) would help investigate brain activity in a split-brain patient. 2 marks

**Question 5** (3 marks)

Jun was the victim of a coward punch while on a night out and struck his head hard against a concrete wall when he was punched. He was taken to hospital where he has been placed on a ventilator due to brain damage impacting his ability to perform vital functions.

**a.** Name the structure that has probably been damaged if Jun can no longer regulate his heartbeat, and which region of the brain it is located in. 2 marks

**b.** If doctors conduct a brain scan and find damage to his cerebellum, outline **one** difficulty this may cause. 1 mark

**Question 6** (2 marks)

Outline a major difference in function between the hindbrain and forebrain.

**Question 7** (3 marks)

A researcher is studying a patient who has lost the ability to feel hunger and thirst, even though their sensory perception seems normal. The patient also has difficulty regulating body temperature.

**a.** Identify the specific brain region responsible for regulating hunger, thirst and body temperature. 1 mark

**b.** Describe the role of this brain region in maintaining homeostasis with reference to temperature. 2 marks

**Question 8** (4 marks)

After suffering a stroke, 68-year-old Margot began to show some unusual behaviour. When eating meals in hospital, she would only eat food from the right side of the plate, and when her two grandchildren were sitting either side of her bed (Emily to the left, Grace to the right), she asked Grace why Emily hadn't come to visit.

With reference to contralateral control and the neocortex (cerebral cortex), name and explain Margot's condition.

**Question 9** (8 marks)

Tonya had an illness when she was 12 called viral encephalitis. This is where the brain swells as a result of contracting a virus. She needed hospital treatment to manage the swelling and eventually recovered. However, since her illness she has experienced ongoing difficulty with her memory and facial recognition. This is slowly improving, but her doctors have discussed that there will have been neurons in her brain that were permanently damaged as a result of the illness, and her brain needed to 'rewire' itself to allow her memory to recover and her facial recognition to still function.

**a.** State the type of brain injury that Tonya is experiencing. 1 mark

**b.** Given her specific challenges, which cortical lobe is likely to have experienced damage? 1 mark

**c.** Explain how her psychological challenges may interact with **one** possible social impact for Tonya. 2 marks

**d.** Identify and outline **one** process of neural plasticity that has occurred in Tonya's brain to help her recover function. 2 marks

**e.** While she was in hospital, a man suffering from the same illness was in the next room. His symptoms were different, and doctors identified that there was swelling in his left visual cortex specifically.

**i.** Identify an appropriate neuroimaging technique doctors could have used to determine this. 1 mark

**ii.** Outline **one** likely symptom for this man. 1 mark

**Question 10** (10 marks)

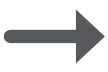
Sarah Scott experienced a stroke during her English class at the age of 18. She has worked hard over succeeding years to recover lost functions, live and work independently. Immediately following her stroke, Sarah found it very challenging to say certain words but could easily write them down. Her speech was forced, with lots of pauses between words.

With lots of speech therapy, rehabilitation and time, Sarah's speech is now almost fully recovered.

**a.** Explain the difference between symptoms of Wernicke's aphasia and Broca's aphasia and use this to determine which type of aphasia Sarah initially experienced. 3 marks

**b.** Which primary cortex is responsible for Sarah being able to write down the words she could not speak? 1 mark

**c.** Sarah and her mother have filmed interviews with Sarah to show her gradual recovery from her stroke over the years since her stroke. Identify and outline the role of the primary cortex that would be involved in Sarah understanding the questions her mother asks. 2 marks



**d.** Why might it be easier for Sarah to recover her speech compared to many survivors of stroke? 2 marks

**e.** How would Sarah's prefrontal cortex have been involved in her successfully persisting in speech therapy? 2 marks

**Question 11** (4 marks)

Machine learning is increasingly being used in medical research to support the diagnosis and management of epilepsy.

**a.** Explain how machine learning can be used to assist in predicting the occurrence of epileptic seizures. 3 marks

**b.** Describe **one** type of data that might be used in the process of machine learning. 1 mark

**Question 12** (10 marks)

John is a former professional AFL player who played in an era when players subjected to 'hard hits' were expected to get back on the field and play straight away. He played for many years professionally, as well as recreationally for his local team, and was known for always getting back up from a collision and going in hard for the next contest.

Recently, John has been noticing some biological, psychological and social changes that are negatively affecting his life and his ability to care for his wife and children. Given his sporting history, his doctors are understandably worried about a fatal neurological disease.

**a.** Name and describe the neurological disease that John, his family and the doctors are concerned about. 2 marks

**b.** Outline why John's football career is a risk factor for developing this neurodegenerative condition. 1 mark

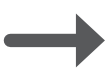
**c.** What does it mean that this disease is considered 'neurodegenerative'? 1 mark

**d.** Suggest **one** biological change, **one** psychological change and **one** social change that John may be experiencing. 3 marks

Biological:

Psychological:

Social:



**e.** Outline **one** physical change that may be a biomarker for this neurological disease. 1 mark

**f.** Describe why doctors might only give John a 'possible' diagnosis at this stage. 2 marks

# Key Science Skills: Part 1

This section covers the following Key Science Skills:

- develop aims and questions, formulate hypotheses and make predictions
- plan and conduct investigations
- comply with safety and ethical guidelines.

Many scenarios included in this section do not require any specific key knowledge from Areas of Study in Units 1 or 2, but they provide an opportunity to apply your knowledge of Key Science Skills to unfamiliar scenarios.

## Multiple-choice questions

### Question 1

In an experiment, a variable that is manipulated to affect the dependent variable is a(n)

**A.** independent variable.

**B.** extraneous variable.

**C.** controlled variable.

**D.** confounding variable.

*Use the following information to answer Questions 2–4.*

Dr Thompson is an educational psychologist. He proposes that if students listen to classical music while studying, they will learn better and improve their retention of the material being studied. He proposes that this would also, therefore, improve exam results.

### Question 2

In terms of the steps involved in psychological research, Dr Thompson has

**A.** formulated a hypothesis.

**B.** drawn a conclusion.

**C.** designed an experiment.

**D.** interpreted data.

### Question 3

For the experiment, Dr Thompson decides to have one group of participants listen to classical music for three hours while studying for a maths exam. He has another group of participants study for the same period of time without any music. In this experiment, the independent variable is _____ and the dependent variable is _____.

**A.** the maths exam score, the amount of time spent studying

**B.** the maths exam score, listening to classical music

**C.** the amount of time spent studying, the maths exam score

**D.** listening to classical music, the maths exam score

### Question 4

In Dr Thompson's experiment, the group studying in silence is best described as the

**A.** experimental group.

**B.** independent group.

**C.** control group.

**D.** research group.

*Use the following information to answer Questions 5–7.*

In an experiment, researchers put two groups of children into different learning environments: one group has their classes in a classroom with lots of natural light, and the other has their classes in an indoor classroom that has no windows and sterile fluorescent lighting. The two classrooms are otherwise identical with chairs, desks and learning resources. The students are asked to rate their learning engagement at the beginning of the experiment and after one week of classes.

### Question 5

What is the independent variable (IV) and dependent variable (DV) in this experiment?

| | IV | DV |
|---|---|---|
| **A.** | Type of classroom (natural light versus fluorescent) | Students' learning engagement |
| **B.** | Students' learning engagement | Type of classroom (natural light versus fluorescent) |
| **C.** | Age of students | Students' learning engagement |
| **D.** | Time of day | Type of classroom (natural light versus fluorescent) |

### Question 6

Which of the following is an extraneous variable that has been clearly controlled in this experiment?

**A.** The age of the children

**B.** The set-up and arrangement of the classrooms

**C.** The lighting conditions in which the classes are held

**D.** The teaching style in each classroom

### Question 7

What type of experimental design is being used in this study?

**A.** Between-subjects design as students are only measured on one variable

**B.** Within-subjects design as students are measured for the DV multiple times

**C.** Between-subjects design as students are only exposed to one condition of the independent variable

**D.** Mixed design as students are exposed to only one experimental condition, but measured pre- and post-experiment

### Question 8

Which of the following correctly describes a correlational study?

**A.** It examines the relationship between two variables without manipulating either of them.

**B.** It involves participants being exposed to multiple experimental conditions.

**C.** It compares participants placed into two distinct groups to measure differences.

**D.** It simulates a real-world scenario to study behaviour in a controlled environment.

### Question 9

Which of the following correctly describes a case study?

**A.** It involves testing each participant in multiple experimental conditions and measuring their responses.

**B.** It compares two groups of participants with different characteristics to measure differences.

**C.** It involves an in-depth examination of a single individual or a small group to explore a specific phenomenon.

**D.** It involves observing behaviour in a natural environment without manipulation of variables.

### Question 10

Which of the following best describes random sampling?

**A.** Every member of the population of research interest has an equal chance of being selected.

**B.** The population of research interest is divided into subgroups, and random samples are taken from each subgroup.

**C.** Participants are selected on the basis of specific characteristics relevant to the study.

**D.** Participants are chosen on the basis of convenience and accessibility.

### Question 11

What is the primary purpose of stratified sampling?

**A.** To select participants based on their availability or convenience

**B.** To randomly select participants without considering any subgroups

**C.** To ensure that specific subgroups are proportionally represented in the sample

**D.** To gather data only from individuals who volunteer to participate

*Use the following information to answer Questions 12 and 13.*

A researcher is studying the opinions of university students about a new campus policy. To ensure that students from different faculties (e.g. Arts, Science, Business) are all included, the researcher selects a sample of 40 students by dividing the student body into these faculties and then selecting students from each group, making sure to select more students from faculties that have more students.

### Question 12

What type of sampling technique is being used?

**A.** Random sampling, as students are being selected randomly from each group

**B.** Stratified sampling, as students are being selected seemingly in proportion to the size of each strata

**C.** Convenience sampling, as only students from one university are being sampled

**D.** Random-stratified sampling, as features of both random and stratified sampling are present

### Question 13

How could the researchers increase the representativeness of their sample in the scenario described above?

**A.** By selecting participants from only the largest faculty to ensure a greater sample size

**B.** By utilising the same technique to draw a sample of 100 students instead of 40

**C.** By using only students who volunteer to participate in the study

**D.** By choosing only participants who study subjects from more than one faculty so that they have a broader understanding of campus life

### Question 14

In an informed consent form, which of the following does not have to be included?

**A.** A clear description of any deception that will be used

**B.** An identification of the participant's rights

**C.** An identification of any potential risks that may be associated with participation

**D.** A description of the role that the participant will have in the study

### Question 15

A researcher conducts a study and makes sure that the participants in the study are debriefed. When would debriefing have occurred?

**A.** Before the study began

**B.** During the study

**C.** After the study had finished

**D.** When the participants were signing the informed-consent form outlining the roles, rights and risks of the study

*Use the following information to answer Questions 16–20.*

A research psychologist's latest field of research involves an investigation of the mere-exposure effect. The mere-exposure effect is the finding that increased exposure to something usually makes you like it more. She wishes to investigate this in primary-school children, and is specifically interested in determining if primary-school children who have increased contact with their school principal will have a more positive attitude towards the principal.

To investigate this, she approaches two primary schools close to her place of work: a coeducational school with 200 students and a female principal (School 1) and an all-girls school with 200 students and a female principal (School 2). Because School 1 also has boys, she decides to use this school as the group with increased exposure.

She asks the principal of School 1 to increase her exposure to all students by walking around outside each recess and lunchtime. These conditions continue for five weeks. For School 2, she asks the principal to decrease her exposure to students by not being present outside during recess and lunchtime. These conditions continue for a whole term. She then measures how well liked the principal is by asking each student to rate, using a smiley face and frowny face scale such as the one below, how it felt to be around the principal.

She adds up the total amount of happy faces chosen by students in School 1 and School 2.

She finds that the total amount of happy faces for School 1 is 180, and the total amount of happy faces for School 2 is 135.

### Question 16

What is the population in this research?

**A.** 400 primary-school children

**B.** 200 students from a coeducational school and 200 students from an all-girls school

**C.** School principals

**D.** Primary-school children

### Question 17

What is the best description of the sampling and allocation procedures used in this research?

**A.** The researcher used random sampling and random allocation.

**B.** The researcher did not use random sampling or random allocation.

**C.** The researcher used stratified sampling but did not randomly allocate participants.

**D.** The researcher used random-stratified sampling and random allocation.

### Question 18

In this research, the _____ is the level of exposure to the principal as measured by whether the principal walked around at recess and lunchtime or purposely stayed inside during these times.

**A.** Independent variable

**B.** Extraneous variable

**C.** Controlled variable

**D.** Dependent variable

### Question 19

The best description of the data-collection device used to measure the dependent variable is that it is

**A.** an interview.

**B.** a questionnaire.

**C.** an observation.

**D.** a rating scale.

### Question 20

Which of the following is not a potential confounding variable in this research?

**A.** The fact that one school is coeducational and one is not

**B.** The fact that there are different principals at each school

**C.** The fact that one condition lasts for five weeks and one lasts for one term

**D.** That students are asked to rate the likeability of the principal

### Question 21

Which of the following is not an ethical responsibility the psychologist must follow?

**A.** Following the experiment, she would need to debrief all of the students to make sure they understood the purpose of the experiment and answer any questions.

**B.** She would need to make sure that she has designed the experiment in a way that provides benefits to the students involved in the study, and that it is a meaningful question to be studied.

**C.** She must keep the names and responses of the students private and not share these with the teachers without permission.

**D.** She must make sure that all the students read through and understand the full nature and purpose of the experiment in advance and only proceed if each student has signed their agreement to take part.

## Short-answer questions

### Question 1 (4 marks)

A psychologist conducts an experiment to test the effect of different types of parenting styles (authoritative versus authoritarian) on children's social development. Two groups of children, aged six to eight, are observed over a six-month period. One group is raised with authoritative parenting, characterised by warmth and clear expectations, while the other is raised with authoritarian parenting, characterised by strict rules and little warmth. The children's social behaviours, such as cooperation and communication with peers, are assessed at the end of the six months.

**a.** Identify the independent variable (IV) and the dependent variable (DV) in the experiment. 2 marks

IV: _____

DV: _____

**b.** Explain why the psychologist controlled the age of the children in this experiment. 2 marks

### Question 2 (3 marks)

Ming is an IT services manager at her company, which means that she runs the IT network and makes sure that everything runs smoothly. When the COVID-19 pandemic struck in 2020, her workload escalated as the IT infrastructure needed to be updated to enable everyone to work from home. Ming did not feel very supported during this time because her company did not hire any additional IT employees.

When she asked the company to hire more people, the company compulsorily signed her up for a workplace time and motion survey where Ming was going to be required to respond to a series of questionnaires and be observed at work. The results of the study would be used by the company to track her productivity to see if she was working hard enough, and by the researchers as data on workplace stress.

**a.** For the time and motion survey, identify the scientific investigation methodology used. 1 mark

**b.** Outline how **one** ethical guideline appears not to have been followed as part of this study. 2 marks

## Question 3 (11 marks)

Goro and Ella conducted a study to see how the presence of a supportive friend affected the rate of learning for VCE students. They collected 30 participants with no previous experience of juggling, making sure to have an even number of male and female participants and equal proportions of Year 11 and Year 12 students. They randomly allocated participants into two groups and gave each group a 10-minute lesson on how to juggle three balls with both hands.

The first group was asked to invite a friend to join them in the experiment, who would cheer them on as they tried to learn.

The second group completed the same 10-minute lesson, but alone without anyone cheering them on.

At the end of each lesson, students were observed to see how many successful juggles they could perform.

| | **Mean number of successful juggles** |
|---|---|
| **With a supportive friend** | 13 |
| **Alone** | 9 |

**a.** Identify the independent variable (IV) and the dependent variable (DV) in the experiment. 2 marks

IV:

DV:

**b.** Outline how Goro and Ella could have used random allocation in this study. 2 marks

**c.** Identify **one** feature of the sample that suggests it may be stratified. 1 mark

**d.** Identify the population for this study. 1 mark

**e.** This study is an example of a controlled experiment.

**i.** Identify **one** characteristic of a controlled experiment, using an example from the scenario. 1 mark

**ii.** Name the experimental design used in the scenario. 1 mark

**f.** Explain why Goro and Ella decided to only select participants who had not previously learned to juggle. 3 marks

**Question 4** (5 marks)

Jacinta and Ginny are VCE students who wish to study the effect of concussion on cognitive performance. However, they know it would be unethical to try to conduct a controlled experiment, and they don't have the ability to use any specialised equipment to conduct a case study. Their teacher suggests they will need to use secondary data.

**a.** What type of investigation methodology is appropriate for Jacinta and Ginny's study? Justify your choice. 2 marks

**b.** With reference to **one** ethical concept, explain why it would be unethical to conduct a controlled experiment into the effects of concussion. 3 marks

**Question 5** (3 marks)

Yvonne is an 80-year-old woman who has been diagnosed with Alzheimer's disease, a type of dementia that results in loss of memory and reduces the ability of individuals to process and remember information. Her daughter, Alison, and Yvonne's doctor discuss whether Yvonne should take part in a trial of a new Alzheimer's medication. Outline how the doctor could ensure informed consent is met if Yvonne takes part.

**Question 6** (3 marks)

Fiona is a Year 11 student conducting research for her Psychology class. She tests Piaget's theory of cognitive development by testing her six-year-old and 12-year-old sisters on a logical reasoning task. Suggest a reasonable hypothesis for Fiona.

**Question 7** (2 marks)

Haoyu is a former boxer who is having trouble with his memory. A memory researcher wants to conduct some tests to look at the structure of his brain using fMRI technology and discuss Haoyu's memory struggles in depth.

**a.** Name the type of investigation methodology being used. 1 mark

**b.** Outline **one** characteristic of this methodology. 1 mark

# Unit 2 | Area of Study 1 How are people influenced to behave in particular ways?

## Multiple-choice questions

### Question 1

How is person perception best described?

**A.** Evaluation of ourselves and others

**B.** Ability to detect the presence of other people

**C.** Mental processes used to make judgements about others

**D.** First impressions based on physical cues that are highly changeable

### Question 2

What is the role of person perception in social interactions?

**A.** It eliminates cognitive biases.

**B.** It helps us to form judgements about others based on their appearance.

**C.** It always leads to accurate decision-making by focusing on internal factors.

**D.** It is solely focused on understanding environmental factors in how people behave.

### Question 3

Which of the following correctly describes a personal attribution and a situational attribution for why a student may be late to class?

| | Personal | Situational |
|---|---|---|
| **A.** | Train running late | Alarm clock broke |
| **B.** | Talking to a teacher | Train running late |
| **C.** | Does not care about class | Talking to a teacher |
| **D.** | Unable to walk quickly | Does not care about class |

### Question 4

The tendency for an individual to overestimate situational attributions in our own poor behaviour, but overestimate personal attributions in another person's poor behaviour, is known as

**A.** actor-observer bias.

**B.** fundamental attribution error.

**C.** confirmation bias.

**D.** self-serving bias.

### Question 5

Which of the following is an example of a stereotype?

**A.** Believing all individuals from a certain culture are inherently hardworking

**B.** Analysing someone's actions to understand their behaviour

**C.** Understanding that everyone in a social group has unique attributes

**D.** Making an automatic judgement about someone based on their emotional state

### Question 6

How do attitudes influence interpersonal interactions?

**A.** Attitudes can help affect future behaviours towards other people.

**B.** Attitudes always influence how we interact with others.

**C.** Attitudes are based on logic, not feelings.

**D.** Attitudes are not important in forming connections with other people.

### Question 7

The tricomponent model of attitude suggests that attitudes have three components. These three components are suggested to be

**A.** affective, cognitive and behavioural.

**B.** attitude, behavioural and cognitive.

**C.** affective, belief and consideration.

**D.** affective, behavioural and consideration.

### Question 8

Kris has been writing letters to the government detailing why she believes refugees from other countries should be allowed to enter Australia. Kris's letter-writing is an example of which aspect of the tricomponent theory of attitude?

**A.** Attitude

**B.** Behaviour

**C.** Affective

**D.** Cognitive

*Use the following information to answer Questions 9 and 10.*

Miyu develops a positive attitude towards Australian Rules football (AFL) after attending a game. She feels excited when the team that shares her favourite colours (black and yellow) wins a game, starts attending matches regularly with friends and buys some yellow and black merchandise, and thinks that AFL is complex game with lots of challenging rules that are difficult to understand.

### Question 9

Which of the following correctly identifies affective, behavioural and cognitive components of Miyu's attitude?

| | Affective | Behavioural | Cognitive |
|---|---|---|---|
| **A.** | Excitement when team wins | Attends matches with friends | Buys team merchandise |
| **B.** | Finds it difficult to understand | Feels excited when team wins | Believes that AFL has challenging rules |
| **C.** | Excitement when team wins | Buys team merchandise | Thinks AFL is a complex game |
| **D.** | Spending time with friends | Buys team merchandise | Believes AFL has challenging rules |

### Question 10

Which of the following correctly explains the congruence of Miyu's attitude?

**A.** Miyu's belief that AFL is a challenging game to understand is incongruent with her excitement and her attending matches and may cause cognitive dissonance.

**B.** Miyu's attitude is fully congruent with all components matching.

**C.** Miyu's excitement is incongruent with her attending matches and buying merchandise and may cause cognitive dissonance.

**D.** Miyu's excitement and attending of matches is incongruent with AFL's complex nature, but her excitement will overrule the complexity, so no cognitive dissonance is possible.

### Question 11

Which of the following is an example of confirmation bias?

**A.** Ignoring evidence that contradicts your political beliefs

**B.** Blaming a failed project on your team's lack of effort

**C.** Assuming most people share your opinion on a controversial issue

**D.** Believing that you are the best candidate for a job based on positive feedback

### Question 12

Which cognitive bias involves attributing our successes to internal factors and our failures to external ones?

**A.** Confirmation bias

**B.** Self-serving bias

**C.** False consensus bias

**D.** Anchoring bias

### Question 13

How does cognitive dissonance relate to confirmation bias?

**A.** Cognitive dissonance leads people to actively seek opposing viewpoints to resolve discomfort.

**B.** Confirmation bias helps people reduce cognitive dissonance by only seeking supporting information.

**C.** Cognitive dissonance has no effect on decision-making.

**D.** Both biases cause individuals to ignore information completely.

### Question 14

Which of the following best illustrates the use of the anchoring heuristic in decision-making?

**A.** Overestimating the likelihood of an event based on recent media coverage

**B.** Making a purchase decision based on the first price you see, even if it's higher than expected

**C.** Assuming someone's behaviour reflects their personality rather than the situation

**D.** Deciding to buy a product because of the positive emotions it evokes

### Question 15

Lena meets a new colleague, Mike, who wears glasses and speaks in a calm, intellectual manner. Assuming he's shy and studious, Lena invites him to her book group, thinking that he might have some interesting insights. She is surprised when he declares that he doesn't read very much. Which heuristic is Lena using here?

**A.** Anchoring heuristic

**B.** Availability heuristic

**C.** Representative heuristic

**D.** Affect heuristic

### Question 16

Mikhail is shopping for a new phone. He remembers reading a lot of positive reviews about a specific brand, so he decides to buy it without comparing other options. Later, he realises the phone he chose doesn't have a particular feature he needs, but he chose it because of the strong brand reputation.

Which of the following correctly identifies the heuristic Mikhail probably used, and outlines how it affected his decision to buy the phone?

**A.** Availability heuristic. Positive influence by relying on easy-to-recall information, but negative influence due to ignoring other options

**B.** Anchoring heuristic. Positive influence from initial reviews, but negative influence by focusing too much on the first information

**C.** Representative heuristic. Positive influence by trusting the brand's reputation, but negative influence from assuming it fits his needs

**D.** Affect heuristic. Positive influence from positive feelings about the brand, but negative influence by overlooking other important factors

### Question 17

In psychology, prejudice can be described as

**A.** a set of beliefs about people from a particular group based on their membership to that group.

**B.** negative behaviour directed towards a particular group of people.

**C.** a negative attitude towards a particular group of people.

**D.** shortcuts used to make judgements about a person's characteristics.

### Question 18

Which of the following is an example of direct discrimination?

**A.** A company refuses to hire someone because of their ethnicity.

**B.** A person feels uncomfortable being around someone with a different sexual orientation.

**C.** A student avoids interacting with peers who have mental health issues.

**D.** A company requires all employees to be able to drive a manual car, regardless of their role.

### Question 19

Which of the following is an example of indirect discrimination?

**A.** Janice speaks very slowly to someone who she thinks looks 'foreign'.

**B.** Mr Solomon actively ignores a student's raised hand because of past negative interjections.

**C.** Dr Watkins provides inferior treatment to a female patient.

**D.** The air force requires all pilots to be at least 170 cm tall.

### Question 20

Which of the following correctly describes the difference between social stigma and self-stigma?

**A.** Social stigma involves an individual's personal shame, whereas self-stigma is the general disapproval of a group.

**B.** Social stigma only affects mental health, whereas self-stigma affects physical health.

**C.** Social stigma is a form of direct discrimination, whereas self-stigma is a form of indirect discrimination.

**D.** Social stigma refers to negative societal attitudes towards a group, whereas self-stigma occurs when an individual internalises those societal attitudes.

### Question 21

Which of the following best describes social norms?

**A.** Unwritten rules about appropriate behaviour that are shared by members of a group

**B.** A formal code of conduct enforced by law

**C.** The personal beliefs held by an individual

**D.** The specific actions required in a formalised social contract

### Question 22

How might group shift affect group behaviour?

**A.** Individuals in groups will tend to conform to the majority view.

**B.** The leader's influence over the group will gradually reduce over time.

**C.** Group members' opinions will become more extreme over time.

**D.** Group members make riskier decisions than they would individually.

### Question 23

How do social norms differ from cultural norms?

**A.** Social norms are enforced by laws, whereas cultural norms are not.

**B.** Social norms are broader and cover all societal expectations, whereas cultural norms are specific to a particular group.

**C.** Social norms only apply to individuals within the family unit, whereas cultural norms apply to everyone.

**D.** There is no difference between social and cultural norms – they are the same.

### Question 24

Which of the following is an example of a cultural norm?

**A.** An Australian law that sets out what times businesses may open

**B.** The Ethiopian custom of using flatbread (injera) to pick up food rather than using utensils

**C.** Captains of a football club setting behavioural expectations for all players

**D.** Fernydale High School setting a dress code for students with different expectations for religious and non-religious students

### Question 25

What are three factors that affect obedience?

**A.** The number of people in the group, the legitimacy of the authority figure, and the emotional state of the participant

**B.** The proximity of the authority figure, the type of environment, and the social status of the participant

**C.** The proximity of the authority figure, the legitimacy of the authority figure, and group pressure

**D.** The legitimacy of the authority figure, the frequency of punishment, and group pressure

### Question 26

With regard to obedience, proximity refers to

**A.** only the physical closeness of the authority figure to the person receiving orders.

**B.** only the closeness of the social relationship between the authority figure and the person receiving orders.

**C.** only the closeness of the social relationships between the person receiving orders and their peers who are also receiving orders.

**D.** both the closeness of the social relationship and the physical proximity of the authority figure to the person receiving orders.

### Question 27

In Milgram's study on obedience, participants believed they were administering an electric shock to another person if they were given a wrong answer on a quiz. Which of the following statements about this study is the most correct?

**A.** The people chosen to be participants in the study had an equal chance of being made the shock administrator or the person completing the quiz.

**B.** Random allocation decided if someone would be the shock administrator or the person taking the quiz.

**C.** The experiment was set up in such a way that the participant being studied was always the shock administrator.

**D.** The experiment was set up in such a way that the participant being studied was always the person sitting the quiz.

### Question 28

Which of the following correctly describes the results of Milgram's seminal experiment on obedience?

**A.** 65% of the learners obeyed instructions to shock the teachers.

**B.** Teachers delivered 65% of the total number of shocks to the learners.

**C.** 65% of the teachers continued delivering shocks to the top level of 450 volts.

**D.** Teachers obeyed instructions 65% of the time when they were instructed to harm another person.

### Question 29

In his experiments on conformity, Solomon Asch found that

**A.** a unanimous group of four persons provided the highest likelihood of conformity.

**B.** a divided group of ten persons provided the least likelihood of conformity.

**C.** the larger the group, the higher the conformity, regardless of unanimity.

**D.** a unanimous group, regardless of size, provided the highest level of conformity.

### Question 30

Which of the following accurately differentiates between obedience and conformity?

**A.** Obedience involves following group norms, whereas conformity involves following authority figures.

**B.** Obedience is compliance with an authority figure, whereas conformity is adjusting behaviour to match group norms.

**C.** Obedience is voluntary, whereas conformity is forced.

**D.** Obedience involves following laws you disagree with, whereas conformity involves changing thinking to agree with laws.

### Question 31

Which of the following is an example of conformity?

**A.** A person acts aggressively when given a direct order by a supervisor.

**B.** A person agrees with their group's answer on a group quiz, despite knowing it is incorrect.

**C.** A person follows all the instructions given by a teacher without question.

**D.** A person makes their own decision about whether they like a music artist or not.

### Question 32

What is social comparison in the context of media influence?

**A.** The process of evaluating one's self-worth by comparing to others' appearances or achievements

**B.** The act of comparing media messages to see which is the most accurate

**C.** The practice of evaluating personal traits based on societal standards

**D.** The use of media to compare different political views

### Question 33

Which of the following is an example of a positive impact of digital media on information access?

**A.** It allows individuals to selectively access information that reinforces their own beliefs.

**B.** It enables access to diverse sources of information, enhancing knowledge.

**C.** It increases the likelihood of individuals finding social connections to others who hold similar values.

**D.** It limits individuals' understanding of global issues.

### Question 34

What is one way that social media negatively influences social connection?

**A.** It allows individuals to connect with like-minded individuals in the digital space.

**B.** It fosters strong in-person bonds between individuals.

**C.** It eliminates the need for in-person social networks or connections.

**D.** It encourages superficial relationships that lack emotional depth.

### Question 35

What is the main benefit of developing independence in group decision-making?

**A.** It enhances consensus decision-making that everyone agrees with.

**B.** It allows for a diversity of opinions, which can enhance problem-solving.

**C.** It helps maintain group cohesion by provoking disagreements.

**D.** It discourages individuals from expressing different viewpoints.

### Question 36

What is the relationship between anti-conformity and self-confidence?

**A.** Anti-conformity often undermines self-confidence because it leads to conflict with others.

**B.** Anti-conformity has no effect on self-confidence.

**C.** Anti-conformity strengthens self-confidence as individuals assert their beliefs and values.

**D.** Anti-conformity reduces self-confidence by making individuals second-guess their decisions when they see the group behaving differently.

### Question 37

Which of the following characteristics is most likely to foster anti-conformity in individuals?

**A.** A focus on maintaining group harmony

**B.** A high level of need for social validation from peers

**C.** A strong belief in individualism over collectivism

**D.** A situation where an individual has social support to engage in anti-conformist behaviour

## Short-answer questions

### Question 1 (5 marks)

Sarah has noticed that her colleague, Mark, often takes long breaks throughout the day. Without asking him about it, she assumes it is because he's lazy and not committed to his work.

**a.** Identify the type of attribution Sarah has made about Mark's behaviour. 1 mark

**b.** What type of attributional error may Sarah be making? Suggest a possible reason for Mark's breaks that Sarah may not have considered. 2 marks

**c.** Explain how Sarah's assumption may influence her decision-making while chairing a meeting at which Mark is a participant. 2 marks

### Question 2 (3 marks)

Explain how social norms contribute to shaping the behaviour of individuals. Provide an example to illustrate your answer.

**Question 3** (6 marks)

Husna is a passionate environmentalist who believes in reducing her carbon footprint. However, she recently purchased a large petrol-powered SUV for her family of six (her partner Jo and their four children). She tells herself the SUV is necessary for safety and family trips, despite knowing it's not environmentally friendly.

**a.** With reference to the tricomponent model of attitudes, outline Husna's attitude as displayed in the scenario. 3 marks

**b.** Why might Husna experience cognitive dissonance? 1 mark

**c.** Describe how Husna could use **one** cognitive bias to minimise the dissonance experienced. 2 marks

**Question 4** (3 marks)

Maria is attending a team meeting when she notices her colleague, Linh, sitting with her arms crossed and frowning. Maria assumes that Linh is upset with her presentation. She doesn't check in with her directly but makes a decision to change the way she is presenting.

**a.** Identify the heuristic Maria is using to make this assumption. 1 mark

**b.** Explain **one** positive and **one** negative outcome Maria may experience using this heuristic in decision-making. 2 marks

**Question 5** (6 marks)

Jane has recently applied for a job at Stonybrook Fitness Corporation. She has a physical disability that requires her to use crutches to walk. When she arrives for the interview, the hiring manager seems to overlook her qualifications and expresses concerns about her ability to perform the role based on her physical disability. The company often conducts 'walk and talk' meetings in the belief that physical activity helps with decision-making, and the hiring manager says, 'If you are going to fit in with our team, you'd need to take part'. Jane feels demoralised; she starts questioning her professional abilities and is not surprised when she receives a rejection letter the next week.

**a.** Name the social phenomenon affecting the hiring decision. 1 mark

**b.** There are two distinct forms that this social phenomenon can take. Classify an example from the scenario which shows each type on display. 3 marks

**c.** Explain what type of stigma is being experienced by Jane in this scenario. 2 marks

**Question 6** (3 marks)

Using an example, explain the relationship between prejudice and discrimination.

**Question 7** (5 marks)

Dr Michel is a social psychologist, with much of his work centred on the study of prejudice. All Stars College has experienced a number of challenges with prejudice and discrimination being displayed between students of different cultural backgrounds, and asks Dr Michel to help them design a program to combat this issue.

Dr Michel selects a group of students who have previously been disciplined for prejudice and discrimination against students of a different cultural background. Half of these students are assigned to work with a similar-sized group of students from different cultural backgrounds to plan and coordinate a community event, including organising businesses to support the event, creating posters to advertise the event to townspeople, and running the event together. The other half of the students is allocated to a special art class involving students of many cultural backgrounds, where they will receive a lecture on the importance of equality and then will each produce their own individual artworks about the topic.

**a.** With reference to superordinate goals, explain why the 'community event' group may show a greater reduction in prejudice than the 'art class' group. 3 marks

**b.** Identify **one** factor reducing prejudice in the art class, and describe how this factor may reduce prejudice. 2 marks

**Question 8** (3 marks)

During a class with a substitute teacher, many students continue chatting and ignore the teacher's attempts to communicate their regular teacher's written instructions to start their assignments. The substitute teacher tries to regain control, but without much success. When the principal walks past and sees the chatty classroom, she enters and tells students to quiet down and start working. The students immediately sit up, quiet down and begin working on the assignment.

**a.** With reference to a relevant factor, explain why the students followed the instructions of the principal as opposed to those of the substitute teacher. 2 marks

**b.** Name the factor that explains why students are less likely to follow their regular teacher's written instructions than usual. 1 mark

**Question 9** (9 marks)

Stanley Milgram's study on obedience involved participants believing that they were inflicting an electric shock on someone, sometimes to the point where the shock was causing serious harm.

**a.** What was the aim of Milgram's first experiment? 1 mark

**b.** Describe **two** ways Milgram engaged in deception and, with reference to an appropriate ethical consideration, how he accounted for this. 4 marks

**c.** In some experiments, Milgram varied the distance between the learner (confederate) and the teacher (participant). Identify the relevant factor affecting obedience and explain how it would affect the results. 2 marks

**d.** What is **one** other way that social proximity could be varied? 1 mark

**e.** Identify **one** way that Milgram's authority figure (the experimenter, or person issuing the instructions) was made to appear more legitimate. 1 mark

**Question 10** (2 marks)

Following the commands of an authority figure or the laws of society is _____.

Whereas the tendency to adjust thoughts or behaviours to agree with others is _____.

**Question 11** (8 marks)

Jodie, Sam, Min-jae and Aluong are working on a group assignment for their History class. The topic of the assignment is the conflict in Korea in the 1950s. Min-jae gives his friends a bit of information because his great grandparents lived in Korea during the war and have told him some stories. Being friends, they quickly agree on an approach to the assignment and all start working on it. By the end of the assignment, the four students are even more convinced that they know who was to blame and who the 'good guys' and 'bad guys' in the war were.

**a.** Identify **one** factor influencing decision-making, and **one** factor influencing conformity that influence the team's approach. 2 marks

**b.** Explain how social norms within the group influence individual behaviour in the context of this project. 2 marks

**c.** Explain how the actions of each student in the group demonstrates conformity. 2 marks

**d.** Outline how **one** aspect of the scenario reflects the phenomena of 'groupshift'. 2 marks

**Question 12** (2 marks)

Maria is an employee in a factory, and her main task is to sort biscuits from a conveyor belt so that only whole, or 'good', biscuits end up being packaged for sale and broken ones are removed. Maria works under two different conditions. Sometimes she works alone alongside a small conveyor belt and sometimes she works in a group, with the group surrounding a larger conveyor belt. An organisational psychologist working with the company notes that when Maria works alone, she sorts 280 biscuits per minute, but when she works with a group she only sorts 210 biscuits per minute.

Identify and define the factor that is probably causing Maria's reduced efficiency when working in a group situation.

**Question 13** (2 marks)

Raine is normally a well-behaved adolescent. During a night-time concert she becomes involved in an incident in which a large group of people, including her and her friends, throw rubbish onto the stage and jeer and shout at the performers. Although she had initially refused to participate, after a while she became very active in this behaviour. The next day she cannot believe she behaved as she did.

In terms of factors affecting conformity and the ways in which a group may influence others, use psychological terminology to give a reason why Raine may have behaved in this way.

**Question 14** (2 marks)

Vedant is walking along a residential street, when he sees an elderly man sitting against a tree on the nature strip. Vedant rushes over to help him.

Explain how Vedant may be using a particular heuristic in making the decision to help the elderly man.

**Question 15** (4 marks)

Laura is a passionate conservationist. When a logging company was given a contract by the government to cut down a section of state forest that Laura knew to be very beautiful and home to many different native species, Laura had no hesitation in attending a protest action and preventing the work from going ahead, even though such action was against the law. Explain Laura's reasoning in terms of independence and anti-conformity.

**Question 16** (3 marks)

Prasit frequently watches social media influencers who promote unrealistic beauty standards.

**a.** Name the psychological effect caused by Prasit's comparison of himself to the influencers. 1 mark

**b.** Describe how this could negatively affect Prasit's mental wellbeing. 2 marks

**Question 17** (2 marks)

Lena is a young woman who recently moved to a new town, where she knows no one and often feels isolated. Struggling to make connections locally, she turned to social media, where she discovered an online community of supportive individuals who share her interests. She joined a private group where members shared experiences and offered advice.

Explain how social media is acting as a positive influence for Lena's wellbeing.

# Unit 2 | Area of Study 2 What influences a person's perception of the world?

## Multiple-choice questions

### Question 1

What best explains why you might not hear someone calling your name while deeply focused on reading while at the beach?

**A.** Divided attention

**B.** Sustained attention

**C.** Attentional focus

**D.** Selective attention

### Question 2

Which of the following would be most difficult to perform successfully due to limits in divided attention?

**A.** Typing while listening to instrumental music

**B.** Driving while talking on a hands-free phone

**C.** Watching a movie with closed captions

**D.** Stirring a pot of soup while talking to a friend

### Question 3

Which statement about sustained attention is most accurate?

**A.** It is only required when multitasking.

**B.** It allows us to engage in attentional switching – to shift quickly between tasks.

**C.** It is more likely when a task is interesting or engaging.

**D.** It only occurs in people with high levels of intelligence.

### Question 4

Which of the following is a prerequisite for top-down processing to occur?

**A.** Reflexive responses

**B.** Raw sensory input

**C.** Past experience and expectations

**D.** Unfamiliar information

### Question 5

Which of the following best describes bottom-up processing?

**A.** Using previous experiences to interpret what you see

**B.** Interpreting sensory information based only on incoming data

**C.** Ignoring details in favour of expectations

**D.** Applying personal meaning to familiar stimuli

### Question 6

The structure at the back of the eye that receives a visual image before its transmission to the brain is the

**A.** retina.

**B.** cornea.

**C.** iris.

**D.** pupil.

### Question 7

Cones can best be described as

**A.** feature-detector cells that specialise in determining shape and texture.

**B.** photoreceptor cells that are used for peripheral, low-acuity vision, and mostly detect blue light.

**C.** photoreceptor cells that are used for focused, high-acuity vision, and detect a wide range of colours.

**D.** photoreceptor cells that are used for focused, low-acuity vision, and detect mostly green light.

### Question 8

Which of the following correctly outlines the process of transduction for visual perception?

| | Sensation or perception | Description |
|---|---|---|
| **A.** | Sensation | Neural messages are sent from the retina to the primary visual cortex via the optic nerve. |
| **B.** | Perception | Rods and cones convert electromagnetic light into neural messages. |
| **C.** | Perception | Feature-detector cells help to identify lines, edges and movement that need to be focused on. |
| **D.** | Sensation | Rods and cones convert electromagnetic light into neural messages. |

### Question 9

Chris is playing ball with his dog, Harry. Harry stands 10 metres away while Chris lobs the ball in the air towards him. As Harry watches the ball closely with both eyes, his brain can use a biological depth cue to determine that the ball is getting closer, before he leaps to catch it. Given that dog's eyes have the same basic structure as humans, which of the following best describes the biological depth cue Harry has used here?

**A.** Harry has used the binocular depth cue of convergence, where his brain used the increased tension in muscles controlling the eye to determine that the ball is getting closer.

**B.** Harry has used the monocular depth cue of accommodation, where the lens of his eyes has flattened as the ball has moved closer to him.

**C.** Harry has used the pictorial cue of relative size, where the ball appears to get larger as it moves towards him.

**D.** Harry has used the monocular depth cue of retinal disparity, where his brain registers the image in each eye independently, and uses the difference in the images to work out where the ball is.

### Question 10

A depth cue that involves the ciliary muscles contracting or relaxing to focus on an object depending on its distance from the observer is known as

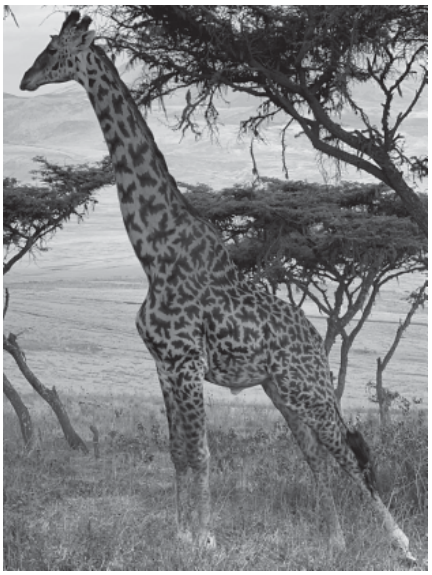
**A.** convergence.

**B.** retinal disparity.

**C.** accommodation.

**D.** motion parallax.

### Question 11



The way that we perceive the dark spots as standing out against the skin of the giraffe is an example of the Gestalt principle known as

**A.** closure.

**B.** figure–ground.

**C.** proximity.

**D.** similarity.

*Use the following image to answer Questions 12 and 13.*

### Question 12

In this image, relative size is apparent due to

**A.** the towers on the left casting a smaller retinal image and therefore being perceived as closer than the tower on the right, which casts a larger retinal image.

**B.** the towers on the left casting a smaller retinal image and therefore being perceived as further away than the tower on the right, which casts a larger retinal image.

**C.** the tower on the right casting a larger retinal image than the towers on the left because it is larger in reality.

**D.** the towers on the left appearing similarly sized to the tower on the right, even though they are actually taller.

### Question 13

How can height in the visual field be used to determine the position of the towers?

**A.** The leftmost tower is the furthest away because it is furthest from the horizon.

**B.** The rightmost tower is the closest to us because its base is visible.

**C.** The leftmost tower is furthest away because it is less detailed than the other towers.

**D.** As the towers get closer and closer to the horizon, we perceive them as further away.

## Question 14

Which of the following correctly describes why we perceive these classroom doors as being the same, despite the doors casting different images on the retina?

**A.** Brightness constancy allows us to see that the doors have a similar colour and therefore are the same despite the door on the left casting a darker retinal image.

**B.** Context allows us to see that the doors are in the same environment.

**C.** Interposition allows us to see that the doors are both in the foreground, blocking anything behind them that can be seen through the window.

**D.** Shape constancy allows us to see that the doors are both rectangular, despite the door on the right being seen at more of an angle.

*Use the following image to answer Questions 15 and 16.*

### Question 15

The above image of a plant is in black and white. What explains a person describing it as a 'green plant'?

**A.** Brightness constancy, as the plant leaves cast a darker image than the pot, so are a darker colour

**B.** Perceptual set, as our prior experience tells us that plants are likely to be green

**C.** Texture gradient, as we can see the detail on the leaves that allows us to determine it is a plant

**D.** Selection, as we choose which features of the image to focus on, allowing us to perceive it as green

### Question 16

Our ability to perceive the plant's colour correctly depends on our use of which type of processing, and which step of the visual perception pathway?

| | Processing | Visual perception pathway step |
|---|---|---|
| **A.** | Bottom up | Interpretation |
| **B.** | Top down | Reception |
| **C.** | Bottom up | Reception |
| **D.** | Top down | Interpretation |

### Question 17

Which of the following is an example of a social factor influencing visual perception?

**A.** Motivation

**B.** Emotion

**C.** Cultural background

**D.** Context

### Question 18

A researcher shows participants an ambiguous image that could be interpreted as either a rabbit or a duck. They find that participants from some countries who were shown the image after seeing 'Easter-related' images were more likely to say they saw a rabbit than participants from other countries. This could be an example of

**A.** cultural factors.

**B.** perceptual set – motivation.

**C.** bottom-up processing.

**D.** perceptual set – emotion.

### Question 19

The same researcher conducts a similar experiment on a new set of participants, all from the same country. She shows participants the ambiguous image that could be interpreted either as a rabbit or a duck. They find that participants who were shown the image after seeing 'Easter-related' images were more likely to say they saw a rabbit than participants who were shown the image after a mixed set of animal images. This could be an example of

**A.** perceptual set – context.

**B.** binocular depth cues.

**C.** bottom-up processing.

**D.** perceptual set – motivation.

### Question 20

What is a key reason for how visual illusions demonstrate the fallibility of our visual perception?

**A.** They trick the brain by bypassing the retina.

**B.** They reveal limitations in how our brain interprets sensory input.

**C.** They cause physical damage to the eye when viewed for too long.

**D.** They prevent visual information from reaching the occipital lobe.

### Question 21

Which of the following is a probable symptom of apperceptive visual agnosia?

**A.** Being unable to name an object but able to copy its shape

**B.** Being unable to form a coherent visual perception of objects

**C.** Having difficulty recalling names of objects from memory

**D.** Misidentifying objects due to colour blindness

### Question 22

The transmission step of gustatory perception can be described as

**A.** neural messages being sent to the brain via the optic nerve.

**B.** neural messages being sent via the facial nerve to the gustatory cortex.

**C.** tastants being converted to neural signals via taste receptor cells.

**D.** chemical messages being sent to the gustatory cortex from taste receptor cells.

### Question 23

What is one key characteristic of a supertaster?

**A.** A preference for very spicy food due to taste insensitivity

**B.** A reduced number of taste buds compared to the average person

**C.** A heightened sensitivity to bitter flavours

**D.** A complete inability to taste umami flavours

### Question 24

Miraculin, a substance found in miracle fruit, causes which unusual gustatory experience?

**A.** Sour foods such as lemons taste sweet.

**B.** Sweet foods taste bitter.

**C.** Bitter foods lose all flavour.

**D.** All food tastes spicy for several hours.

### Question 25

Which of the following options correctly categorises factors influencing gustatory perception?

| | Biological | Psychological | Social |
|---|---|---|---|
| **A.** | Age | Culture | Perceptual set |
| **B.** | Genetics | Perceptual set | Culture |
| **C.** | Perceptual set | Prior experience | Age |
| **D.** | Number of taste buds | Genetics | Culture |

### Question 26

Which of the following best explains why past experiences can lead to errors in flavour judgement?

**A.** The brain uses gustatory illusions to trick the tongue.

**B.** Prior exposure creates a perceptual set, influencing flavour expectations.

**C.** All flavour judgements are based solely on visual input.

**D.** The tongue develops unconscious muscle memory.

### Question 27

Seventeen-year-old Poppy and her mother Nishka both enjoy spicy foods, whereas her six-year-old brother Liam and her father Patrick cannot stand spice.

Which of the following explanations could plausibly explain these preferences?

**I.** Poppy is less sensitive to spice than Liam because she has more taste buds.

**II.** Patrick may be more sensitive to spice than Nishka because he did not grow up eating spicy foods.

**III.** Liam is more sensitive to spice than Poppy because he is younger.

**A.** I only

**B.** I and III only

**C.** II only

**D.** II and III only

### Question 28

Jaya picks up a big juicy red strawberry from the punnet and bites into it. She is surprised when it is very sour, as her friend told her these were good strawberries. What type of factor influencing gustatory perception is relevant here?

**A.** Biological factors, as her taste buds have been manipulated

**B.** Psychological factors, as perceptual set led her to believe the strawberry was sweet

**C.** Social factors, as her emotion is surprise that her friend thought they were good

**D.** Cultural factors, as she has been raised to believe that deep red strawberries are ripe

### Question 29

What is synaesthesia?

**A.** A visual illusion where lines appear to move

**B.** A condition where one sense automatically triggers another

**C.** A complete loss of taste and smell

**D.** An inability to distinguish between different sensations

### Question 30

Which of the following best reflects grapheme–colour synaesthesia?

**A.** A person tastes mint when they see the number 7.

**B.** A person hears 'Stephanie' and sees a royal blue colour.

**C.** A person sees the number 4 as green, even if printed in black.

**D.** A person gets anxious when hearing loud music.

### Question 31

In spatial neglect, a person who had a stroke in the right hemisphere may

**A.** lose colour vision in both eyes.

**B.** be unable to pay attention to objects on their left side.

**C.** prefer to speak to people on their left.

**D.** mishear words spoken from the right.

### Question 32

Which of the following best explains why synaesthesia is considered a perceptual distortion and not a disorder?

**A.** It usually is present from early in an individual's life.

**B.** It involves hallucinations that are not caused by any real stimulus but are not harmful.

**C.** It results from faulty receptors in the eye or tongue.

**D.** It causes consistent, non-damaging sensory experiences not triggered in most people.

## Short-answer questions

### Question 1 (4 marks)

Jackson is sitting in his Unit 2 Psychology exam on a Thursday afternoon. He remains focused on the paper throughout the exam, only looking up to check the clock briefly, and is surprised to find that an hour has gone past already.

**a.** Name the type of attention Jackson is using during the exam. 1 mark

**b.** Explain how this type of attention supports his performance during the exam. 2 marks

**c.** Jackson's friend, Amir, also completed the Psychology exam and is usually a strong student but had a Mathematics exam and a Biology exam on Thursday morning. Amir complained to Jackson that he found it difficult to stay focused during the Psychology paper. Outline **one** reason that Amir may have found it more challenging to focus. 1 mark

**Question 2** (4 marks)

Ali is playing indoor soccer with his three-year-old son in between cooking dinner, listening out for timers, the stove boiling over, and washing up as he goes.

Discuss how using divided attention may affect Ali's successful or unsuccessful completion of his tasks.

**Question 3** (6 marks)

Leila is a veterinary student attending a guest lecture with a wildlife vet who is explaining her exploits in Africa working with lions. On one slide, Leila can see a blurry image of another animal in the corner of a photo. Because the lecture topic is about lions, she immediately assumes the image is of a lion, even though it's actually a leopard.

**a.** Identify the processing method that led Leila to misinterpret the image. 1 mark

**b.** Explain why this example demonstrates that type of processing. 2 marks

**c.** Identify the other type of processing and describe how this could have helped Leila make a more accurate judgement. 3 marks

**Question 4** (6 marks)

**a.** Outline how the steps of visual perception occur to perceive the medieval wall shown above as a face. 5 marks

Reception:

Transduction:

Transmission:

Organisation:

Interpretation:

**b.** Classify the five steps as part of 'sensation' or 'perception'. 1 mark

**Question 5** (8 marks)

Yelena and Irene are travelling in a safari truck, driving through the Serengeti National Park in Tanzania. Yelena looks out the window and sees the landscape moving by rapidly. She's amazed at how similar all the trees look. Irene whips her camera out and takes the photo below.

**a.** On the image, annotate how the pictorial cues of relative size, texture gradient and height in the visual field can be used to determine the depth and distance of the trees in the image. 3 marks

**b.** Explain how Yelena could use motion parallax to determine which trees were closer or further away. 2 marks

**c.** Outline why a child wearing an eye patch for a 'lazy eye' would be able to use motion parallax as Yelena did. 1 mark

**d.** Outline how figure–ground could be applied to this image to describe a focal point in the image. 2 marks

**Question 6** (5 marks)

The following photo shows a pier on a sunny day. We can see the shadow of the pier over some of the water to the left, and a number of light poles dotted along the bridge, as well as a tanker ship moving across the water in the background.

**a.** Outline how linear perspective is evident in the photograph. 1 mark

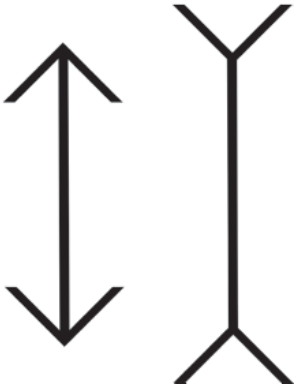
**b.** With reference to the photograph, explain how we can use brightness constancy and size constancy. 2 marks

**c.** Use perceptual set to explain how a person who nearly drowned at the beach last summer might perceive the water. 2 marks

**Question 7** (2 marks)

In this image of the Finnish National Parliament, explain how we can use the Gestalt principles of similarity and proximity to group certain parts of the image together.

**Question 8** (7 marks)



**a.** Name the illusion shown above. 1 mark

**b.** Explain how this illusion works with reference to the 'carpentered world' hypothesis. 3 marks

**c.** Another illusion is the Ames room illusion. Explain how this illusion works with reference to visual constancies. 3 marks

**Question 9** (4 marks)

Weng-Yi is able to look at the photo above and describe the features that she sees in the image but struggles to name or explain what the object or entity is.

**a.** Name the type of visual agnosia that Weng-Yi is experiencing. 1 mark

**b.** With reference to the image above, explain the problem with Weng-Yi's visual processing. 3 marks

**Question 10** (6 marks)

Tariq dislikes brussels sprouts, claiming they taste unbearably bitter. A test shows he has a higher-than-average number of taste buds.

**a.** What type of factor is influencing Tariq's taste perception here? 1 mark

**b.** Outline the process of reception for Tariq. 2 marks

**c.** Explain why Tariq may perceive brussels sprouts' flavour more intensely than many people. 3 marks

**Question 11** (4 marks)

Mai tries a new dessert at a restaurant. It's bright green and looks like green apple, so she expects it to be sour. When she first tastes it, she thinks that it is sour, but then realises it is actually sweet.

**a.** Identify the psychological factor that influenced Mai's initial expectation. 1 mark

**b.** Explain how this factor altered her gustatory perception. 3 marks

**Question 12** (3 marks)

Explain how miraculin alters gustatory perception.

**Question 13** (6 marks)

Thomasina orders two cups of coffee at her local coffee shop: one for herself and one for her friend, Alex. The shop knows her preferences well, so they put three sugars in for her without her asking, and one sugar in the coffee meant for Alex.

Thomasina sits down and sips one of the coffees without thinking and does not taste anything unusual. When Alex sits down and takes a sip of their own drink, they are surprised it is so sweet. The friends work out that Thomasina had sipped from Alex's coffee by mistake, but still thought it tasted sweet.

Alex describes that they knew it was wrong as the coffee tasted 'scarlet'. They like having a 'dark red' coffee most days, but only occasionally like having a 'scarlet' coffee.

**a.** Explain how judgement of flavours could have allowed Thomasina to misperceive the sweetness of the coffee. 2 marks

**b.** What perceptual distortion may Alex experience that would lead to them describing coffee as 'dark red' or 'scarlet'? 1 mark

**c.** Outline how this perceptual distortion can develop and explain what is occurring for Alex. 3 marks

**Question 14** (3 marks)

A patient with spatial neglect is asked to draw a picture of a flower.

Using your knowledge of spatial neglect, draw a likely way they would depict the flower, and explain why.

# Key Science Skills: Part **2**

This section covers the following Key Science Skills:

- develop aims and questions, formulate hypotheses and make predictions
- plan and conduct investigations
- comply with safety and ethical guidelines
- generate, collate and record data
- analyse and evaluate data and investigation methods
- construct evidence-based arguments and draw conclusions
- analyse, evaluate and communicate scientific ideas.

Many scenarios included in this section do not require any specific key knowledge from Areas of Study in Units 1 or 2, but they provide an opportunity to apply your knowledge of Key Science Skills to unfamiliar scenarios.

## Multiple-choice questions

### Question 1

An investigator interested in collecting data about someone's personality first asks them to describe their perfect day. Then she gets the person to rate from one to ten how much they enjoy being around other people. The first task the researcher asks the person to do will provide _____ data and the second task will provide _____ data.

**A.** Quantitative, qualitative

**B.** Qualitative, quantitative

**C.** Qualitative, secondary

**D.** Objective, quantitative

*Use the following information to answer Questions 2 and 3.*

A large firm asks a researcher to carry out research with its employees. The firm wishes to find out if employees are suitable for a promotion and wants the researcher to explore topics with the employees by asking them open-ended questions verbally.

### Question 2

This type of data collection is known as

**A.** a self-report.

**B.** an interview.

**C.** a questionnaire.

**D.** a self-report and interview.

### Question 3

A possible problem with the type of data collection used here is that

**A.** it is highly restrictive in terms of participant responses.

**B.** it will only ever give quantitative data.

**C.** it violates confidentiality.

**D.** it may be hard to summarise and analyse all of the data.

### Question 4

Which of the following best describes data that is being collected in a sleep diary (where an individual records the timing of their sleep, how long they think they slept for, any disturbance to their sleep and how rested they feel after each sleep period)?

**A.** Qualitative data such as sleep duration and movement during sleep

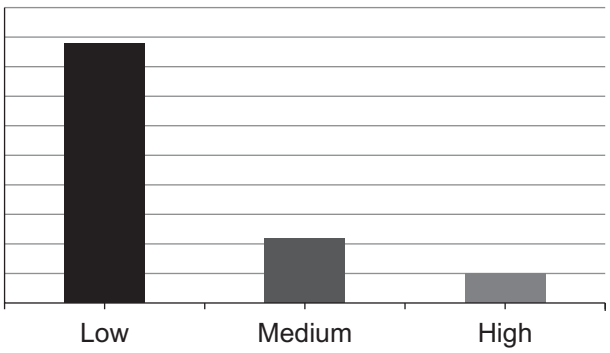
**B.** Objective data such as quantity of sleep, and how rested they feel

**C.** Subjective data such as perceived sleep quality and number of awakenings recalled

**D.** Quantitative data such as number of awakenings recalled, and the quality of sleep

*Use the following information to answer Questions 5–9.*

Kristy is a 14-year-old in Year 9. Kristy's year group of 80 students were asked to complete a questionnaire using an instrument designed to test for depression, where a high score (12–15) represented high levels of depression such that it could be diagnosed, a medium score (6–11) represented some depressed mood, and a low score (0–5) represented a 'normal' level of mood for adolescents. The individual results for students were collated and grouped into 'Low', 'Medium', and 'High' scores so that the school's teachers could see how many students were in each category.



### Question 5

Which of the following would be appropriate labels for the *x*- and *y*-axes?

| | ***x*-axis** | ***y*-axis** |
|---|---|---|
| **A.** | Number of students | Depression Levels |
| **B.** | High/medium/low groups | Mean depression score |
| **C.** | Mean level of depression | Number of students |
| **D.** | Depression levels | Number of students |

### Question 6

If Kristy's score on the questionnaire was a 7, how could her score be described?

**A.** Higher than the median score

**B.** Approximately the same as the median score

**C.** Lower than the median score

**D.** An outlier

### Question 7

How would the researchers have calculated a mean score?

**A.** By adding up all the scores and dividing by 15

**B.** By selecting ten scores at random and finding the average of these scores

**C.** By adding up all the scores and dividing by 80

**D.** By finding the score that appeared most frequently

### Question 8

What type of graph has been used to represent this data, and how else might it be represented?

| | **Type of graph used** | **Could also be represented by** |
|---|---|---|
| **A.** | Bar/column graph | *x*–*y* scatterplot to enable outlier identification |
| **B.** | Histogram | Bar/column graph as the range is numerical data |
| **C.** | Histogram | Bar/column graph as these are discrete groups |
| **D.** | Bar/column graph | *x*–*y* scatterplot to enable calculation of a mean |

### Question 9

Which of the following correctly categorises the type of data collected in this study?

| | Types of data collected | | |
|---|---|---|---|
| | **Subjective/objective** | **Qualitative/quantitative** | **Primary/secondary** |
| **A.** | Subjective | Quantitative | Secondary |
| **B.** | Subjective | Qualitative | Primary |
| **C.** | Subjective | Quantitative | Primary |
| **D.** | Objective | Quantitative | Secondary |

*Use the following information to answer Questions 10 and 11.*

A VCE Psychology teacher has two Year 11 classes at the same school. However, she notices that in Class A, there are no students studying VCE Mathematics, whereas in Class B, more than half the students study VCE Mathematics. She realises this is because Class A runs at the same time as the VCE Mathematics classes. After her mid-year Psychology exam, she plots her students' scores on questions related to data analysis on a single frequency-distribution graph.

The teacher decides to calculate the mean and standard deviation for each class:

| | **Mean data analysis score** | **Standard deviation** |
|---|---|---|
| **Class A** | 6.4 | 1.3 |
| **Class B** | 8.5 | 1.8 |

### Question 10

Which of the following would be a reasonable conclusion for the teacher to draw?

**A.** That having higher maths ability leads to better data analysis skills

**B.** That being in Psychology Class B leads to students studying VCE Mathematics

**C.** That having more students studying maths is directly correlated to increased data analysis skills

**D.** That studying maths and data analysis skills have no correlation

### Question 11

What do the standard deviations show in this experiment?

**A.** The range of scores for each class is up to 1.8 away from the mean.

**B.** There is greater variation from the mean in Class B than in Class A.

**C.** Class A has a larger range of scores than Class B.

**D.** This is a meaningless study because there is too much overlap in data between the groups.

*Use the following information to answer Questions 12 and 13.*

An adolescent emotional intelligence test has been found to produce similar results among different groups of adolescents from Victoria, and that individuals who score higher on this test also are observed by teachers to be more responsive to their friends' moods.

### Question 12

The test is likely to have

**A.** high repeatability due to the similarity of scores between different groups.

**B.** high reproducibility to Australian adolescents due to cultural bias.

**C.** high reproducibility due to the similarity of scores between different groups.

**D.** low repeatability as teachers' observations were required to make sure the measurements were accurate.

### Question 13

Which of the following is a correct evaluation of the test?

**A.** The test appears to have low external validity as some individuals scored higher than others.

**B.** The test appears to have high internal validity due to individuals scoring high on the tests also being more responsive to their friends' moods.

**C.** The test must have low internal validity due to only being tested on Victorian adolescents.

**D.** The test must have high external validity as teachers' observations make clear the measurements of emotional intelligence were accurate.

*Use the following information to answer Questions 14 and 15.*

Ms Alexis gets her Year 12 class to complete a stress scale in February and September of Year 12. There are seven Likert scales from 1 to 5 to complete, and a person's total stress score is calculated by the sum of the items scored. The maximum score is 35, and the minimum score is 5.

### Question 14

Which of the following results would represent an outlier and show a high level of uncertainty?

**A.** A student who realised she added up her February score incorrectly and updated it with Ms Alexis

**B.** A student who recorded a decrease in their stress levels because a sibling was severely ill in February but had recovered by September

**C.** A student with an increase of 17 in their stress levels over the year

**D.** A student who scored 35 in February, and 6 in September, who may not have been taking the test seriously

## Question 15

Which of the following correctly describes a possible error in this study?

**A.** Some students with a similar level of stress choosing to rate their experience differently on the scale would be a random error.

**B.** Ms Alexis getting the class to complete the stress scale immediately before their final SAC of the year would be a personal error.

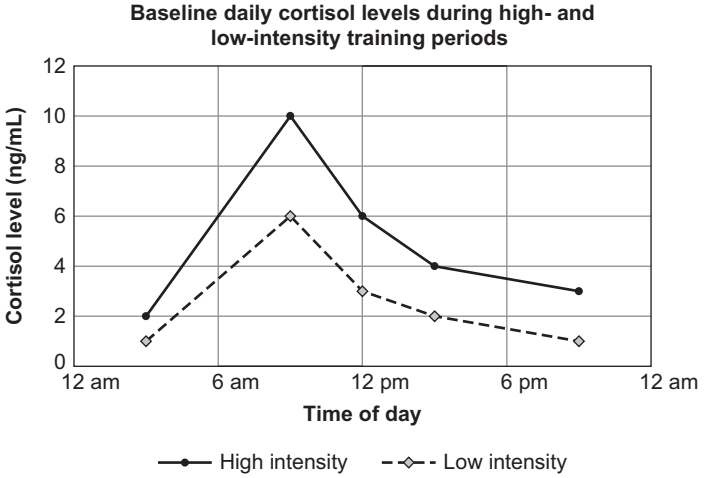
**C.** A student not following the instructions and therefore recording a lower level of stress than their true stress would be a systematic error.

**D.** Ms Alexis forgetting to tell the students a specific step in the calculation that could result in their stress score rising or falling would be a systematic error.

*Use the following information to answer Questions 16–21.*

Dr Henderson is interested in studying how long-term levels of the stress hormone cortisol is correlated with the experience of chronic stress. She contacts the Australian Institute of Sport (AIS), who recommend ten high performance gymnasts with AIS scholarships to participate in her study. Dr Henderson takes blood samples to record their cortisol levels using a testing apparatus calibrated against a known cortisol sample, and a score on a self-reported Perceived Stress Scale during a high work-intensity phase (before and during an international competition), and in a low work-intensity phase (recovery period after competition).

The results of her cortisol measures are shown in the following graph. The Perceived Stress Scale scores show that participants reported feeling more stressed during the high-intensity period than the low-intensity period.




## Question 16

Why is this study best described as a correlational study?

**A.** There is no active manipulation of an independent variable so no cause-and-effect relationship can be established.

**B.** More than one dependent variable has been measured.

**C.** Participants have been tested under two different conditions by a range of methods to investigate the issue.

**D.** A small group of participants has been tested in a real-world situation.

### Question 17

Dr Henderson's graph shows a 'mean' of the ten gymnasts' cortisol levels, but when she looks at her raw data, she can see that the cortisol levels at 6 am vary from as low as 2 ng/mL to as high as 14 ng/mL. What does this suggest about her data?

**A.** The measured cortisol levels show high accuracy and high precision.

**B.** The measured cortisol levels show low accuracy and high precision.

**C.** The measured cortisol levels show high accuracy and low precision.

**D.** The measured cortisol levels show low accuracy and low precision.

### Question 18

Which of the following would be an appropriate statement about the validity of Dr Henderson's experiment?

**A.** The results show high internal validity because the measurements are accurate and the true value of cortisol levels has been measured.

**B.** The results show high external validity because the results can be clearly applied to a broader population of all individuals.

**C.** The results show low internal validity that are repeatable and reproducible.

**D.** The results show low external validity because the results do not measure a correlation between stress and cortisol levels.

### Question 19

What would be an appropriate conclusion for Dr Henderson to make?

**A.** Elite gymnasts experience high levels of stress.

**B.** Increased levels of cortisol and perceived stress levels are positively correlated.

**C.** High levels of cortisol produce high levels of stress.

**D.** Individuals placed in stressful situations need high levels of cortisol to perform.

### Question 20

Which of the following correctly describes the ability to generalise these results to a population of VCE students?

**A.** Limited ability to generalise due to the within-subjects design of elite gymnasts

**B.** Can generalise due to elite gymnasts being similar to high-performing VCE students

**C.** Can generalise due to repeatability of results among a group of participants tested multiple times suggesting high external validity

**D.** Limited ability to generalise due to a small biased sample not being representative of a population of VCE students

### Question 21

Which of the following is an appropriate ethical consideration for this study?

**A.** It clearly demonstrates the ethical guideline of informed consent as all participants have given their permission to be involved in the study.

**B.** It shows the ethical concept of non-maleficence as the study is unlikely to be harmful to participants.

**C.** Justice is shown through the careful reporting of the results of both conditions.

**D.** Beneficence is evident as the study has been conducted in a way that is maximally beneficial to participants.

*Use the following information to answer Questions 22–24.*

Iurgi is a university student studying to become a pilot. He knows that the rules for pilots are that they must have a blood alcohol concentration (BAC) of 0 while flying (as compared to the legal BAC of less than 0.05 for fully licensed car drivers). This is due to evidence that being affected by alcohol impairs perception, decision-making and reaction times, among other effects.

He decides to conduct an experiment to determine the impact of flying with a BAC above zero.

He recruits three of his fellow student pilots to take part in his study. One friend stays sober, one friend consumes alcohol until he records a BAC of 0.05, and the third friend consumes alcohol until he records a BAC of 0.10.

Then, using a computer game that allows players to use a joystick to control a computer-generated aircraft flying through a pre-planned route, he tests his friends' physical reflexes and decision-making. He observes them as they 'fly' the route, and records how many errors they make.

| | **BAC 0.00** | **BAC 0.05** | **BAC 0.10** |
|---|---|---|---|
| **Number of physical and decision-making errors** | 4 | 13 | 22 |

### Question 22

How would this research best be described?

**A.** Fieldwork, as Iurgi has tested real student pilots in a realistic setting of flying

**B.** Simulation, as Iurgi has used a computer game that simulates flying instead of a real aircraft

**C.** Correlational study, as Iurgi can see if the variables co-vary, but is not testing cause and effect

**D.** Product, as Iurgi is using a game that has been produced for people to play

### Question 23

Why did Iurgi need to plan his study using the computer game instead of with a real aircraft?

**A.** Iurgi is unlikely to have been able to obtain informed consent from his friends and flight school to test this with a real aircraft.

**B.** Using a computer game helps to meet non-maleficence due to the danger of using a real aircraft while intoxicated.

**C.** As flying while intoxicated is illegal, Iurgi would have been unable to report his results with integrity.

**D.** There would have been a significant limitation due to an inability to replicate the same flight in the same way under the same conditions.

### Question 24

Iurgi speaks to his chief instructor about his findings. The instructor makes some appropriate suggestions that Iurgi could implement to increase the robustness of his findings.

What might these suggestions be?

| | Suggestion 1 | Suggestion 2 | Suggestion 3 |
|---|---|---|---|
| **A.** | Control all extraneous and potential confounding variables. | Change to a between-subjects design. | Use a more diverse sample than simply student pilots. |
| **B.** | Collect a larger sample of participants. | Test under different conditions (e.g. rain, larger aircraft). | Change to a within-subjects design. |
| **C.** | Ask for voluntary participation from all participants. | Use an objective measure to reduce bias in rating of errors. | Use a stratified sample to make sure all levels of pilot experience are included. |
| **D.** | Use a random sample. | Use more experienced pilots. | First complete a correlational study to see if there is a link between BAC and plane accidents. |

## Short-answer questions

### Question 1 (6 marks)

Avrom wants to investigate how light levels affect colour perception, so he gathers a group of ten friends and shows them a number of different-coloured objects in low-light and high-light conditions and has them describe the colours that they see.

**a.** Use your knowledge of photoreceptors to predict Avrom's likely hypothesis. 3 marks

**b.** Identify the type of data that Avrom is collecting and explain **two** limitations with using this data in this experiment. 3 marks

### Question 2 (6 marks)

Dr Mesley is a sleep researcher interested in investigating the effect of different environmental conditions on sleep in adolescents. She recruits 20 volunteers from a local high school and allocates each of them to sleep in a sleep laboratory for two non-consecutive nights. During the first night, participants sleep in a room that is kept at a constant 26°C. During the second night, the room is kept at a constant 32°C.

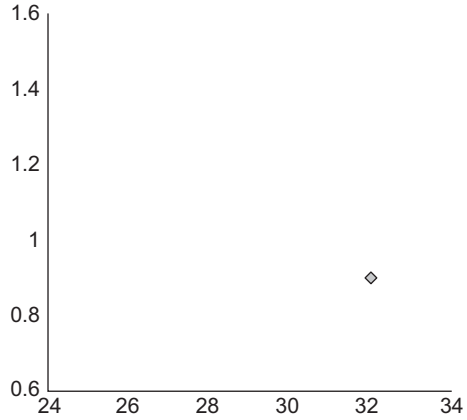
For her dependent variable, Dr Mesley measures the amount of time spent in deep sleep using an EEG, a device that electrically records brain waves (which can indicate deep sleep).

Her findings are shown in the following table.

| Temperature (°C) | Mean amount of time spent in deep sleep (h) |
|---|---|
| 26 | 1.4 |
| 32 | 0.9 |

**a.** Outline how the data collected is both objective and quantitative. 2 marks

**b.** A partially completed graph of Dr Mesley's results is shown. Graph the missing data point and provide appropriate axes labels. 3 marks




**c.** Give **one** reason that an *x*–*y* scatterplot is the correct graph type for Dr Mesley to use. 1 mark

### Question 3 (10 marks)

In a study designed to test whether loud music interferes with problem-solving ability, 50 randomly sampled adults were randomly assigned to two separate groups. One group was asked to complete five problem-solving tasks while listening to loud music. The second group was asked to complete the same five problem-solving tasks under quiet conditions. The quiet-conditions group was found to be more successful at completing the problem-solving task. Based on the mean difference between each group, the researchers concluded that cognitive ability is adversely affected when loud music is being played.

**a.** What was the dependent variable in this research? 1 mark

**b.** Write a hypothesis for this experiment. 3 marks

**c.** What experimental design was used? 1 mark

**d.** Describe the difference between random sampling and random allocation of the participants. 2 marks

**e.** Outline **one** potential extraneous variable and discuss how it would affect the study's validity. 3 marks

**Question 4** (17 marks)

Dr Chin was interested in studying the impact of conformity on the social behaviour of sharing food among children. She recruits 30 participants who are seven to eight years old through local parent groups, along with recruiting a rotating group of her friend's children to act as confederates. The parents are asked to bring their child at a specific time to the experiment.

The children are aware that they are going to take part in an experiment, but they are told that before the experiment, they and the 'other participants' are free to have lunch. Each child is allocated into one of two groups. Half of the children are invited to the front of the line and get to pick their food first. The other half of the children are placed at the back of the line and watch as the child confederates (actors) take only small portions of food, even though there is more than enough for everyone.

The researchers observe how much food each participant child takes. The researchers then ask everyone to sit, explain the deception, and ask the children to explain why they took the amount of food that they took. Afterwards, the researchers invite everyone to have more food and the participant is free to make sure they are full.

Dr Chin's results were as follows:

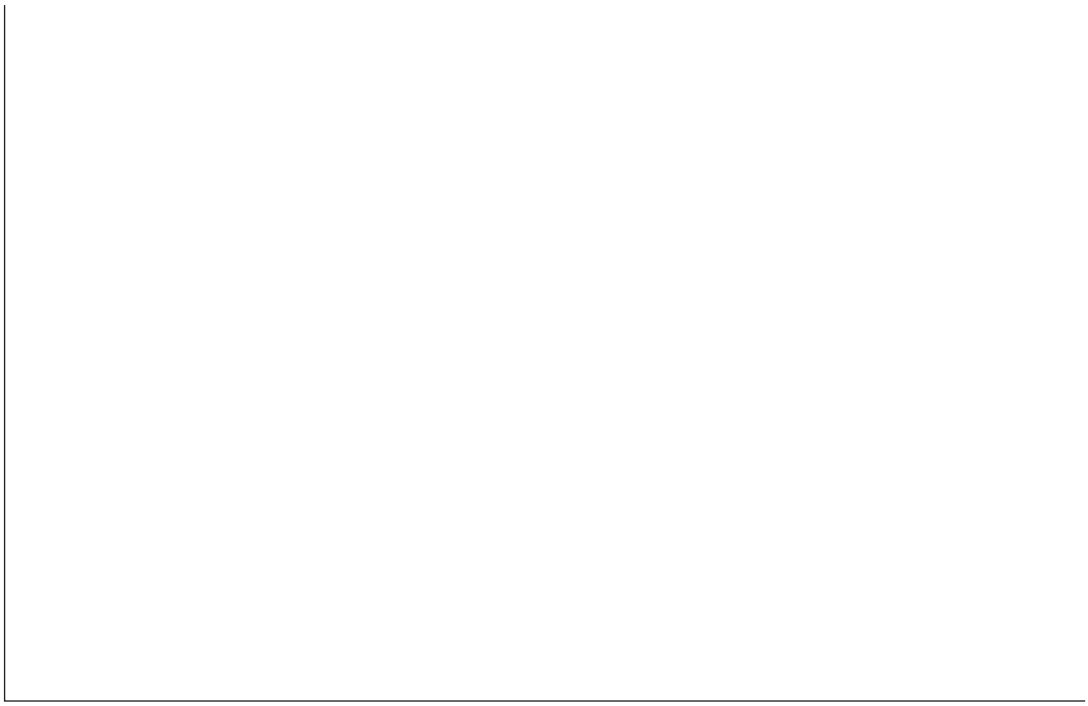
| | Mean amount of food taken in first serving (grams) | Standard deviation |
|---|---|---|
| **Child first (no pressure)** | 234 | 180 |
| **Child last (conformity pressure)** | 168 | 62 |

**a.** Identify the independent variable in this experiment. 1 mark

**b.** Suggest a likely hypothesis for this experiment. 3 marks

**c.** What is the purpose of the 'child first' group in this experiment? 1 mark

**d.** Use the following axes to draw a graph of Dr Chin's mean data. 3 marks



**e.** Categorise the **two** ways researchers collected information by different types of data. 2 marks

**f.** State a likely conclusion from this study. 1 mark

**g.** What type of error would be present if the scales used to measure the food were wrongly calibrated? Explain how this could affect the measurements with reference to accuracy. 3 marks

**h.** With reference to standard deviations, contrast the variability of each group. 2 marks

**i.** Suggest how Dr Chin could extend this research in future. 1 mark

**Question 5** (11 marks)

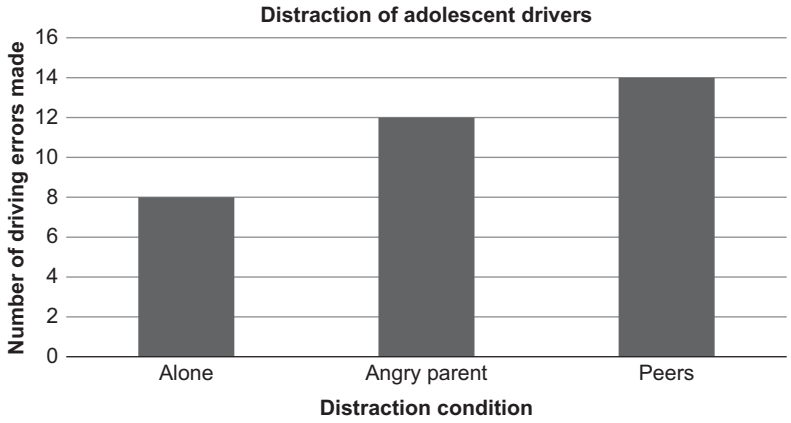
Dr Cameron and Dr Wu wanted to investigate the impact of distractive passengers on adolescent drivers. They designed a study and recruited 50 adolescent drivers from two local schools (on either L plates or P plates).

First, the adolescents drove alone in the simulator, and the number of driving errors was measured.

Then, the adolescents were split into two groups:

- One group of 25 adolescents completed the simulation again, this time with one of their parents angrily criticising their driving from a script provided by the researchers.
- The other 25 adolescents completed the simulation again with two same-aged peers loudly engaging them in conversation.

Researchers produced the following graph of their results.




**a.** What measure of central tendency is likely to have been calculated as part of the data analysis? 1 mark

**b.** What is the purpose of the 'alone' condition? 1 mark

**c.** This study is an example of a controlled experiment.

**i.** Classify the type of experimental research design used in this experiment. 1 mark

**ii.** Outline **one** advantage of this type of design. 2 marks

**d.** Calculate the percentage change in driving errors from the 'alone' condition to the 'angry parent' condition. 1 mark

**e.** With reference to the results, summarise the findings of Dr Cameron and Dr Wu's experiment and provide a conclusion. 2 marks

**f.** How could the reproducibility of this study be determined? 2 marks

**g.** What would be **one** implication of their conclusion? 1 mark

# Sample responses

## Unit 1 | Area of Study 1 What influences psychological development?

### Multiple-choice questions

#### Question 1

*Answer:* ***C***

**Explanatory notes**

A is incorrect as environmental factors also influence development.

B is incorrect as environmental and hereditary factors interact, rather than acting independently.

C is correct as these factors interact with each other.

D is incorrect as hereditary factors do play a role.

#### Question 2

*Answer:* ***B***

**Explanatory notes**

A and C are incorrect as these represent hereditary/genetic factors influencing development.

B is correct as family support is environmental in nature as a social support.

D is incorrect because although development of muscles through working out is an environmental factor, it does not reflect 'psychological' development.

#### Question 3

*Answer:* ***D***

**Explanatory notes**

A is incorrect as cerebral palsy is most commonly considered to be caused by environmental factors such as birth trauma. (Although it will have a biological impact, this does not mean it is hereditary.)

B is incorrect as learning resilience is an environmental factor.

C is incorrect as all of these examples reflect environmental factors.

D is correct as cerebral palsy is an environmental factor caused by factors such as birth trauma, physical training is an environmental factor and resilience is also an environmental factor due to it being 'learned'.

## Question 4

*Answer:* ***A***

**Explanatory notes**

A is correct as cerebral palsy affects biological functioning, support from her coach is social in nature, and increasing her resilience (while learned) affects her psychological functioning.

B is incorrect as resilience levels are psychological and winning medals does not neatly fit into this categorisation (but would best be described as social).

C is incorrect as the birth trauma described here is physical trauma and would best be categorised as biological.

D is incorrect as resilience levels are psychological and receiving medals is social.

### TIP

» **Make sure you note the order of items in the table because they may be presented in a different order from what you would assume. For example, if you selected 'D' on the basis of biological, psychological and social usually being presented in that order, your response would be incorrect.**

## Question 5

*Answer:* ***B***

**Explanatory notes**

A is incorrect as 'mental' is synonymous with 'cognitive'.

B is correct as these are four separate aspects of development.

C is incorrect as 'individual difference' is a generic term that could be applied to any aspect of development.

D is incorrect as 'continuous' is a pattern of development occurring as a gradual process that can occur for any aspect of development.

## Question 6

*Answer:* ***C***

**Explanatory notes**

A is incorrect as sense of humour describes a hereditary biological factor or a social factor.

B is incorrect as social support from a friend is a social factor.

C is correct as emotions are a psychological factor.

D is incorrect as physical characteristics such as jaw shape are genetic, and thus a biological factor.

## Question 7

*Answer:* ***C***

**Explanatory notes**

A and D are incorrect as hormonal imbalance and neuroplasticity are biological influences.

B is incorrect as an individual's coping mechanisms are a psychological influence.

C is correct as relationships are considered a social influence.

## Question 8

*Answer:* ***D***

**Explanatory notes**

A, B and C are incorrect because these are the three main attachment styles identified by Ainsworth.

D is correct because disorganised attachment was not identified by Ainsworth in her Strange Situation, although it is considered an attachment style by later researchers.

## Question 9

*Answer:* ***D***

**Explanatory notes**

A is incorrect as this describes secure attachment

B is incorrect as insecure-avoidant infants do not generally seek their caregiver's attention on return.

C is incorrect as this best describes an insecure-resistant infant.

D is correct because insecure-avoidant infants are likely to show limited distress when their caregiver leaves and not seek their attention (or may ignore the attention) on the caregiver's return due to not seeing their caregiver as a source of comfort.

## Question 10

*Answer:* ***A***

**Explanatory notes**

A is correct as this is a behaviour readily shown by a child with secure attachment.

B is incorrect as this describes insecure attachment.

C is incorrect as this describes insecure-avoidant attachment

D is incorrect as this describes insecure-resistant attachment.

## Question 11

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this describes egocentrism, a preoperational characteristic that is overcome in concrete operational stage.

B is correct as this describes reversibility.

C is incorrect as use of language and symbols is an accomplishment of preoperational stage.

D is incorrect as abstract reasoning is an accomplishment in the formal operational stage.

## Question 12

*Answer:* ***B***

**Explanatory notes**

A is incorrect as finding a 'good' hiding place is not necessary for behaviour to be goal-directed.

B is correct as this demonstrates Emma is still egocentric.

C is incorrect as conservation is not shown in this scenario.

D is incorrect as abstract reasoning is not shown in this scenario.

## Question 13

*Answer:* ***A***

**Explanatory notes**

A is correct as the knowledge that her grandmother can still see her even if she can't see her grandmother involves overcoming the characteristic of egocentrism.

B is incorrect as logical reasoning is not clearly shown in this scenario.

C is incorrect as conservation is not shown in this scenario.

D is incorrect as abstract reasoning is not shown in this scenario and Olivia is no longer egocentric.

## Question 14

*Answer:* ***C***

**Explanatory notes**

A is incorrect as this is likely to occur in the identity versus role confusion stage.

B is incorrect as this is likely to occur in the intimacy versus isolation stage.

C is correct as this caregiver responsiveness can lead to trust or mistrust developing.

D is incorrect as independence can be gained in the industry versus inferiority stage.

## Question 15

*Answer:* ***B***

**Explanatory notes**

B is correct as the identity versus role confusion stage occurs during the period of adolescence, when young people are developing a sense of personal identity, individual goals and values that are separate from others.

A, C, and D are incorrect as these are associated with other conflicts.

## Question 16

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this occurs during the intimacy versus isolation stage.

B is correct as the integrity versus despair stage occurs during late adulthood and describes a process of reflecting on one's life and being fulfilled with what has occurred, or regret about what you did not achieve.

C is incorrect as this occurs in the identity versus role confusion stage.

D is incorrect as this occurs during the industry versus inferiority stage.

## Question 17

*Answer:* ***A***

**Explanatory notes**

A is correct as sensitive periods refer to windows of time when an individual is more receptive or more likely to learn information quickly and efficiently based on their brain development.

B is incorrect as humans have sensitive periods after birth.

C is incorrect as although there are general ranges that apply to the human population, every individual's development is somewhat unique and does not occur in identical ways.

D is incorrect as sensitive periods can apply not just to language development, nor just to infants.

## Question 18

*Answer:* ***D***

**Explanatory notes**

A and B are incorrect as both are phrased as a critical period rather than a sensitive period (aside from also being functionally inaccurate).

C is incorrect as although emotional regulation is sensitive during adolescence, it is also (less complexly) developed at younger ages.

D is correct as this is a period of time when children are particularly suited to developing basic social skills.

## Question 19

*Answer:* ***B***

**Explanatory notes**

A is incorrect as there is no rule that sets the length of sensitive periods as shorter or longer than critical periods (and many critical periods are short).

B is correct as a skill cannot be learned outside of a 'critical period', whereas it can be learned outside of a 'sensitive period'.

C is incorrect as sensitive periods exist for other concepts in addition to emotional development.

D is incorrect as the terms have separate and distinct meanings for both humans and other organisms.

## Question 20

*Answer:* ***D***

**Explanatory notes**

A is incorrect as this refers to social development.

B is incorrect as this mainly refers to motor development.

C is incorrect as this refers to emotional development.

D is correct as thinking and problem-solving are cognitive skills.

## Question 21

*Answer:* ***B***

**Explanatory notes**

A is incorrect as there is no evidence that one set of factors is more important than the other.

B is correct as evidence suggests that these two factors both play an important part in human development.

C is incorrect as environment is a very important factor in human development.

D is incorrect. See the explanations for A and B.

## Question 22

*Answer:* ***B***

**Explanatory notes**

A is incorrect as talking to a coordinator represents an adaptive response to this situation.

B is correct as there is clearly a negative impact on the teenager's daily life if they are unable to attend an event they would like to be at due to anxiety.

C is incorrect as experiencing stress due to deadlines is a normal experience and there is no indication of a maladaptive response.

D is incorrect as there is no negative impact on the individual's daily life. Indeed, their choice seems appropriate for a holiday context and may facilitate further enjoyment.

## Question 23

*Answer:* ***A***

**Explanatory notes**

A is correct as statistical rarity does not directly account for cultural differences in behaviours that might affect frequency.

B is incorrect as this is simply a description of one aspect of statistical rarity.

C is incorrect as statistical rarity does not rely on social norms.

D is incorrect as although behaviour can be statistically analysed across cultures, because it does not account for cultural differences, comparisons between cultures may not be valid.

## Question 24

*Answer:* ***D***

**Explanatory notes**

A is incorrect as social norms focus on group expectations rather than an individual's experience.

B is incorrect as using social norms does not apply an objective standard to the measurement of typical versus atypical behaviour.

C is incorrect as social norms do not account for cultural influences that may contradict or alter social norms.

D is correct as it allows for behaviour to be judged against the 'norms' within a given social group.

## Question 25

*Answer:* ***C***

**Explanatory notes**

A is incorrect as this is an appropriate evaluation. It is a social norm to look for a lost pet.

B is incorrect as this is an appropriate evaluation. Her behaviour is maladaptive and unlikely to help her.

C is correct as this is an inappropriate evaluation. Although her behaviour is statistically rare in terms of the level of her distress, it is common that people would be upset losing a pet, so this aspect is not rare.

D is incorrect as this is an appropriate evaluation. Her level of functioning has been significantly affected by the level of her distress, which is extreme.

## Question 26

*Answer:* ***B***

**Explanatory notes**

A is incorrect as it is normal to experience distress and difficulty at times in life.

B is correct as conforming to social norms is considered an aspect of normality.

C is incorrect as individuals do not need to excel in all areas – indeed it is normal to have areas of challenge.

D is incorrect as it does not describe the concept of normality, but instead an individual being adaptable or perhaps demonstrating resilience.

## Question 27

*Answer:* ***A***

**Explanatory notes**

A is correct as seeking to solve problems demonstrates suitable coping strategies that may help to reduce stress. (In Units 3 and 4, these strategies are discussed as 'approach' coping strategies.)

B is incorrect as although reassurance can be adaptive, 'constantly seeking reassurance' implies that this is not adaptive in nature.

C is incorrect as avoiding a social situation has a negative impact on everyday life and thus is maladaptive.

D is incorrect as using alcohol to manage emotions is also a maladaptive behaviour that can have negative impacts.

## Question 28

*Answer:* ***C***

**Explanatory notes**

A is incorrect as the ability to perform complex cognition is not related to neurotypicality or neurodivergence.

B is incorrect as individuals who fit into the category of 'neurotypical' and individuals who can be categorised as 'neurodiverse' can all experience mental health challenges or distress.

C is correct as 'neurotypicality' refers to the typical development of cognitive, emotional and social abilities as measured by whether this development matches 'norms'.

D is incorrect as 'abnormal' patterns of behaviour would not be considered typical.

## Question 29

*Answer:* ***A***

**Explanatory notes**

A is correct as ADHD–inattentive symptoms typically involve difficulty with memory, attention, focus and organisation.

B is incorrect as this more accurately described symptoms associated with ADHD–hyperactive subtype.

C is incorrect as this more accurately described symptoms of dyslexia.

D is incorrect as this more accurately described symptoms of autism spectrum disorder (ASD).

## Question 30

*Answer:* ***A***

**Explanatory notes**

A is correct as symptoms commonly appear during childhood/adolescence but can be diagnosed later in life as well.

B is incorrect as it is a true statement about ADHD, where symptoms can evolve as individuals move into adulthood.

C is incorrect as creativity is often a strength of individuals with ADHD but does not define it.

D is incorrect as this is a true statement for many individuals with ADHD.

## Question 31

*Answer:* ***D***

**Explanatory notes**

A is incorrect as Annie is likely to face challenges with her reading speed and comprehension.

B is incorrect as Annie is likely to have strong social connections and be able to present well.

C is incorrect as dyslexia presents challenges with handwriting and spelling, and does not refer to difficulties with numerical calculations (this is dyscalculia).

D is correct as individuals with dyslexia often have strong verbal language skills and imaginations, while being challenged with reading accuracy and speed.

## Question 32

*Answer:* ***C***

**Explanatory notes**

A is incorrect as a mental health worker does not describe a specific qualification and Annie's situation does not involve a mental illness.

B is incorrect as psychiatrists are more likely to be involved in diagnosing mental health conditions and prescribing medication (which is not appropriate for dyslexia).

C is correct as an appropriately trained psychologist can assess and diagnose dyslexia.

D is incorrect as a general practitioner would not have the specific training to diagnose dyslexia (thought they may refer Annie and her parents to a psychologist).

## Question 33

*Answer:* ***B***

**Explanatory notes**

A is incorrect as there are often differences in presentation of ASD between boys and girls, leading to underdiagnosis in girls in particular.

B is correct as challenges with social communication and interaction are characteristic in individuals with ASD.

C is incorrect as individuals with ASD can be on the full spectrum from intellectual challenge to intellectual excellence along with non-ASD individuals, whereas social skills are more directly associated.

D is incorrect as individuals with ASD have their experiences influenced by the specific neural connections and pathways in their brains, so relevant symptoms do not disappear over time although individuals will most likely develop strategies to support challenges and leverage strengths.

## Question 34

*Answer:* ***C***

**Explanatory notes**

A is incorrect and ADHD–hyperactive symptomology is not focused on concentration difficulties.

B is incorrect as Nagisa's difficulty with assessment appears to be focus related and not linked to writing or reading.

C is correct as Nagisa's sole focus on her favourite artist and strict routines regarding concert attendance are characteristic of an individual with ASD.

D is incorrect as Nagisa's hyperfocus here is more appropriately attributed to ASD based on the context of the scenario.

## Question 35

*Answer:* ***B***

**Explanatory notes**

A is incorrect as psychiatrists and psychologists have different qualifications but neither is inherently likely to be more or less of an expert on neurodiverse conditions.

B is correct as only a medical practitioner can prescribe medication, and medications can be used to support concentration and focus for some individuals.

C is incorrect as therapeutic techniques are more often the preserve of psychologists than psychiatrists.

D is incorrect as there is no compulsion for a medical practitioner to support an individual with ADHD (or any neurodiversity) – this is a choice of the individual.

*TIP*

» **Be wary of any question/answer that suggests an absolute, such as 'must', 'only' and 'always'. It is relatively rare in psychology for this to be the case. It is much more likely that the correct phrasing is 'likely to be' or 'may include' etc. (However, there are some occasions where the absolute answer is the correct answer.)**

## Question 36

*Answer:* ***B***

**Explanatory notes**

A is incorrect as medications are the responsibility of a psychiatrist rather than a mental health service.

B is correct as mental health organisations can be involved in delivering community care and running support groups etc.

C and D are incorrect as mental health organisations are generally more focused on providing support than diagnostic services.

### Question 37

*Answer:* ***D***

**Explanatory notes**

A is incorrect as although language of preference is crucial for therapeutic support to be effective, cultural competence is about much more than language.

B is incorrect as cultural competence seeks to understand cultural beliefs and practices and incorporate these as part of or to inform treatment where appropriate.

C is incorrect as cultural competence should encourage cultural diversity among staff rather than eliminate the need for it.

D is correct as cultural competence helps professionals to understand what a client may need, and how cultural factors (such as intergenerational trauma) may have affected their mental health.

## Short-answer questions

### Question 1a.

**Sample response**

Hereditary: Genetic inheritance of musical ability

Environmental: Supportive family environment

**Mark allocation:** 2 marks

- 1 mark for a correct hereditary factor (genetic musical ability)
- 1 mark for a correct environmental factor (supportive family, music lessons, performance practice/exams, classmates' bullying)

## Question 1b.

**Sample response**

> Tui may have a high level of confidence in her ability to perform publicly because despite her classmates' bullying behaviour when they made fun of her for music they didn't like, she has the support of her parents and encouragement that she is playing at a high level.

**Mark allocation:** 3 marks

- 1 mark for clear evaluation of confidence (high or low / similar wording acceptable)
- 1 mark for discussion of factor supporting evaluation (strength)
- 1 mark for discussion of factor opposing evaluation (weakness)

### TIP

» **When asked to 'evaluate' you need to provide a clear judgement of that which you are evaluating: in this case, the 'level of confidence'. Sometimes there will only be one allowable direction, other times you can get credit whether you judge 'high' or 'low', but you must 'pick a side' and make that judgement.**

## Question 2

**Sample response**

> Jenna and Wendy have a shared hereditary influence due to their identical genetics, which may give them a similar base level of intelligence or academic ability. However, different environmental influences may lead to Jenna having more academic success (due to her access to tutors and more consistent learning structure) than Wendy, who has been exposed to a less consistent learning environment that prioritises outdoor and sports activities.

**Mark allocation:** 4 marks

- 1 mark for identifying shared genetics as a hereditary factor
- 1 mark for outlining that this leads to a similar baseline level of cognitive ability
- 1 mark for identifying that they are exposed to different environmental influences (one specific example from scenario used for each girl)
- 1 mark for explaining that these different environmental factors may lead to Jenna having higher academic success

## Question 3

**Sample response**

> Biological: Genetic predisposition to anxiety
>
> Social: Stressful workplace

**Mark allocation:** 2 marks

- 1 mark for providing any appropriate biological factor (e.g. genetic predisposition, physical illness, sleep disorder)
- 1 mark for providing any appropriate social factor (e.g. stressful workplace, relationship breakdown, upcoming interview/exams)

## Question 4

**Sample response**

> David is in a state of mental wellbeing because he is currently physically healthy after surviving leukaemia (biological), he is making lots of positive memories with friends through pranks and the school play (social), and has a positive outlook on life (psychological).

**Mark allocation:** 3 marks

- 1 mark for correctly categorising a biological factor for David (physical health, leukaemia)
- 1 mark for correctly categorising a psychological factor (thankful for blessings, positive outlook on life, confidence)
- 1 mark for correctly categorising a social factor (school play, pranking friends, challenging exams)

## Question 5a.

**Sample response**

> Secure attachment

**Mark allocation:** 1 mark

- 1 mark for stating 'secure attachment'

### Question 5b.

**Sample response**

> Gita became very upset when her mother pretended to leave but was quickly calmed down with a hug from her mother when she returned.

**Mark allocation:** 2 marks

- 1 mark for each of the following (up to 2 marks):
  - Gita's distress at her mother 'leaving'
  - Gita's refusal to be calmed by the early childhood teachers
  - Gita quickly calming when her mother returns

**Note:** The response must mention that she calms quickly, not just that she seeks comfort.

### Question 6a.

**Sample response**

> Emotional development

**Mark allocation:** 1 mark

- 1 mark for stating 'emotional development'

**TIP**

» **The phrasing in the question gives you a clue that the answer here is 'emotional development' rather than 'Strange Situation' or 'attachment styles'. The Study Design outlines three processes of psychological development (emotional, cognitive and social) that are studied in the course, in the 'Key Knowledge' section for this Area of Study. This is the value of knowing your Study Design.**

### Question 6b.

**Sample response**

> The Strange Situation

**Mark allocation:** 1 mark

- 1 mark for stating 'Strange Situation'

## Question 6c.

**Sample response**

| Behaviour classification | Behaviour |
|---|---|
| Stranger anxiety | Sadie will play with the toys and gradually explore, but is likely to avoid Jocelyn at first. |
| Separation anxiety | Sadie will be distressed when Yair leaves (and Jocelyn will be unable to calm her). |
| Reunion behaviour | Sadie will smile when Yair comes back into the room. |

**Mark allocation:** 3 marks

- 1 mark for labelling 'stranger anxiety'
- 1 mark for describing the separation anxiety behaviour
- 1 mark for describing the reunion behaviour

## Question 6d.

**Sample response**

> Sadie may not have explored or played with the toys because of being very wary with Jocelyn in the room, and she would have sought comfort from Yair when he returned to the room but would have kept crying and stayed distressed instead of calming. This is because she may not have developed complete trust with him as he is not her main caregiver.

**Mark allocation:** 3 marks

- 1 mark for outlining Sadie's extra wariness or avoidance of toys around Jocelyn
- 1 mark for outlining Sadie's likely behaviour of distress or continuing to cry when Yair returns
- 1 mark for explaining that Sadie does not fully trust Yair to provide care or that she may not be fully attached to him as he is not her primary caregiver

## Question 7

**Sample response**

> Jimena is in Piaget's sensorimotor stage.
>
> During this stage she may have achieved object permanence, which is the understanding that objects still exist even when she cannot see them. She may also have developed goal-directed behaviour, which is the ability to perform an action with a specific desired outcome.

**Mark allocation:** 3 marks

- 1 mark for stating 'sensorimotor stage'
- 1 mark for identifying and outlining object permanence
- 1 mark for identifying and outlining goal-directed behaviour

### Question 8a.

**Sample response**

> Concrete operational

**Mark allocation:** 1 mark

- 1 mark for identifying concrete operational stage

### Question 8b.

**Sample response**

> Dinesh may be four years old.

**Mark allocation:** 1 mark

- 1 mark for stating an age between three and seven years

### Question 8c.

**Sample response**

> Conservation of number

**Mark allocation:** 1 mark

- 1 mark for stating 'conservation of number'

### Question 8d.

**Sample response**

> Dinesh is likely to say that that there is now less water in the wider, shallower container. He will do this because he does not understand the concept of conservation of volume, and hence he believes it is possible for the amount of water to have changed as it is poured from one glass to another.

**Mark allocation:** 3 marks

- 1 mark for indicating Dinesh will say there is less water in the wider container/more water in the narrower glass
- 1 mark for identifying that Dinesh has not accomplished 'conservation of volume'
- 1 mark for explaining Dinesh's errant belief (or negatively phrased because he does not understand that the amount of water stays the same)

### Question 9a.

**Sample response**

> Erik Eriksson

**Mark allocation:** 1 mark

- 1 mark for stating 'Eriksson'

### Question 9b.

**Sample response**

> Maggie: Integrity versus despair stage
>
> Jake: Identity versus role confusion stage

**Mark allocation:** 2 marks

- 1 mark for correctly identifying Maggie's stage
- 1 mark for correctly identifying Jake's stage

### Question 9c.

**Sample response**

> Jake can resolve his conflict by exploring his interests and seeking support from trusted adults such as his grandmother to help him find a stronger sense of what he values and who he wants to be. He can reduce the role confusion and develop his sense of identity by developing his own values and goals.

**Mark allocation:** 2 marks

- 1 mark for outlining exploration of interests or seeking support from trusted adults/ grandmother
- 1 mark for resolving his sense of identity by developing his own values and goals

## Question 10

**Sample response**

> Emily can focus on contributing to the wellbeing of others and having a positive impact. This could involve mentoring younger colleagues or engaging in community activities that allow her to feel fulfilled because she is making a meaningful contribution to society.

**Mark allocation:** 2 marks

- This question could be approached in two different ways:
  - 1 mark for explaining the importance of contributing to others' wellbeing (e.g. raising children, mentoring, engaging in community work)
  - 1 mark for describing how this helps her successfully move past the stage (e.g. feeling fulfilled, fostering generativity, preventing stagnation)

**OR**

  - 1 mark for defining the generativity versus stagnation stage as involving an individual's evaluation of the purpose and fulfilment of their lives
  - 1 mark for describing how this could be resolved by contributing to others' wellbeing (e.g. raising children, mentoring, engaging in community work)

## Question 11a.

**Sample response**

> Critical period

**Mark allocation:** 1 mark

- 1 mark for stating 'critical period'

## Question 11b.

**Sample response**

> A critical period is a time within which a skill must be learned. Krista was within a critical period for balance/motor coordination skills as a toddler on the sailboat and was able to learn excellent balance and coordination skills. Nico will not be able to learn these because he did not develop the skill during the critical period and is now past the critical period for core balance/motor coordination ability.

**Mark allocation:** 3 marks

- 1 mark for outlining a critical period
- 1 mark for explaining that Krista was within a critical period for balance/motor coordination while living on the sailboat
- 1 mark for explaining that as Nico did not develop these skills during that critical period, he cannot ever develop them to the same level.

## Question 11c.

**Sample response**

> Nico is still in a sensitive period for second language acquisition, and so his brain will more readily learn the new vocabulary and sentence structures of Mandarin than Krista's will.

**Mark allocation:** 2 marks

- 1 mark for Nico being in a sensitive period for second language acquisition
- 1 mark for his brain being more readily able to learn the relevant vocabulary/language rules than Krista's

## Question 12a.

**Sample response**

> Layla is using social norms to determine that her behaviour is typical, as seen by her believing this is the thing to do based on what many other university students do ahead of exams.

**Mark allocation:** 2 marks

- 1 mark for identifying 'social norms'
- 1 mark for linking to her recognition of her strategy as one undertaken by many others

## Question 12b.

**Sample response**

> Layla's strategy is maladaptive for her.
>
> While the strategy was meant to allow her to avoid distractions and focus on the work that she needed to do, she has actually eliminated her main avenues of social support that were a protective factor against her anxiety, leading to panic.

**Mark allocation:** 3 marks

- 1 mark for evaluating Layla's strategy as maladaptive/not adaptive
- 1 mark for stating that she was trying to avoid distractions and focus on study (a strength)
- 1 mark for stating that this strategy took away her protective social support and led to her panicking, thus maladaptive (a weakness)

## Question 13

**Sample response**

> Quoc's punctuality and organisation can be considered neurotypical because these behaviours show cognitive and social characteristics that fit in with societal norms. These can be considered adaptive because they help him to stay productive and may reduce stress of missing deadlines.

**Mark allocation:** 2 marks

- 1 mark for explaining how Quoc's behaviour is neurotypical (e.g. aligning with cognitive and social expectations of adults)
- 1 mark for explaining how Quoc's behaviour is adaptive (e.g. improves productivity, reduces stress)

## Question 14a.

**Sample response**

> Attention deficit hyperactivity disorder (ADHD)–hyperactive

**Mark allocation:** 1 mark

- 1 mark for stating 'ADHD–hyperactive'

## Question 14b.

**Sample response**

> Individuals with ADHD often show high levels of divergent thinking, and his brain may excel in tasks that require creativity and imagination. His ability to hyperfocus on areas of interest may also contribute to his ability to work so intently on his creative efforts.

**Mark allocation:** 2 marks

- 1 mark for explaining the link between ADHD and creativity/divergent thinking
- 1 mark for describing hyperfocus allowing him to engage with strength in this area

## Question 14c.

**Sample response**

> Alex may find it difficult to follow instructions and stay seated and still in class for long periods. His teachers could support him by allowing him to use sensory/fidget tools to help regulate.
>
> **OR**
>
> Alex may find it challenging to avoid distractions and stay focused on tasks set in class. Teachers could support him by allowing him to wear earplugs or noise-cancelling headphones to reduce distractions.

**Mark allocation:** 2 marks

- 1 mark for identifying a specific challenge for Alex (e.g. sustained attention/focus, following instructions, sitting still)
- 1 mark for describing a support strategy teachers could allow (e.g. fidget device, noise-cancelling headphones, hands-on activities)

## Question 15a.

**Sample response**

> Ben probably has autism spectrum disorder (ASD). His intense interest in trains reflects restrictive and repetitive behaviours that are characteristic of ASD. Such interests and the intense focus on them can help neurodiverse individuals cope with social and sensory challenges.

**Mark allocation:** 3 marks

- 1 mark for identifying autism spectrum disorder
- 1 mark for linking interest in trains to restrictive interests and/or repetitive behaviours
- 1 mark for explaining the intense focus that can compensate for or help cope with social or sensory challenges

## Question 15b.

**Sample response**

> One support strategy could be implementing early intervention social skills training for Ben to support his ability to have conversations.

**Mark allocation:** 1 mark

- 1 mark for outlining one appropriate strategy (e.g. social skills training, role-playing conversations, explicit teaching of social cues or conversation rules)

## Question 15c.

**Sample response**

> Girls are more likely to exhibit social masking skills and mimicking of appropriate social behaviours than boys.

**Mark allocation:** 1 mark

- 1 mark for identifying an appropriate difference in common ASD presentation between girls and boys (social masking versus overt social challenges; socially acceptable versus niche interests; better verbal abilities for girls; more subtle repetitive behaviours in girls)

**Note:** These differences are not always applicable to each individual, but can be seen in the average.

## Question 16a.

**Sample response**

> Dyslexia

**Mark allocation:** 1 mark

- 1 mark for stating 'dyslexia'

## Question 16b.

**Sample response**

> Jasmine may experience difficulty with the speed of her reading comprehension, and may have poor spelling skills.

**Mark allocation:** 2 marks

- 1 mark for each challenge related to dyslexia that is identified (up to 2 marks):
  - Slowness or difficulty with reading comprehension (understanding words when reading)
  - Slowness or difficulty with reading words
  - Poor spelling
  - Poor or slow handwriting
  - Difficulty with written expression
  - Any other recognised symptoms of dyslexia

## Question 16c.

**Sample response**

> Jasmine's strengths in verbal discussion could be used by allowing her to engage in peer support or group work to afford her greater opportunity to ask questions and talk through her understanding. Teachers could also encourage Jasmine to use audiobooks/text-to-speech to listen along to text as she reads to help with comprehension.

**Mark allocation:** 3 marks

- 1 mark for identifying Jasmine's strength in verbal discussion or social connection
- 1 mark for each (up to 2 marks) strategy outlined that uses the above identified strength, including:
  - Use of audiobooks (verbal comprehension skills strength) to help with reading
  - Use of groupwork (social/verbal strengths)
  - Alternative testing modes such as presentations (verbal strength)
  - Any other strategy that is clearly connected to Jasmine's strengths as identified in scenario

*TIP*

» **Make sure you read the question carefully and tie your answer to the demands of the question. This question requires you to specifically use Jasmine's strengths 'as observed by teachers', so you must use her strengths from the scenario, and not other strengths of individuals with dyslexia that you might recall.**

## Question 17

**Sample response**

> A psychologist would typically work on supporting psychological factors through therapeutic and behavioural strategies such as using fidget devices, whereas a psychiatrist would be likely to focus on prescribing stimulant medications to manage symptoms biologically.

**Mark allocation:** 2 marks

- 1 mark for reference to a psychologist focusing on psychological examples, and a psychiatrist focusing on biological examples
- 1 mark for reference to a specific example of psychological treatment versus biological treatment

## Question 18

**Sample response**

> An organisation might work with teachers, speech/occupational therapists and parents to design support structures and a team approach for supporting the child, such as through speech therapy to improve communication, occupational therapy for sensory issues, and individual education plans for the classroom.

**Mark allocation:** 2 marks

- 1 mark for identifying at least one group whom an organisation might work with other than the child directly
- 1 mark for outlining at least one strategy used to support through this process.

# Unit 1 | Area of Study 2 How are mental processes and behaviour influenced by the brain?

## Multiple-choice questions

### Question 1

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this describes the mind–body problem.

B is correct as the focus of the heart versus brain debate concerned the location of mental processes (whether the heart or brain controls behaviour).

C is incorrect as it describes (in part) phrenology, and no relevant consideration regarding the heart.

D is incorrect as this is an invented concept.

### Question 2

*Answer:* ***D***

**Explanatory notes**

A is incorrect as although split-brain surgery involves cutting the corpus callosum, it is done for the purpose of reducing epileptic symptoms rather than determining function.

B is incorrect as phrenology deals with skull shape and personality traits, not the removal of brain tissue.

C is incorrect because structural neuroimaging, such as MRI, involves creating images of brain structures but does not involve tissue removal or destruction.

D is correct because ablation is the technique in which brain tissue is deliberately destroyed or removed to study the effects on behaviour.

## Question 3

*Answer:* ***D***

**Explanatory notes**

A is incorrect as phrenology is a pseudoscience.

B and C are incorrect as heart versus brain and mind–body problem respectively are older approaches that cannot answer functioning within the brain.

D is correct as CT scans are a structural neuroimaging technique, ablation studies involved lesioning parts of the brain to determine function, and split-brain studies, although not conducted for that purpose, are able to tell us about the function of the corpus callosum.

## Question 4

*Answer:* ***C***

**Explanatory notes**

A is incorrect as it inverts the role of structural and functional neuroimaging.

B is incorrect as it incorrectly describes both techniques.

C is correct as structural imaging shows brain anatomy, whereas functional imaging measures brain activity.

D is incorrect as both techniques can be used for diagnosis and research purposes.

## Question 5

*Answer:* ***B***

**Explanatory notes**

A is incorrect as both techniques are functional imaging techniques.

B is correct as fMRI is higher resolution (sharper, clearer image) and records second by second, whereas PET is less detailed and less time sensitive.

C is incorrect as PET is less expensive and less detailed than fMRI.

D is incorrect as although it is a completely correct statement, it does not describe a difference as the question demands.

### TIP

» **Make sure you check each multiple-choice option. A favourite technique in Psychology exams is for more than one option to be a correct statement, but only one to actually answer the question itself.**

## Question 6

*Answer:* ***B***

**Explanatory notes**

A is incorrect as CT scanning is widely used in hospitals but is not high resolution.

B is correct as CT scanning is widely available but uses X-rays to capture images so exposes the body to radiation.

C is incorrect due to the use of X-rays in CT scans.

D is incorrect as CT scanning is a structural imaging technique, rather than a functional technique, and is relatively inexpensive.

## Question 7

*Answer:* ***C***

**Explanatory notes**

A is incorrect as the thalamus acts as a sensory relay and does not play a primary role in higher-order cognitive functions such as reasoning and planning.

B is incorrect because the hypothalamus regulates basic biological processes such as thirst and hunger, but not higher-order functions.

C is correct as the cerebrum, particularly the neocortex, is responsible for reasoning, problem-solving, language and planning.

D is incorrect because the reticular formation is in the midbrain, and is involved in regulating arousal and consciousness and has some role in attention.

## Question 8

*Answer:* ***D***

**Explanatory notes**

A is incorrect because the medulla, not the pons, is primarily responsible for regulating heart rate and breathing.

B is incorrect because the cerebellum, not the pons, coordinates voluntary movements and balance.

C is incorrect because the thalamus acts to relay sensory and motor information between the brain and spinal cord.

D is correct because the pons facilitates communication between the cerebellum and the forebrain, particularly for sleep regulation and arousal.

## Question 9

*Answer:* ***C***

**Explanatory notes**

A is incorrect as this is not a function of the neocortex.

B is incorrect as coordination of voluntary movement happens in the primary motor cortex of the frontal lobe, in conjunction with a number of other brain structures.

C is correct as the parietal lobe contains the primary somatosensory cortex, which involves processing external touch sensation.

D is incorrect as facial recognition is a function of the temporal lobe.

## Question 10

*Answer:* ***B***

**Explanatory notes**

A is incorrect as the parietal lobe contains the primary somatosensory cortex.

B is correct as the temporal lobe contains this cortex and has the function of processing auditory stimuli.

C is incorrect as the frontal lobe contains the primary motor cortex.

D is incorrect as the occipital lobe contains the primary visual cortex.

## Question 11

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this describes the location and function of Wernicke's area.

B is correct as Broca's area is only located in the left frontal lobe (not bilaterally), and is involved in coordinating the physical movement of lips and tongue in producing speech.

C is incorrect as although Broca's area is in the frontal lobe, the function described is that of Wernicke's area.

D is incorrect as this is not related to Broca's area but may remind students of spatial neglect as a distractor.

## Question 12

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this describes the growth of new neurons rather than reorganisation of brain pathways.

B is correct as neuroplasticity includes adaptive plasticity as the subset of synaptic plasticity involved in learning or recovery from trauma.

C is incorrect as synaptogenesis is the specific formation of new synapses, which will occur during neuroplasticity, but is not the term that encompasses 'ability to reorganise itself in response to learning/injury'.

D is incorrect as developmental plasticity is the subset of synaptic plasticity involved in natural growth and cognitive development, not as a response to learning or injury.

## Question 13

*Answer:* ***A***

**Explanatory notes**

A is correct because adaptive plasticity allows the brain to form new connections and reorganise existing ones to compensate for lost functions, especially after brain trauma.

B is incorrect because adaptive plasticity enables compensating for injury by reorganising and forming new connections, not by losing its ability to adapt.

C is incorrect because harmful dysfunctional connections would be maladaptive.

D is incorrect because the brain's structure remains plastic, meaning it can change and reorganise in response to trauma, experience, and learning.

## Question 14

*Answer:* ***D***

**Explanatory notes**

A is incorrect as rehabilitation is crucial in helping neural pathways to re-form after injury. (Units 3 and 4 in Psychology cover long-term potentiation, which describes this process.)

B is incorrect as neuroplasticity can also occur as a part of normal growth and development.

C is incorrect as both sprouting and rerouting can occur through adaptive plasticity.

D is correct as a younger person's brain will tend to be 'more plastic' and more able to quickly adapt and change in response to experiences than that of an older person.

## Question 15

*Answer:* ***C***

**Explanatory notes**

A is incorrect because synaptogenesis involves the formation of new synapses, rather than the use of alternative existing pathways.

B is incorrect as pruning refers to the elimination of unused synapses or neural connections, which is not described as part of Jane regaining function.

C is correct as rerouting refers to the brain using alternative existing pathways to take over lost functions, which is what Jane's brain is doing to regain movement in her arm.

D is incorrect as neurogenesis refers to the creation of new neurons, which is not directly involved in this scenario.

## Question 16

*Answer:* ***A***

**Explanatory notes**

A is correct as synaptogenesis (sprouting) will occur to develop new connections associated with the language that have not existed previously.

B is incorrect as pruning will occur in pathways that are less used, not pathways that are being repeatedly activated.

C is incorrect as although rerouting can occur as part of learning, this is phrased in a way that implies Ember will replace their first language with the new language, which is not the case.

D is incorrect as this does not relate to developmental plasticity, nor do we know Ember's age to assess the likelihood of being in a sensitive period.

## Question 17

*Answer:* ***B***

**Explanatory notes**

A is incorrect because the occipital lobe is primarily responsible for vision.

B is correct because the frontal lobe is involved in emotion regulation, impulse control and decision-making, so damage here can lead to mood swings and irritability.

C is incorrect because the temporal lobe is more involved in auditory processing and memory rather than emotional regulation.

D is incorrect because the cerebellum is primarily responsible for motor coordination and balance.

## Question 18

*Answer:* ***B***

**Explanatory notes**

A is incorrect because paralysis of the left leg is a biological impact, resulting from damage to the motor areas of the brain.

B is correct because changes in cognitive abilities, such as memory loss, are psychological impacts of acquired brain injury, as the injury can affect cognitive processing.

C is incorrect because difficulty with speech and swallowing is a biological impact, typically related to damage to the brain regions controlling motor functions for speech.

D is incorrect because impaired vision is a biological impact, often due to damage to the visual processing areas in the brain.

## Question 19

*Answer:* ***D***

**Explanatory notes**

A is incorrect as balance issues are a biological symptom.

B and C are incorrect as irritability, as linked to emotional regulation, is psychological and coordination is biological.

D is correct as both balance and coordination are a biological challenge linked to cerebellum damage, whereas irritability is a psychological challenge linked to frontal lobe damage.

## Question 20

*Answer:* ***C***

**Explanatory notes**

A is incorrect as this refers to a neurodegenerative condition, rather than something caused by trauma. This could be referred to as an acquired brain injury.

B is incorrect as this would not be classified as a 'brain injury'.

C is correct as trauma refers to an external force.

D is incorrect as a chemical imbalance is not a brain injury.

## Question 21

*Answer:* ***B***

**Explanatory notes**

A is incorrect as blurred vision is a biological change, not a change to Tom's thought processes or emotions.

B is correct as all three are correctly categorised.

C is incorrect because work disagreements with his coworkers is a social impact, and difficulty concentrating is psychological in nature.

D is incorrect as headaches are a biological symptom.

## Question 22

*Answer:* ***C***

**Explanatory notes**

A is incorrect as ABIs are caused during or after birth, not before.

B is incorrect as it inverts the meaning of the two terms.

C is correct as it accurately differentiates the causes of TBI and ABI, with TBI as a traumatic injury, but ABI as a more encompassing term that includes TBI as a subset.

D is incorrect as there is a difference between the terms.

## Question 23

*Answer:* ***A***

**Explanatory notes**

A is correct as this is a strength of machine learning.

B is incorrect as machine learning cannot be used in place of therapy to treat conditions.

C is incorrect as machine learning cannot edit data being collected for a specific purpose.

D is incorrect as machine learning cannot be a treatment method in itself.

## Question 24

*Answer:* ***B***

**Explanatory notes**

A is incorrect because machine learning does not predict the exact location of brain lesions but rather helps identify patterns related to disease progression.

B is correct because machine learning can analyse large datasets (such as brain scans, genetic data) to help identify potential biomarkers for early detection of Parkinson's disease.

C is incorrect because machine learning does not directly repair damaged neurons, although it may assist in diagnosis and treatment planning.

D is incorrect because machine learning aids in understanding patterns and predictions, not in improving motor coordination directly through neuroplasticity.

## Question 25

*Answer:* ***A***

**Explanatory notes**

A is correct because machine learning is used to analyse neuroimaging data (like MRIs) and predict the progression of CTE, helping researchers understand the long-term effects of brain trauma.

B is incorrect because machine learning is not directly involved in repairing brain cells.

C is incorrect because machine learning is not focused on performance data, but would include neuroimaging and other biological data.

D is incorrect because tracking real-time symptoms is not possible for CTE.

## Question 26

*Answer:* ***B***

**Explanatory notes**

A is incorrect because Parkinson's disease is not primarily caused by viral infections in the gut; rather, the gut–brain axis explores how gut health may influence brain function.

B is correct because contemporary research suggests that changes in gut bacteria (microbiota) may influence the development and progression of Parkinson's disease, possibly through inflammation and other mechanisms.

C is incorrect because Parkinson's disease is influenced by both genetic and environmental factors, with the gut–brain axis being a potential environmental factor.

D is incorrect because the primary focus of the gut–brain axis in Parkinson's disease research is on the gut–brain communication system, not just motor control.

## Question 27

*Answer:* ***C***

**Explanatory notes**

A is incorrect as MRI is a structural technique and fMRI a functional technique, so the examples are written the wrong way around.

B is incorrect as MRI does not track neurotransmitter levels, and fMRI is focused on function, not structural changes.

C is correct as it describes structural imaging for MRI, and tracking function for fMRI.

D is incorrect as MRI does not track neurotransmitter release (functional) and fMRI does not track structures (tumour).

## Question 28

*Answer:* ***D***

**Explanatory notes**

A is incorrect as this describes an acute loss of function due to illness, not a progressive degeneration.

B is incorrect as this describes a loss of function from external force (a traumatic brain injury). Generally, loss of function from such an injury will improve over time (recovery) or not deteriorate further. (CTE is a result of repeated head trauma over time.)

C is incorrect as it describes an event like a stroke, which can cause long-term impairment but is not the same as a progressive loss of function.

D is correct as neurodegenerative diseases involve the gradual and progressive loss/death of neurons. This in turn leads to long-term decline in cognitive, motor or sensory functions.

## Question 29

*Answer:* ***B***

**Explanatory notes**

A is incorrect because CTE is not caused by a single traumatic brain injury but by repeated head trauma over time.

B is correct because CTE is a progressive neurodegenerative disease that results from repeated head trauma, such as concussions.

C is incorrect because CTE affects the brain, not the spinal cord.

D is incorrect because CTE is directly related to head injuries and not a genetic disorder.

### Question 30

*Answer:* ***D***

**Explanatory notes**

A is incorrect because CTE is not diagnosed through blood tests. Its diagnosis relies on clinical evaluations and, most definitively, post-mortem brain analysis.

B is incorrect because CTE is challenging to diagnose in living patients.

C is incorrect because although brain imaging methods like MRI and CT scans can show structural changes, they are not sufficient to definitively diagnose CTE.

D is correct because the most accurate diagnosis of CTE can only be made through the examination of brain tissue after death, where tau protein tangles are commonly found.

### Question 31

*Answer:* ***B***

**Explanatory notes**

A is incorrect because CTE typically takes many years for function loss to occur.

B is correct because CTE is progressive, leading to brain degeneration that severely affects cognitive, emotional and motor functions, and eventually results in death.

C is incorrect because CTE affects both cognitive and motor functions, not just motor coordination.

D is incorrect because CTE affects the brain, not the spinal cord, and it does not primarily lead to paralysis.

## Short-answer questions

### Question 1

**Sample response**

Phrenology proposed that different parts of the brain were responsible for different personality traits and mental abilities that could be determined by the shape of a person's skull. One strength of this approach is that it introduced the idea of localisation of brain function, while one limitation is that phrenology was not scientifically accurate, as skull shape does not reflect brain function or personality traits.

**Mark allocation:** 3 marks

- 1 mark for describing phrenology as determining traits by means of skull shape
- 1 mark for a strength (localisation of brain function)
- 1 mark for a weakness (scientifically inaccurate, pseudoscientific, skull shape has nothing to do with function/personality)

## Question 2

**Sample response**

> Neuroimaging techniques like MRI/fMRI allow us to see the precise structure of and function within specific parts of the brain and are thus more detailed and accurate than older theories such as the heart versus brain debate, which has no understanding of how the brain itself worked.

**Mark allocation:** 2 marks

- 1 mark for outlining that neuroimaging can be used to determine structure and function of brain
- 1 mark for stating that this allows for a more accurate/detailed understanding (compared to any other approach – must mention one specific approach)

## Question 3a.

**Sample response**

> A brain lesion is damaged or abnormal brain tissue, often caused by injury, disease or surgical intervention.

**Mark allocation:** 1 mark

- 1 mark for a clear and accurate definition of a brain lesion (must include the idea of damage or abnormality in brain tissue)

## Question 3b.

**Sample response**

> Lashley could have used ablation to remove or destroy specific brain regions in order to observe changes in behaviour or mental processes. This could help him understand which parts of the brain were responsible for certain functions, such as memory of the maze, or motor coordination to move through the maze.

**Mark allocation:** 3 marks

- 1 mark for stating that he would have destroyed/removed certain parts of the rat brains
- 1 mark for stating that this could determine which areas were responsible for specific functions
- 1 mark for a specific example of one function he may have looked into for the rats

*TIP*

» **Lashley's work is not an expected piece of knowledge in Unit 1 Psychology. However, it is common for unknown/unfamiliar studies that link to your existing knowledge of concepts to appear in exam contexts. So when you see an unfamiliar study, make sure to look at the information provided to work out where it can be connected to what you know.**

### Question 3c.

**Sample response**

This would breach the ethical concept of non-maleficence, as performing ablation causes permanent damage to the brain, which could be classed as severe and ongoing physical and psychological harm to a person.

**Mark allocation:** 2 marks

- 1 mark for identifying the concept of non-maleficence
- 1 mark for explaining that ablation would cause permanent harm

### Question 4a.

**Sample response**

Hemispheric specialisation

**Mark allocation:** 1 mark

- 1 mark for stating 'hemispheric specialisation'

### Question 4b.

**Sample response**

A split-brain operation involves severing the corpus callosum, the structure that connects the two brain hemispheres. This prevents the transfer of information between the hemispheres. In the case of this patient, the left hand (controlled by the right hemisphere) cannot communicate with the language centres in the left hemisphere, causing difficulty in verbalising object names.

**Mark allocation:** 3 marks

- 1 mark for a split-brain surgery severs the corpus callosum
- 1 mark for this prevents the brain from transferring information from one hemisphere to the other
- 1 mark for the left hand cannot communicate with the left hemisphere, so the patient cannot describe the object

### Question 4c.

**Sample response**

> fMRI would show which areas of the brain are active during tasks involving both hemispheres, allowing researchers to observe how the split-brain operation has altered communication between the hemispheres and how each hemisphere functions independently in processing language and spatial tasks.

**Mark allocation:** 2 marks

- 1 mark for describing fMRI as measuring brain activity/functions
- 1 mark for linking this to the ability to see activity related to hemispheric communication and function for each activity

### Question 5a.

**Sample response**

> Medulla, located in the hindbrain

**Mark allocation:** 2 marks

- 1 mark for key term 'medulla'
- 1 mark for identifying its location in 'hindbrain'

*TIP*

» **It may be tempting to say the medulla is located in the 'brain stem'. However, this is a time to look to the phrasing of the Study Design dot point, which categorises the medulla as being part of the hindbrain. This guides you that hindbrain is the only acceptable answer here.**

### Question 5b.

**Sample response**

> Jun may experience difficulty with balance and coordination of motor movements.

**Mark allocation:** 1 mark

- 1 mark for outlining balance or coordination of motor movements. No further detail required

### Question 6

**Sample response**

> The hindbrain controls vital functions for survival such as breathing, heart rate and coordination, whereas the forebrain is responsible for complex functions such as thinking, memory, emotion and voluntary movement.

**Mark allocation:** 2 marks

- 1 mark for outlining hindbrain functions
- 1 mark for outlining forebrain functions

**Note:** For 2 marks, the responses must show a congruent difference in type of functions, e.g. vital functions versus complex functions, not just a list of functions.

### Question 7a.

**Sample response**

> Hypothalamus

**Mark allocation:** 1 mark

- 1 mark for stating 'hypothalamus'

**Note:** As this asks for a specific region, no marks are awarded for 'forebrain'.

### Question 7b.

**Sample response**

> The hypothalamus regulates homeostasis by managing essential functions such as body temperature. It detects changes in the body's internal environment and triggers appropriate responses to return the body to balance, such as sweating if we are too hot in order to cool us down.

**Mark allocation:** 2 marks

- 1 mark for outlining homeostasis as returning body's internal environment to a state of balance
- 1 mark for outlining promotion of sweat in cooling, **OR** shivering in warmth

## Question 8

**Sample response**

> Margot is experiencing left spatial neglect, a condition where she is unaware of or ignores the left side of her environment (seen by only eating from the right side of the plate and ignoring Emily on her left). This occurs because of damage to the right parietal lobe of the cerebral cortex (neocortex), which is responsible for processing spatial awareness.
>
> Because of contralateral control, the right hemisphere controls attention to the left side of space, so damage to this area causes neglect of the left visual field.

**Mark allocation:** 4 marks

- 1 mark for identifying 'left spatial neglect'
- 1 mark for outlining that this occurs because of damage to the right parietal lobe
- 1 mark for outlining that contralateral control means the right side of brain controls the left side of body
- 1 mark for link to scenario (specific symptoms being experienced by Margot)

## Question 9a.

**Sample response**

> Acquired brain injury (ABI)

**Mark allocation:** 1 mark

- 1 mark for stating 'acquired brain injury' **OR** 'ABI'

*TIP*

» **Because 'ABI' is listed as an abbreviation in the Study Design, you can use it in place of the full key term in any response. For any terms not abbreviated in the Study Design, best practice is to write these out in full first with abbreviation in brackets, then you may abbreviate for the rest of that question only.**

### Question 9b.

**Sample response**

> Temporal lobe

**Mark allocation:** 1 mark

- 1 mark for stating 'temporal lobe'

### Question 9c.

**Sample response**

> This could make it more difficult for Tonya to make and maintain friends (social) as others might feel she is not listening to them if she struggles to remember what they say or recognise who they are.

**Mark allocation:** 2 marks

- 1 mark for identifying a social impact (e.g. challenges to friendships, difficulty working with customers)
- 1 mark for linking this to being caused by difficulty with memory/facial recognition

### Question 9d.

**Sample response**

> One process is rerouting, where undamaged neurons form new connections to take over the functions of damaged areas. This allows Tonya to slowly regain abilities like memory and facial recognition.

**Mark allocation:** 2 marks

- 1 mark for identifying 'rerouting'
- 1 mark for outlining rerouting with link to scenario

### Question 9e.i.

**Sample response**

> MRI **OR** CT scan

**Mark allocation:** 1 mark

- 1 mark for stating either 'MRI' or 'CT scan' (either acceptable as a structural neuroimaging technique)

### Question 9e.ii.

**Sample response**

> He may experience partial vision loss in his right visual field.

**Mark allocation:** 1 mark

- 1 mark for outlining vision loss in the right visual field specifically.

**Note:** It is not acceptable to state 'right eye' as vision is hemispherically split by visual field, not left eye versus right eye.

### Question 10a.

**Sample response**

> Wernicke's aphasia is characterised by fluent but nonsensical speech and difficulty understanding language, whereas Broca's aphasia involves slow, effortful speech with pauses, although comprehension is usually intact. Since Sarah could write words but struggled to speak them, and her speech was slow and effortful, she most likely experienced Broca's aphasia.

**Mark allocation:** 3 marks

- 1 mark for identifying Wernicke's aphasia symptoms
- 1 mark for identifying Broca's aphasia symptoms
- 1 mark for correctly linking Sarah's symptoms to Broca's aphasia

### Question 10b.

**Sample response**

> Primary motor cortex

**Mark allocation:** 1 mark

- 1 mark for identifying (primary) motor cortex

### Question 10c.

**Sample response**

> Primary auditory cortex for processing the sound of her mother's questions

**Mark allocation:** 2 marks

- 1 mark for naming primary auditory cortex
- 1 mark for outlining its role in processing sounds that of her mother's questions

## Question 10d.

**Sample response**

> Sarah, at age 18, is likely to be younger than most people experiencing stroke. As a result of her age, her brain is likely to be more plastic / more able to efficiently undertake adaptive plasticity.

**Mark allocation:** 2 marks

- 1 mark for identifying age as a factor and that Sarah is probably younger than most stroke survivors
- 1 mark for outlining that the brain is more plastic at a younger age

## Question 10e.

**Sample response**

> Sarah's prefrontal cortex is involved in decision-making, planning, goal setting and emotional regulation. As such, it will have been responsible for her decision to engage in speech therapy, setting goals for her recovery, and helping her manage setbacks.

**Mark allocation:** 2 marks

- 1 mark for outlining the general role of the prefrontal cortex
- 1 mark for linking that role to a specific decision, plan or goal of Sarah's

## Question 11a.

**Sample response**

> Machine learning algorithms can be trained to analyse large amounts of brain activity data to detect patterns that precede seizures. These models can learn from past data to identify subtle changes that may not be noticeable to human observers, allowing for more accurate predictions of when seizures may occur.

**Mark allocation:** 3 marks

- 1 mark for outlining the use of machine learning to detect patterns/data that precedes seizures
- 1 mark for machine learning/algorithms being more able to identify such changes than humans
- 1 mark for linking this to improvements in predictions of seizure occurrence

### Question 11b.

**Sample response**

> Brain activity data such as electroencephalography (EEG) might be used.

**Mark allocation:** 1 mark

- 1 mark for describing an appropriate data type (e.g. EEG, neuroimaging, patient notes)

### Question 12a.

**Sample response**

> The disease is called chronic traumatic encephalopathy (CTE). It is a progressive neurological condition caused by repeated head trauma, leading to brain degeneration over time.

**Mark allocation:** 2 marks

- 1 mark for stating 'chronic traumatic encephalopathy' (CTE)
- 1 mark for accurately describing it as progressive brain damage caused by repeated head injuries

### Question 12b.

**Sample response**

> John's football career would have involved frequent collisions and repeated head trauma, increasing his risk of developing CTE.

**Mark allocation:** 1 mark

- 1 mark for clearly linking repeated head impacts in football to increased risk of CTE

### Question 12c.

**Sample response**

> It means that the disease causes the gradual breakdown and loss of neurons in the brain, leading to worsening symptoms over time.

**Mark allocation:** 1 mark

- 1 mark for correctly defining neurodegenerative as progressive damage or loss of neurons

### Question 12d.

**Sample response**

> Biological: Memory loss or motor coordination issues
>
> Psychological: Depression or increased aggression
>
> Social: Withdrawal from family or difficulty maintaining relationships

**Mark allocation:** 3 marks

- 1 mark for each valid example of a biological, psychological and social change related to CTE (up to 3 marks)

**TIP**

» **Although the categories of biological, psychological and social have been provided here, that won't always be the case. If you are asked to identify examples that link to multiple concepts in the one question, always make sure to use key terms to clearly label/categorise these.**

### Question 12e.

**Sample response**

> A physical biomarker may include the build-up of tau protein in the brain.

**Mark allocation:** 1 mark

- 1 mark for identifying tau protein accumulation

### Question 12f.

**Sample response**

> A definitive diagnosis can only be established after death by examining brain tissue for the tau protein build-up (which currently can only be detected post-mortem). So John's symptoms can only be used to suggest a possible/probable diagnosis.

**Mark allocation:** 2 marks

- 1 mark for outlining that physical evidence (e.g. tau protein) to diagnose can only be found through post-mortem examination
- 1 mark for outlining that a possible diagnosis is made based on John's symptoms

# Key Science Skills: Part 1

## Multiple-choice questions

### Question 1

*Answer:* ***A***

**Explanatory notes**

A is correct as the independent variable is the variable that is manipulated to see if it will affect the dependent variable.

B and D are incorrect as an extraneous variable is a variable other than the independent variable that may affect the dependent variable but is not the variable being manipulated. A confounding variable is an extraneous variable that has not been controlled.

C is incorrect as a controlled variable is kept consistent through the experiment.

*TIP*

» **An extraneous variable is any variable other than the independent variable in the research that could cause a change in the dependent variable. We need to make sure that extraneous variables are identified and then controlled so that our results are not affected.**

### Question 2

*Answer:* ***A***

**Explanatory notes**

A is correct. Dr Thompson has made a prediction that learning will be improved through listening to classical music and has suggested a way to test this: measuring exam results.

B is incorrect. No conclusion can be drawn based on this prediction. The hypothesis must be tested and the results analysed statistically before a conclusion can be drawn.

C is incorrect. This is not yet an experimental design as it has not stipulated the method.

D is incorrect. No data has yet been collected so interpretation is not possible.

## Question 3

*Answer:* ***D***

**Explanatory notes**

A is incorrect as the exam score is the dependent variable (DV), and the time spent studying is not being varied.

B is incorrect. These responses are in the wrong order; see the explanation for D.

C is incorrect. See the explanation for A.

D is correct. The independent variable (IV) is the classical music being played while the students study, versus no music being played. The DV is the exam result.

## Question 4

*Answer:* ***C***

**Explanatory notes**

A is incorrect as the experimental group are the students studying while listening to music.

B is incorrect as this is not an accurate term in this context. The experimental design being used is between-subjects.

C is correct. The control group is the group that does not have the IV applied to it.

D is incorrect. The research group is not an accurate term in this context.

## Question 5

*Answer:* ***A***

**Explanatory notes**

A is correct as the independent variable is the type of classroom (with natural light versus fluorescent), which is being manipulated, and the dependent variable is the students' learning engagement, which is measured through ratings.

B is incorrect as learning engagement is the dependent variable (not the independent variable), and the type of classroom is the independent variable (not the dependent variable).

C is incorrect as age is not a factor manipulated in this experiment; therefore, it is not the independent variable.

D is incorrect as time of day is not mentioned as a factor in this experiment, so it cannot be the independent variable, and the type of classroom is not the dependent variable.

## Question 6

*Answer:* ***B***

**Explanatory notes**

A is incorrect as there is no mention of age being controlled in this experiment, although matching groups by age would be ideal.

B is correct as the scenario clearly states the two classrooms are identical in chairs, desks and resources.

C is incorrect as the lighting conditions are what is being manipulated as the independent variable.

D is incorrect as there is no mention of controlling the teaching style within each classroom.

## Question 7

*Answer:* ***D***

**Explanatory notes**

A is incorrect as between-subjects design is about exposure to one condition of the independent variable only, not related to the DV.

B is incorrect as although this option includes an aspect of within-subjects design, the definition of a within-subjects design is exposure to all/both IV conditions.

C is incorrect as although it is an accurate statement, it does not take into account the pre- and post-experiment measurement of DV, which has a within-subjects component.

D is correct. A mixed design is used because there is a between-subjects factor (the two different classroom environments of which each student only experiences one) and a within-subjects factor (the repeated measurement of learning engagement before and after one week in both environments for all students).

## Question 8

*Answer:* ***A***

**Explanatory notes**

A is correct as a correlational study measures the relationship or association between two variables (e.g. how they change together), but it does not manipulate the variables or involve a controlled experiment.

B is incorrect as this describes a within-subjects design where participants experience multiple conditions or treatments.

C is incorrect as this appears to describe a between-subjects design where participants are allocated to different groups and a variable is manipulated.

D is incorrect as this describes a simulation, which involves creating a controlled, artificial environment to study behaviour, rather than measuring the relationship between variables.

## Question 9

*Answer:* ***C***

**Explanatory notes**

A is incorrect as it shows a within-subjects design, where participants are exposed to multiple conditions and their responses are measured.

B is incorrect as this shows a correlational study, which involves comparing different groups of participants.

C is correct as a case study involves a detailed investigation of a single case or a small number of cases to gain a deep understanding of an individual, group or situation. It is often used for rare or unique occurrences.

D is incorrect as this describes fieldwork, where researchers observe behaviour in a natural setting, but it doesn't involve the same depth of investigation into a specific case or individual as a case study.

## Question 10

*Answer:* ***A***

**Explanatory notes**

A is correct as random sampling ensures that every individual in the population has an equal chance of being selected, eliminating bias in the selection process.

B is incorrect as it describes stratified sampling, where the population is divided into subgroups and then randomly sampled.

C is incorrect because it partially describes stratified sampling, where participants are selected based on specific characteristics (in proportions that they appear in the population).

D is incorrect because it describes convenience sampling, where participants are chosen based on availability or ease of access.

TIP

» **Convenience sampling is technically no longer part of the Psychology Study Design, but it is helpful to be able to recognise it owing to its frequent appearance in psychological research (probably including every experiment you are ever involved in!), and its use in being able to assess external validity and generalisability.**

## Question 11

*Answer:* ***C***

**Explanatory notes**

A is incorrect. This is convenience sampling, where participants are selected on the basis of their ease of availability.

B is incorrect. This is random sampling, where participants are selected randomly from the entire population without dividing it into subgroups.

C is correct as stratified sampling divides the population into subgroups (strata) on the basis of specific characteristics (e.g. age, gender income) and then selects participants from each subgroup to ensure proportional representation.

D is incorrect as it also describes convenience sampling.

## Question 12

*Answer:* ***B***

**Explanatory notes**

A and D are incorrect as there is no indication of random/equal chance of selection occurring in this experiment.

B is correct as students are divided into strata and selected in appropriate proportions.

C is incorrect as although the students are only from one university, since the campus policy would presumably only apply to students from this university, the whole population is being sampled.

## Question 13

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this would introduce bias since not all faculties are represented, therefore reducing representativeness.

B is correct as all other factors being equal, a larger sample size is likely to be more representative.

C is incorrect as using only volunteers suggests convenience sampling.

D is incorrect as this would reduce representativeness since not all students study across multiple faculties.

## Question 14

*Answer:* ***A***

**Explanatory notes**

A is correct as if a participant is fully aware of deception, it is no longer deception, and the knowledge will affect the participant's response. A clear description of any deception will occur during debriefing (at the conclusion of the experiment).

B is incorrect as rights, such as the right to withdraw, should be made clear to a participant before they join the study so that they know what they are allowed to do while participating.

C is incorrect as risks must be identified for a participant to be truly informed.

D is incorrect as the part the participant is playing in the research should be explained to them as fully as possible before the study.

### TIP

» **A good way to remember what should be included for informed consent is to learn the acronym RRR (rights, roles, risks).**

## Question 15

*Answer:* ***C***

**Explanatory notes**

A, B and D are incorrect. Debriefing occurs after the study has finished.

C is correct. The purpose of debriefing is to fully explain some details of the study, check that no harm has been done and offer counselling services if required. This is done after the study has finished and is especially important if some form of deception has been used in the study.

## Question 16

*Answer:* ***D***

**Explanatory notes**

A is incorrect as there are 400 children in the sample, but the researcher wished to investigate the effect in primary-school children generally.

B is incorrect as although this describes the sample in some detail, the sample is not the population, as outlined in the explanatory notes for option A.

C is incorrect as the school principals are part of the research but are not the population.

D is correct. The researcher wishes to investigate the effect in primary-school children, so that is the population.

## Question 17

*Answer:* ***B***

**Explanatory notes**

A is incorrect as the choice of schools was not random (as the schools were chosen based on their location) and allocation was not random (the researcher chose the coeducational school to undergo a particular condition).

B is correct. The researcher did not randomly choose the schools, nor did she randomly allocate them to the control or experimental group.

C is incorrect as she did not purposely choose schools from particular strata, keeping the proportions the same as in the population.

D is incorrect as she did not purposely choose schools from particular strata. She also did not use random allocation.

## Question 18

*Answer:* ***A***

**Explanatory notes**

A is correct. The independent variable is the amount of exposure, and the operationalised independent variable explains in more detail how the amount of exposure will vary between the two groups.

B is incorrect as an extraneous variable would be an unwanted variable in the experiment, not the variable being actively manipulated.

C is incorrect as a controlled variable is kept consistent across the experiment, which is not the case here.

D is incorrect as the dependent variable is the variable being measured, not the variable being manipulated.

## Question 19

*Answer:* ***D***

**Explanatory notes**

A is incorrect as although there may have been conversation between the researcher and the students, the tool used is most correctly called a rating scale.

B is incorrect as a questionnaire involves a series of structured questions.

C is incorrect as this is not an observational study, in which the researcher would watch someone's behaviour and record their responses.

D is correct as the smiley face and frowny face scale is a rating scale made 'child friendly' so that children who cannot read or identify numbers may still respond.

## Question 20

*Answer:* ***D***

**Explanatory notes**

A is incorrect as this is a potential confounding variable. Coeducational students may already have a different attitude towards a female principal than students in an all-girls school. This should be controlled across the conditions, as it may influence the dependent variable.

B is incorrect as this is a potential confounding variable. Initial feelings towards the principal may influence the dependent variable and this should be accounted for before data collection.

C is incorrect as this is a potential confounding variable. To ensure that the independent variable causes the change in the dependent variable, conditions across the two groups should be kept as similar as possible, so timing should be kept consistent.

D is correct as this is not a potential confounding variable. This variable is the dependent variable that is being measured.

## Question 21

*Answer:* ***D***

**Explanatory notes**

A is incorrect as debriefing after the experiment is crucial, especially to make sure students don't have a negative view of their principal.

B is incorrect as beneficence is an ethical concept she must ensure is applicable to the study – there should benefits to students and broader society from conducting the research.

C is incorrect as this describes confidentiality, which she must meet.

D is correct, although this is a tricky one; because the students are under 18, it is not the students who must complete the informed-consent form, but their parents or guardians.

## Short-answer questions

### Question 1a.

**Sample response**

> IV: Parenting style (authoritative versus authoritarian)
>
> DV: Social behaviours of children (as measured by cooperation/ communication with peers)

**Mark allocation:** 2 marks

- 1 mark for correctly identifying IV as parenting style/type – including the specific conditions in brackets (authoritative or authoritarian) is not required but is encouraged
- 1 mark for correctly identifying DV as children's social behaviour – including the specific conditions in brackets (cooperation and communication) is not required but is encouraged

### Question 1b.

**Sample response**

> The psychologist controlled for age because age could be an extraneous/ potential confounding variable that would affect children's social behaviours. Controlling age reduces the effect of variables other than parenting style on the measured behaviour as older children are likely to have better communication skills.

**Mark allocation:** 2 marks

- 1 mark for identifying age as an extraneous or potential confounding variable
- 1 mark for explaining that increasing age could increase cooperation/communication skills (or that decreasing age could decrease cooperation/communication), thus needing to be controlled

*TIP*

» **When explaining the effect of an extraneous or confounding variable, make sure you outline the specific direction of this variable's impact on the DV if you can. This helps an assessor see your understanding of how the EV/CV is impacting the DV.**

### Question 2a.

**Sample response**

> Fieldwork

**Mark allocation:** 1 mark

- 1 mark for stating 'fieldwork' (only acceptable answer as this is a naturalistic observation of Ming's performance)

### Question 2b.

**Sample response**

> Voluntary participation has not been followed as Ming has not been given free choice over her participation in the study.

**Mark allocation:** 2 marks

- 1 mark for identifying voluntary participation
- 1 mark for outlining how voluntary participation has not been followed

**Note:** Alternative answers include informed consent (Ming has not had the nature and purpose of the study explained to her), confidentiality (her role and results from the study are going to be shared with her company without regard for her permission/consent), and withdrawal rights (she does not appear to have the option to pull out of the study owing to its 'compulsory' nature that is tied to her job).

### Question 3a.

**Sample response**

> IV: The presence or absence of a supportive friend (supportive friend versus alone)
>
> DV: Level of learning (as measured by the number of successful juggles performed by participants)

**Mark allocation:** 2 marks

- 1 mark for correctly identifying IV
- 1 mark for correctly identifying DV

**Note:** It would be acceptable to include the detail in brackets on its own.

### Question 3b.

**Sample response**

> Random allocation involves assigning participants to the two groups (supportive friend versus alone) in such a way that each participant has an equal chance of being placed in either group. This can be done by using a random number generator or drawing names from a hat to ensure no bias in group assignment.

**Mark allocation:** 2 marks

- 1 mark for showing understanding that random allocation is the assigning of participants into experimental and control groups with an equal chance of being placed in either
- 1 mark for describing how this could be done (e.g. use of random number generator, drawing out of a hat)

### Question 3c.

**Sample response**

> The sample was selected with an equal number of male and female participants.
>
> **OR**
>
> The sample included equal proportions of Year 11 and Year 12 students.

**Mark allocation:** 1 mark

- 1 mark for outlining one of the points mentioned in the sample response

### Question 3d.

**Sample response**

> VCE students

**Mark allocation:** 1 mark

- 1 mark for identifying VCE students **OR** Year 11/12 students (do not allocate mark if students have included a specific number – this makes it the sample)

### Question 3e.i.

**Sample response**

> One characteristic of a controlled experiment in this study is that the researcher actively manipulates an independent variable (presence of supportive friend).

**Mark allocation:** 1 mark

- 1 mark for providing a characteristic of a controlled experiment with a link to the scenario, including: active manipulation of a variable (presence of supportive friend); testing a cause-and-effect relationship between supportive friends and successful learning; controlling potential extraneous/confounding variables such as all participants having no previous experience of juggling

### Question 3e.ii.

**Sample response**

> The experimental design used is a between-subjects design.

**Mark allocation:** 1 mark

- 1 mark for identifying this as a between-subjects design (as each participant is only exposed to one condition)

### Question 3f.

**Sample response**

> This helps eliminate the potential confounding variable of juggling experience/skill, which would probably increase the number of successful juggles for some participants. This ensures that the experiment measures the effect of social support, rather than individual juggling skill level.

**Mark allocation:** 3 marks

- 1 mark for identifying juggling experience as an extraneous or potential confounding variable
- 1 mark for outlining the effect of previous experience on rate of successful juggles
- 1 mark for explaining that this helps to ensure the experiment truly measures the effect of social support rather than juggling skill (could also be answered by saying that this increases the internal validity of the study)

## Question 4a.

**Sample response**

> They will need to use a literature review, as this will allow them to use secondary data collected by other researchers on individuals with concussion.

**Mark allocation:** 2 marks

- 1 mark for identifying 'literature review'
- 1 mark for justifying answer with reference to secondary data / existing research

## Question 4b.

**Sample response**

> A controlled experiment would breach the ethical concept of non-maleficence, where participants cannot be subjected to lasting or severe psychological or physical harm as the result of an experiment. By definition, a concussion involves brain damage, so there is no way to conduct this experiment without causing harm.

**Mark allocation:** 3 marks

- 1 mark for identifying non-maleficence as the relevant ethical concept
- 1 mark for describing non-maleficence
- 1 mark for explaining how inducing concussion would breach non-maleficence

## Question 5

**Sample response**

> The doctor should ensure that the nature and purpose of the trial is shared with Yvonne and Alison/family. Yvonne must be told all relevant risks/benefits to trialling this medication. Yvonne and a family member with legal responsibility for her should sign the informed-consent form if Yvonne is not fully able to comprehend due to her impaired memory.

**Mark allocation:** 3 marks

- 1 mark for stating that the nature and purpose must be shared and understood
- 1 mark for stating that the risks and benefits **OR** withdrawal and confidentiality rights must be shared and understood
- 1 mark for requiring Yvonne and family/guardian to complete the written consent

**Note:** The requirement for a guardian also to sign exists when there is a question about the competence of the participant to fully comprehend the nature/purpose and risks/benefits etc. For example, this would be the case if they are under 18 or experiencing

an illness such as Alzheimer's that could lead to cognitive impairment. However, for an individual over 18 with a cognitive impairment, the guardian can only sign if they have legal responsibility for the participant.

**TIP**

» **If you are asked to write about informed consent, make sure you go into as much detail as possible – of the relevant ethical guidelines it is the one that usually requires the most specificity in applying it.**

## Question 6

**Sample response**

It is hypothesised that children in the formal operational stage will show greater understanding on the logical reasoning task than children in the preoperational stage.

**Mark allocation 3 marks**

- 1 mark for stating the relevant population (children) as part of the hypothesis
- 1 mark for predicting that increased age leads to increased logical reasoning, or lower age leads to decreased logical reasoning
- 1 mark for referring to a comparison (older versus younger **OR** formal operational versus preoperational)

## Question 7a.

**Sample response**

Case study

**Mark allocation:** 1 mark

- 1 mark for stating 'case study' – no other options allowed

## Question 7b.

**Sample response**

One characteristic of a case study is the in-depth exploration of a single individual such as Haoyu.

**Mark allocation:** 1 mark

- 1 mark for outlining a characteristic of a case study (e.g. in-depth exploration of individual, conducted in a real-world setting without manipulation, highly detailed investigation of all factors)

# Unit 2 | Area of Study 1 How are people influenced to behave in particular ways?

## Multiple-choice questions

### Question 1

*Answer:* ***C***

**Explanatory notes**

A is incorrect as person perception is about our evaluation of others, not ourselves.

B is incorrect as 'detection' implies sensation, not perception.

C is correct as this term describes the judgements we make about other people.

D is incorrect as, although first impressions are mostly based on physical cues, these are only a component of person perception and can also be persistent rather than changeable.

### Question 2

*Answer:* ***B***

**Explanatory notes**

A is incorrect because it doesn't eliminate cognitive biases.

B is correct as person perception can use appearances of others to help us evaluate people.

C is incorrect because person perception can also be based on various cues, not just internal factors, and can lead to accurate or inaccurate decisions.

D is incorrect because person perception focuses more on people themselves than the environment.

## Question 3

*Answer:* ***C***

**Explanatory notes**

A is incorrect as both options are situational attributions.

B is also incorrect as both options are situational attributions.

C is correct as 'not caring' implies an internal, personal attribution, whereas 'talking to a teacher' implies an external, situational attribution.

D is incorrect as both options are personal attributions.

## Question 4

*Answer:* ***A***

**Explanatory notes**

A is correct as this reflects a difference in attribution when comparing our behaviour to someone else's behaviour.

B is incorrect as fundamental attribution error solely focuses on overestimation of personal factors in someone else's poor behaviour.

C is incorrect as confirmation bias is not related to attributions.

D is incorrect as the self-serving bias refers to how we seek to explain our poor behaviour versus our own good behaviour, and is not related to someone else.

## Question 5

*Answer:* ***A***

**Explanatory notes**

A is correct as it is an assumption made about individuals based on their membership of a particular group.

B and D are incorrect as they relate to attribution, not stereotyping.

C is incorrect because understanding the individuality of group members is the opposite of stereotyping.

## Question 6

*Answer:* ***A***

**Explanatory notes**

A is correct as attitudes can affect the way we interact with others.

B is incorrect as attitudes do not always influence how we perceive and react to others.

C is incorrect as attitudes involve both cognitive (thinking) and affective (feeling) components.

D is incorrect as attitudes are central to social connections.

## Question 7

*Answer:* ***A***

**Explanatory notes**

A is correct. Attitudes are suggested to be composed of affect (the emotion of the attitude), cognitions (our beliefs about the attitude object) and behaviour (how we act towards the attitude object).

B is incorrect as attitude is not a component of the theory.

C is incorrect as belief and consideration are not components of this theory.

D is incorrect. See the explanation for C.

## Question 8

*Answer:* ***B***

**Explanatory notes**

A is incorrect as although the letter-writing is based on Kris's attitude, this is not a component of the theory of attitude.

B is correct. The actions made by the person (writing letters) concerning the object of the attitude (the plight of refugees) is the behavioural component of the tricomponent theory.

C is incorrect as affect is the emotion associated with the attitude. Although Kris probably has a number of emotions associated with refugees and their circumstances, letter-writing is not an emotion but a behaviour.

D is incorrect as the cognitive aspect of the theory is the beliefs that Kris holds. These may be expressed in the letter, but the act of writing the letter is not a thought but a behaviour.

## Question 9

*Answer:* ***C***

**Explanatory notes**

A is incorrect as buying merchandise is behavioural, not cognitive.

B is incorrect as finding it difficult to understand is cognitive, and feeling excited is affective.

C is correct as each component is correctly matched – excitement is affective, buying merchandise is behavioural, and thinking AFL is complex is a cognition.

D is incorrect as spending time with friends is behavioural.

### TIP

» **Multiple-choice questions being written with multiple parts to each answer is becoming more common in VCE Psychology. Ahead of Units 3 and 4, make sure to practise parsing multiple pieces of information in multiple-choice questions.**

## Question 10

*Answer:* ***A***

**Explanatory notes**

A is correct as cognitive dissonance is possible when one component is misaligned with the others, and this correctly describes that her challenge in understanding the rules is incongruous with the affective and behavioural components.

B is incorrect as not all components match.

C is incorrect as her excitement and attending matches are congruent.

D is incorrect as cognitive dissonance cannot be ruled out when components are incongruent.

## Question 11

*Answer:* ***A***

**Explanatory notes**

A is correct as confirmation bias involves favouring information that supports existing beliefs while ignoring contradictory evidence.

B is incorrect as it refers to self-serving bias.

C is incorrect as it refers to false consensus bias.

D is incorrect as this is not clearly a bias, but instead may be a logical conclusion.

## Question 12

*Answer:* ***B***

**Explanatory notes**

A is incorrect as confirmation bias is the tendency to seek information confirming existing beliefs.

B is correct as self-serving bias is the tendency to attribute positive outcomes to internal factors (e.g. skill) and negative outcomes to external factors (e.g. traffic).

C is incorrect as false consensus bias involves assuming others share your views.

D is incorrect as anchoring bias is about relying too heavily on an initial piece of information – this is not directly in the Psychology course but is linked to anchoring heuristics.

## Question 13

*Answer:* ***B***

**Explanatory notes**

A is incorrect because confirmation bias avoids opposing viewpoints, not seeks them.

B is correct for the same reason as stated in option A – by only seeking out information that agrees with our existing opinions, cognitive dissonance can be avoided.

C is incorrect because dissonance can affect decision-making and behaviour.

D is an oversimplification.

## Question 14

*Answer:* ***B***

**Explanatory notes**

A is incorrect as media coverage links to the availability heuristic.

B is correct as anchoring heuristic involves relying too heavily on the first piece of information encountered (the 'anchor') to influence decisions.

C is incorrect as it most closely links to the representative heuristic.

D is incorrect as the use of emotion in decision-making refers to the affect heuristic.

## Question 15

*Answer:* ***C***

**Explanatory notes**

A is incorrect as there is no information that 'anchors' Lena's judgement here.

B is incorrect as there is no subset of correct information that is available to Lena.

C is correct as she is using a stereotype to make a decision about Mike's interests.

D is incorrect as there is no emotion involved.

## Question 16

*Answer:* ***A***

**Explanatory notes**

A is correct as each influence described correctly links to availability heuristic. Mikhail used the information he can recall.

B is incorrect as Mikhail's decision is not based on an anchor.

C is incorrect as brand reputation does not fit representative heuristic, nor is this linked to the specific phone.

D is incorrect as the negative influence does not link to emotional factors.

## Question 17

*Answer:* ***C***

**Explanatory notes**

A and D are incorrect as these are, respectively, a definition and description of stereotype, and do not convey the negative connotations that prejudice entails.

B is incorrect as this is more strictly a definition of discrimination.

C is correct. Prejudice is an attitude that is usually negative and is based on the perception that someone belongs to a certain group.

## Question 18

*Answer:* ***A***

**Explanatory notes**

A is correct as direct discrimination occurs when someone is treated unfairly or unjustly based on characteristics such as ethnicity, gender or disability.

B and C refer to social stigma.

D is incorrect as it reflects indirect discrimination (same expectations of all but a more negative impact on some).

## Question 19

*Answer:* ***D***

**Explanatory notes**

A and C are incorrect because these examples show direct discrimination.

B is incorrect as it does not show discrimination but rather a consequence for past behaviour.

D is correct as requiring all pilots to be a specific height will disadvantage females who are statistically shorter on average.

## Question 20

*Answer:* ***D***

**Explanatory notes**

A is incorrect because self-stigma involves the internalisation of societal stigma, not personal shame.

B is incorrect because both social stigma and self-stigma primarily affect mental health, not specifically physical health.

C is incorrect because both social and self-stigma refer to attitudes, not forms of discrimination.

D is correct because it accurately distinguishes social stigma (external societal attitudes) from self-stigma (internalised beliefs about oneself).

## Question 21

*Answer:* ***A***

**Explanatory notes**

A is correct as social norms are informal guidelines within a group or society about expected behaviour.

B and D are incorrect as these refer to formalised rules or laws.

C is incorrect as it refers to personal beliefs.

## Question 22

*Answer:* ***D***

**Explanatory notes**

A is incorrect as this simply describes the process of conformity.

B is incorrect as group shift does not affect the influence of a leader over the group.

C correctly describes the effect of group shift, but on the group's beliefs, not behaviours.

D is correct as it describes the possible effect on group behaviour.

## Question 23

*Answer:* ***B***

**Explanatory notes**

A is incorrect as norms, whether social or cultural, do not have to be enforced by laws.

B is correct as social norms are general societal expectations of all individuals, whereas cultural norms refer to the specific practices and beliefs of a particular group within society.

C and D are incorrect as they misrepresent the differences between these two types of norms.

## Question 24

*Answer:* ***B***

**Explanatory notes**

A is incorrect as a norm is not a law (nor is this example cultural).

B is correct as it refers to a food norm within a specific cultural group.

C is incorrect as it is a rule set out by the leaders of a club, not a cultural norm.

D is incorrect as it is a rule set by a school that may discriminate.

## Question 25

*Answer:* ***C***

**Explanatory notes**

A is incorrect as group size is a factor affecting conformity, not obedience.

B is incorrect as the type of environment and social status are not named factors affecting obedience.

C is correct as it names all three major factors.

D is incorrect as frequency of punishment is not a factor impacting obedience.

## Question 26

*Answer:* ***D***

**Explanatory notes**

A and B are incorrect as they only include part of the meaning of 'proximity'.

C is incorrect as it confuses the two individuals/groups between whom proximity is relevant.

D is correct as it acknowledges both physical and social proximity as relevant.

**Note:** Some resources define 'social proximity' differently. However, the parent term 'proximity' can be considered to relate to both physical and relationship-based proximity.

## Question 27

*Answer:* ***C***

**Explanatory notes**

A and B are incorrect as these both imply that the participants in the study may have, by chance, been given the role of the person taking the quiz, the 'student'. This is not possible, as the deception in the study required the student to act out a role to deceive the shock administrator.

C is correct. The participant had to be the shock administrator because the study was attempting to determine how far a participant would go in administering shocks they believed they were inflicting on someone else. The learner was a confederate.

D is incorrect as this study would not have worked if the participant was sitting the quiz.

## Question 28

*Answer:* ***C***

**Explanatory notes**

A is incorrect as it mixes up the teachers and the learners in Milgram's experiment

B and D are incorrect as they do not reflect an accurate understanding of the way that the experiment was conducted and the results recorded.

C is correct as it accurately describes that 26 out of the 40 (65%) of the participants in the original study delivered (fake) electric shocks until the top listed voltage of 450 volts.

*TIP*

» **It is not often in VCE Psychology that you need to recall the results of specific studies. Milgram's obedience study and Asch's conformity study are probable exceptions.**

## Question 29

*Answer:* ***A***

**Explanatory notes**

A is correct as Asch found that group size positively affects conformity up to a maximum of four (beyond this, the effect is not significant and may decrease beyond 15), and group unanimity also positively influences conformity.

B is incorrect as although divided groups and groups larger than four show lower rates of conformity, there is no set size that delivers the 'least likelihood' of conformity.

C is incorrect as group size does not positively impact conformity beyond a size of four.

D is incorrect as group size is also a factor, not just unanimity.

## Question 30

*Answer:* ***B***

**Explanatory notes**

A is incorrect as it inverts the meaning of obedience and conformity.

B is correct as it accurately describes that obedience is following an order (compliance), irrespective of agreement, whereas conformity is about fitting in with a group.

C is incorrect as both concepts are (technically) voluntary, although individuals may feel pressure to obey or conform.

D is incorrect as although obedience involves following rules (whether or not you disagree), and conformity can involve changing cognition, conformity does not reflect agreement with laws, but rather social norms.

## Question 31

*Answer:* ***B***

**Explanatory notes**

A and C are incorrect as they involve an order and potential obedience, not conformity.

B is correct as it involves an individual going along with a group of peers (changing behaviour but not cognition).

D is incorrect as it shows an individual who is not conforming.

## Question 32

*Answer:* ***A***

**Explanatory notes**

A is correct as social comparison involves assessing one's own value by comparing to others, often seen in the media.

B, C and D are incorrect as they describe other forms of comparison but not social comparison of ourselves to others in media contexts.

## Question 33

*Answer:* ***B***

**Explanatory notes**

A is incorrect as selective access that reinforces beliefs is a negative impact of digital media.

B is correct as diversity of sources being accessible can be a strength.

C is incorrect as although it is a true statement, it relates to social connection rather than information access.

D is a negative impact and is incorrectly expressed.

## Question 34

*Answer:* ***D***

**Explanatory notes**

A and B are incorrect as these are positive influences. A is an accurate effect of social media, whereas B is not.

C is incorrect as although social media may negatively affect in-person networks for some individuals, it does not 'eliminate' the need for them.

D is correct as online connections are usually not as deep as in-person connections can be.

## Question 35

*Answer:* ***B***

**Explanatory notes**

A is incorrect as independence does not promote consensus decisions.

B is correct as allowing for a diversity of opinions does enhance problem-solving by the group.

C is incorrect as provoking disagreement does not support group cohesion (even if it may support better decision-making overall).

D is incorrect as independence encourages a variety of viewpoints.

### Question 36

*Answer:* ***C***

**Explanatory notes**

A is incorrect as anti-conformity supports self-confidence, not undermines it.

B is incorrect as anti-conformity and self-confidence are interrelated.

C is correct as establishing and asserting one's own beliefs promotes confidence.

D is incorrect as anti-conformity is a deliberate act against the group.

### Question 37

*Answer:* ***C***

**Explanatory notes**

A and B are incorrect as these describe characteristics that would reduce the likelihood of anti-conformity.

C is correct as a belief in individualism would encourage independence in decision-making such that anti-conformity may occur.

D is incorrect as although the statement is true that this would encourage anti-conformity, this is a 'situation' rather than a 'characteristic'.

## Short-answer questions

### Question 1a.

**Sample response**

Dispositional attribution

**Mark allocation:** 1 mark

- 1 mark for 'dispositional', 'internal' or 'personal' attribution (all are synonymous key terms for this concept)

## Question 1b.

**Sample response**

> Sarah may be making a fundamental attribution error. Instead of Mark being lazy, it could be that Mark has a medical condition that means he needs to go to the toilet frequently.

**Mark allocation:** 2 marks

- 1 mark for stating 'fundamental attribution error'
- 1 mark for providing one possible situational attribution for Mark (any reasonable response is acceptable)

*TIP*

» **This is another example where the question phrasing can guide you to the answer. By asking what type of 'attributional error', this allows you to zoom in on one of fundamental attribution error, actor-observer bias or self-serving bias, as these are the three errors or biases that are related to attribution.**

## Question 1c.

**Sample response**

> Sarah may place less value on Mark's opinions or contributions to the team meeting and may decide not to listen to his ideas or give him important tasks to do because of this bias.

**Mark allocation:** 2 marks

- 1 mark for referring to Sarah giving less weight or value to Mark's contributions
- 1 mark for suggesting a possible decision that Sarah may make as a result

## Question 2

**Sample response**

> Society places expectations of behaviour on us in the form of social norms, which are shared standards of acceptable behaviour. We therefore adapt our behaviour to fit the expectations of our social group. For example, in Japan, removing one's shoes upon entering a building is a social norm.

**Mark allocation:** 3 marks

- 1 mark for providing a definition of social norms
- 1 mark for explaining that we adapt our behaviour to suit these cultural and/or social expectations
- 1 mark for any appropriate example of a social norm

## Question 3a.

**Sample response**

> Affective: Husna has a passion for the environment
>
> Behavioural: Purchasing a non-environmentally friendly car
>
> Cognitive: Believes in reducing her carbon footprint

**Mark allocation:** 3 marks

- 1 mark for correct affective component
- 1 mark for correct behavioural component
- 1 mark for correct cognitive component (can also accept belief/thought of car not being environmentally friendly, believing it is necessary for safety/family trips)

## Question 3b.

**Sample response**

> Husna may experience cognitive dissonance because her behaviour (buying a non-environmentally friendly car) is mismatched with her affective (passion for environment) and cognitive components (reducing footprint).

**Mark allocation:** 1 mark

- 1 mark for correct reference to a mismatch between at least two components as indicated in **part a.** (no reference to the scenario is required as long as the answer is congruent to the student's answer in **part a.**)

## Question 3c.

**Sample response**

> Husna could use confirmation bias by choosing to only focus on information that matches her existing beliefs; for example, she might choose to focus on the fact that this is a car they need for family trips, and that battery-powered cars also have an environmental cost.

**Mark allocation:** 2 marks

- 1 mark for providing the definition and key term of confirmation bias (or attentional bias)
- 1 mark for an example of how Husna will use this bias in this scenario (any reasonable example that shows Husna focusing on beliefs that prevent her from feeling dissonant about the purchase is acceptable)

## Question 4a.

**Sample response**

> Affect heuristic

**Mark allocation:** 1 mark

- 1 mark for providing the key term 'affect heuristic'

## Question 4b.

**Sample response**

> A positive outcome is that Maria may be able to quickly pivot the way she is presenting information, which may allow her to have a more positive interaction with Linh. A negative outcome could be that she is mistaken about Linh's emotions and may have unnecessarily changed her presentation style, which may negatively affect her presentation.

**Mark allocation:** 2 marks

- 1 mark for explaining one positive outcome
- 1 mark for explaining one negative outcome

**Note:** Student must clearly label the positive and negative outcomes. No marks should be awarded if these are not signposted.

## Question 5a.

**Sample response**

> Discrimination

**Mark allocation:** 1 mark

- 1 mark for stating 'discrimination' as a key term

## Question 5b.

**Sample response**

> Direct discrimination is where an individual experiences different treatment based on their membership of a group. This is shown by Jane being rejected from the job because of her disability.
>
> Indirect discrimination is where an individual is negatively affected by rules that are applied equally to everyone. This is shown by the expectation that all employees engage in 'walk and talk' meetings, although this would be much harder/impossible for Jane to do.

**Mark allocation:** 3 marks

- 1 mark for stating the key terms 'direct' and 'indirect' discrimination
- 1 mark for providing a direct discrimination example (and linking to key term)
- 1 mark for providing an indirect discrimination example (and linking to key term)

*TIP*

» **'Classify' is a less common command term in Psychology, but it does appear from time to time. 'Classify' tells you that there will be a category that you can fit the information in the question into – usually using key terms you have learned: in this case, direct versus indirect discrimination.**

## Question 5c.

**Sample response**

> Jane is experiencing self-stigma in this scenario, as she has internalised this prejudice and begun questioning her professional abilities (i.e. her self-worth) as a result of experiencing discrimination.

**Mark allocation:** 2 marks

- 1 mark for stating 'self-stigma'
- 1 mark for explaining self-stigma in the context of Jane internalising doubts about her professional ability

## Question 6

**Sample response**

> Prejudice is a negative attitude towards members of a particular group, whereas discrimination is an unfair behaviour towards members of a particular group because of prejudice; for example, not giving an older person a job (discrimination) because of the attitude that older people are less useful in the workplace (prejudice).

**Mark allocation:** 3 marks

- 1 mark for an explanation of prejudice (i.e. that it is a negative attitude)
- 1 mark for an explanation that discrimination is a *behaviour* that occurs (due to prejudice)
- 1 mark for an appropriate example that includes both discrimination and prejudice

## Question 7a.

**Sample response**

> The 'community event' group may show a greater reduction in prejudice because they are working towards a *superordinate goal*, whereas the 'art class' group are not. A superordinate goal is a goal that requires the cooperation of two or more groups to achieve it. In this case, the students who have been disciplined for prejudice and the students of a different cultural background must work together to plan and coordinate the community event, which helps to break down barriers between the groups and reduces prejudice by emphasising shared goals and mutual interdependence.

**Mark allocation:** 3 marks

- 1 mark for stating that the community event group has a superordinate goal, and the art class does not
- 1 mark for defining 'superordinate goal' and describing the superordinate goal in this scenario
- 1 mark for explaining how superordinate goals reduce prejudice

**Note:** The definition and application to the scenario may be integrated in the response.

*TIP*

» **This phrasing of 'with reference to' is common in Psychology – it gives you a strong clue that your answer must be phrased around that particular concept. As you can see here, all three marks link to superordinate goals.**

## Question 7b.

**Sample response**

> Education, which works to reduce prejudice by teaching the students previously disciplined for prejudice/discrimination about the importance of all groups being treated equally

**Mark allocation:** 2 marks

- 1 mark for 'education'
- 1 mark for explaining how education reduces prejudice

**Note:** 'Intergroup contact' may also be accepted (although note that intergroup contact is likely to need to be more meaningful than described in the scenario to be effective at reducing prejudice).

## Question 8a.

**Sample response**

> The students are more likely to follow the instructions of the principal because she has greater 'legitimacy of authority' in her role as principal and is therefore higher in the social hierarchy than the substitute teacher.

**Mark allocation:** 2 marks

- 1 mark for stating 'legitimacy of authority'
- 1 mark for linking the principal as having more authority/power/higher position in hierarchy than substitute teacher

## Question 8b.

**Sample response**

> Social proximity

**Mark allocation:** 1 mark

- 1 mark for stating the key term 'social proximity'

## Question 9a.

**Sample response**

> The aim was to investigate how far participants would go in obeying an authority figure.
>
> **OR**
>
> The aim was to investigate if participants would show obedience to an authority figure that asked them to inflict pain on another person.

**Mark allocation:** 1 mark

- 1 mark for identifying an aim similar to those stated in the sample response

**Note:** The aim should include the independent variable and the dependent variable and must be phrased as a statement.

## Question 9b.

**Sample response**

> Milgram deceived participants into believing that there was a random allocation into the roles of teacher versus learner when there was not. He further deceived participants into thinking they were delivering an electrical shock when they were not.
>
> After the experiment, Milgram engaged in a debriefing process, where participants were told the true nature of the experiment, and misconceptions about the experiment (such as the learner's identity as a confederate, the fake electric shocks) were corrected.

**Mark allocation:** 4 marks

- 2 marks for any two of the following points (1 mark per point)
  - That the participants believed they were randomly allocated to the role of teacher
  - That the participants believed they were inflicting a shock when they were not
  - That the 'learner' was not a participant but a confederate
  - That the aim of the study was not to investigate punishment on learning but obedience to authority
- 1 mark for stating 'debriefing'
- 1 mark for outlining that debriefing corrected misconceptions about the experiment after the experiment (specific details not required)

## Question 9c.

**Sample response**

> This influence on obedience is called social proximity. Generally, the closer the learner (confederate) is to the teacher (participant), the more likely the teacher will refuse to administer the shock.

**Mark allocation:** 2 marks

- 1 mark for identifying 'social proximity'
- 1 mark for explaining that the closer the learner is to the teacher, the more likely they are to refuse the experimenter's request

## Question 9d.

**Sample response**

> The physical distance between the teacher and the experimenter could be varied.

**Mark allocation:** 1 mark

- 1 mark for stating variance in physical distance between teacher and experimenter
- Alternative: Students could also refer to the closeness of relationship between the person giving orders and the person receiving orders.

## Question 9e.

**Sample response**

> The white lab coat the experimenter wore increased their apparent legitimacy.
>
> **OR**
>
> The name badge the experimenter wore increased apparent legitimacy.
>
> **OR**
>
> The clipboard the experimenter used increased apparent legitimacy.
>
> **OR**
>
> Stating that they worked at the university increased apparent legitimacy.

**Mark allocation:** 1 mark

- 1 mark for identifying any one of the factors mentioned in the sample response

## Question 10

**Sample response**

obedience, conformity

**Mark allocation:** 2 marks

- 1 mark each for identifying these terms, in the correct position

## Question 11a.

**Sample response**

Factor influencing decision-making: groupthink

Factor influencing conformity: informational influence

**Mark allocation:** 2 marks

- 1 mark for stating 'groupthink' (all of the students agree on the approach and steps to take)
- 1 mark for stating 'informational influence' (Min-jae is able to provide information to the group about the historical situation, which affects the probability they will conform and produce the task the way they do)

## Question 11b.

**Sample response**

Social norms within the group usually promote consensus and peaceful decision-making, so all individual students are likely to agree with the majority view to avoid conflict and social exclusion from their friendship group.

**Mark allocation:** 2 marks

- 1 mark for social norms of consensus and peaceful decision-making
- 1 mark for individuals' behaviour to conform to the majority view to avoid conflict

**Note:** Other social norms may be presented, such as 'deferring to a person who has the right information' or 'all contributing to a group piece of work'.

## Question 11c.

**Sample response**

> Each student has gone along with the group, and each is contributing and working together on the task with the same approach. In this way, they are 'fitting in' or matching their behaviours (and thoughts and feelings) to that of the group.

**Mark allocation:** 2 marks

- 1 mark for indicating that all students are completing the same task / same behaviour of working on the assignment
- 1 mark for describing that this shows matching behaviours (and thoughts and feelings)

## Question 11d.

**Sample response**

> At the end, all students are 'more convinced' they know right and wrong in the context of the conflict; this shows that they have 'shifted' or moved their opinions to a more extreme/firmer point of view than at the start.

**Mark allocation:** 2 marks

- 1 mark for correctly referencing an example from the scenario
- 1 mark for stating that views have shifted to a more extreme/more absolute viewpoint

## Question 12

**Sample response**

> Maria is probably showing social loafing, which is a tendency to make less effort if involved in a group activity than when alone.

**Mark allocation:** 2 marks

- 1 mark for identifying social loafing
- 1 mark for explaining that less effort is made in a group situation than when alone

## Question 13

**Sample response**

Raine may be being affected by deindividuation/anonymity, which can lead to abnormal behaviours due to an individual's feeling of anonymity.

**OR**

Raine may be being affected by peer pressure, which is the pressure to behave according to how others are behaving.

**Mark allocation:** 2 marks

- 1 mark for identifying deindividuation/anonymity or peer pressure
- 1 mark for describing deindividuation/anonymity or peer pressure in relation to the scenario

**Note:** The description of the factor must be congruent with the identified factor to get full marks (e.g. students cannot identify deindividuation but describe peer pressure).

## Question 14

**Sample response**

Vedant is probably using a representative heuristic. Based on his past experience, an elderly person sitting on the ground on a pathway/nature strip would appear to be a sign of distress, so he offers to help.

**Mark allocation:** 2 marks

- 1 mark for identifying representative heuristic
- 1 mark for describing representative heuristic in the context of the scenario

## Question 15

**Sample response**

Independence refers to Laura's ability to make her own decisions based on her personal values, rather than simply following societal or legal norms. Despite the logging company having legal authorisation for the project, Laura's personal belief in conservation and the preservation of nature led her to take action that went against the law.

Anti-conformity describes Laura's rejection of the majority or dominant societal behaviour, in this case, the logging company being allowed to cut down the forest. By attending the protest and preventing the work, she actively opposed the conformity of society's acceptance of the logging project and chose to take an unconventional stance that aligned with her personal beliefs about the environment.

**Mark allocation:** 4 marks

- 1 mark for describing independence
- 1 mark for explaining how independence can explain Laura's behaviour
- 1 mark for describing anti-conformity
- 1 mark for explaining how anti-conformity can explain Laura's behaviour

## Question 16a.

**Sample response**

> Social comparison

**Mark allocation:** 1 mark

- 1 mark for stating 'social comparison'

## Question 16b.

**Sample response**

> One negative consequence of social comparison through media on Prasit's mental wellbeing is decreased self-esteem. As Prasit compares his appearance to the influencers' unrealistic beauty standards, he may feel inadequate or dissatisfied with his own body. This can lead to feelings of insecurity and self-doubt, negatively affecting his overall mental health and sense of self-worth.

**Mark allocation:** 2 marks

- 1 mark for identifying decreased self-esteem
- 1 mark for outlining how this may affect his mental health

## Question 17

**Sample response**

> Social media is acting as a positive influence on Lena's wellbeing by providing her with a sense of belonging and connection to like-minded individuals. Through the online community, Lena connects with people who share her experiences, which reduces her feelings of isolation and helps her build resilience.

**Mark allocation:** 2 marks

- 1 mark for outlining how social media is connecting Lena to like-minded individuals
- 1 mark for explaining how this connection may support her mental health/wellbeing

# Unit 2 | Area of Study 2 What influences a person's perception of the world?

## Multiple-choice questions

### Question 1

*Answer:* ***D***

**Explanatory notes**

A is incorrect as divided attention would involve trying to listen and read at the same time.

B is incorrect because sustained attention doesn't fully explain why other stimuli are ignored.

C is incorrect because attentional focus is not a relevant term.

D is correct because selective attention involves focusing on one stimulus (the book) and filtering out others (the voice).

### Question 2

*Answer:* ***B***

**Explanatory notes**

A is incorrect as listening to instrumental music typically doesn't interfere much with typing (no language processing conflict).

B is correct as both driving and phone conversations require cognitive resources and could be considered complex processes.

C is incorrect as closed captions support the audiovisual, so they typically help understanding.

D is incorrect as stirring and talking use different cognitive and motor skills, making it easier to divide attention between them.

### Question 3

*Answer:* ***C***

**Explanatory notes**

A is incorrect as multitasking involves divided attention, not sustained.

B is incorrect as shifting between tasks relates more to divided attention.

C is correct as sustained attention refers to maintaining consistent focus on a task or stimulus for an extended duration, which is easier when we find the task engaging or interesting.

D is incorrect as sustained attention is a common cognitive function and is not limited by intelligence level.

### Question 4

*Answer:* ***C***

**Explanatory notes**

A is incorrect as reflexes are automatic bodily reactions, not related to perception.

B is incorrect as raw sensory input underpins bottom-up processing.

C is correct as top-down processing draws on memory, knowledge and expectations to interpret stimuli.

D is incorrect as unfamiliar information is likely to be processed by means of bottom-up processing.

### Question 5

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this is what occurs when we use top-down processing.

B is correct as bottom-up processing is when perception is driven solely by the raw sensory input, without prior knowledge.

C is incorrect as it describes errant use of perceptual set.

D is incorrect as this is an example of top-down processing, where existing understanding is applied to new and familiar stimuli.

## Question 6

*Answer:* ***A***

**Explanatory notes**

A is correct as the retina is the structure that contains photoreceptors.

B, C and D are incorrect as light passes through/inside these structures to enter the eye.

## Question 7

*Answer:* ***C***

**Explanatory notes**

A is incorrect as cones are photoreceptors, not feature detectors.

B is incorrect as it describes the other type of photoreceptor, rods.

C is correct as this is an accurate description of cones.

D is incorrect as it mixes the description of rods and cones together.

## Question 8

*Answer:* ***D***

**Explanatory notes**

A is incorrect as this outlines the process of transmission.

B is incorrect as it incorrectly categorises transduction as perception rather than sensation.

C is incorrect as feature-detector cells are in the brain and are part of the process of selection.

D is correct as rods and cones detect light and convert it to electrochemical (neural) messages that can be interpreted by the brain.

## Question 9

*Answer:* ***A***

**Explanatory notes**

A is correct as this accurately describes how convergence works based on muscle tension in the eyes as they turn inwards.

B is incorrect as accommodation would involve the lens bulging as an object comes closer.

C is incorrect as pictorial cues are a psychological depth cue.

D is incorrect as although retinal disparity could be used and is described correctly, it is miscategorised as a monocular cue, rather than a binocular cue.

## Question 10

*Answer:* ***C***

**Explanatory notes**

A is incorrect as convergence involves the muscles that control eye movement, not the ciliary muscles.

B is incorrect as retinal disparity involves the brain's detection of differences in the images presented to each eye.

C is correct as accommodation involves the bulging or flattening of the lens by ciliary muscles.

D is incorrect as motion parallax refers to different objects appearing to move at different rates across a frame of reference based on distance.

### TIP

» **A common misunderstanding for students in this area is not knowing the difference between ciliary muscles that control the lens bulging/flattening (as mentioned in this question), and the muscles that control eye movement, which we feel tension in when eyes turn inwards due to convergence (see Question 9). Make sure you can clearly differentiate between these when writing an answer.**

## Question 11

*Answer:* ***B***

**Explanatory notes**

A is incorrect as closure involves closing gaps in an outline to form a perception of the whole object.

B is correct as we focus on the spots as the 'figure' and the skin as the 'ground'.

C is incorrect as although we may use proximity to group the spots together on the basis of their closeness, this is not what is described in the question stem.

D is incorrect as although the spots are similar to each other in colour and sometimes shape, this is not what the question is focused on.

## Question 12

*Answer:* ***B***

**Explanatory notes**

A is incorrect as its relative size shows that similar-sized objects closer to us will cast a larger retinal image, not smaller.

B is correct as it accurately describes relative size.

C is incorrect as relative size relates to how objects which are in reality similarly sized appear smaller or larger.

D is incorrect as while this may be what occurs if the more distant towers were taller, this is not evident in the image as the more distant towers appear smaller.

*TIP*

» **Make sure you clearly understand that relative size is used to tell the distance of two similar-sized objects – it is only valid for one object to be perceived as further away due to having a smaller retinal image if both objects are meant to be a similar size.**

## Question 13

*Answer:* ***D***

**Explanatory notes**

A is incorrect as an object further away appears closer to the horizon.

B is incorrect as the height in the visual field does not link to which part of the object are visible.

C is incorrect as level of detail links to texture gradient, rather than height in the visual field.

D is correct as objects further away will appear closer to the horizon.

## Question 14

*Answer:* ***D***

**Explanatory notes**

A is incorrect as both doors appear to have similar lighting conditions and will cast similar retinal images.

B is incorrect as there is no context provided for the doors and this does not explain why we would compare the doors.

C is incorrect as interposition would not allow us to compare the doors to each other.

D is correct as shape constancy allows us to perceive an object as staying the same shape even when viewed from a different angle.

## Question 15

*Answer:* ***B***

**Explanatory notes**

A is incorrect as brightness constancy is used to determine that images are similar, not to differentiate between pot and plant colour.

B is correct as our past experience is what guides us to believe that the plant is green, despite not being able to 'see' this on the page.

C is incorrect, as texture gradient cannot tell us anything about the colour of the object.

D is incorrect, as selection will occur, but does not relate to our interpretation of it as being green.

## Question 16

*Answer:* ***D***

**Explanatory notes**

A is incorrect as bottom-up processing requires that we only use the stimuli received to construct meaning, and perceiving it as 'green' requires use of existing knowledge.

B is incorrect as reception is a common step and is part of sensation, so is not used to give meaning to the plant as being green.

C is incorrect as both bottom-up and reception are incorrect (see A and B).

D is correct as we are using top-down processing and existing knowledge of plants being green to help us interpret that the image is showing a green plant.

## Question 17

*Answer:* ***C***

**Explanatory notes**

A is incorrect because motivation is a psychological factor influencing perception.

B is incorrect because emotion is a psychological factor affecting how we perceive stimuli.

C is correct because cultural background is a social factor that shapes how we interpret visual information.

D is incorrect because context can be influenced by both psychological and social factors.

## Question 18

*Answer:* ***A***

**Explanatory notes**

A is correct as cultural factors influence whether participants associate rabbits with 'Easter'. If participants are from countries/cultures where Easter is not celebrated, this would not influence their perception.

B is incorrect as motivation is not relevant to their perception here.

C is incorrect as bottom-up processing would rely only on raw sensory input.

D is incorrect as emotion is not relevant to their perception here.

## Question 19

*Answer:* ***A***

**Explanatory notes**

A is correct because this is a clear case of perceptual set, where the context in which the image is viewed (surrounded by Easter-related images) has influenced perception.

B is incorrect because binocular cues involve depth perception using both eyes, not interpretation based on prior experience.

C is incorrect because bottom-up processing would rely only on raw sensory input.

D is incorrect because motivation is not relevant to their perception here.

## Question 20

*Answer:* ***B***

**Explanatory notes**

A is incorrect as illusions do not bypass the retina; they rely on normal sensory input.

B is correct as visual illusions highlight how the brain sometimes misinterprets visual stimuli, revealing the fallibility of perception.

C is incorrect as illusions are safe to view and cause no damage.

D is incorrect as illusions are processed by the visual cortex just like other images; they don't block information.

## Question 21

*Answer:* ***B***

**Explanatory notes**

A is incorrect as copying an object but not naming it describes associative agnosia.

B is correct as individuals with apperceptive visual agnosia struggle to assemble visual features into a complete form, making it difficult to perceive shapes.

C is incorrect as this relates more to semantic memory issues, not visual perception.

D is incorrect as colour blindness affects colour perception, not object recognition.

## Question 22

*Answer:* ***B***

**Explanatory notes**

A is incorrect as the optic nerve transmits visual information.

B is correct as the facial nerve is the conduit for neural messages to the gustatory cortex.

C is incorrect as it describes the process of transduction.

D is incorrect as the messages that are sent to the gustatory cortex are electrochemical or neural messages, not chemical.

## Question 23

*Answer:* ***C***

**Explanatory notes**

A is incorrect as supertasters are more sensitive, not less.

B is incorrect as supertasters have more taste buds, not fewer.

C is correct as supertasters are highly sensitive to bitter tastes, such as in coffee or broccoli.

D is incorrect as supertasters can taste all flavours, just more intensely, not selectively lose umami.

## Question 24

*Answer:* ***A***

**Explanatory notes**

A is correct as miraculin binds to sweet receptors, making sour foods (such as lemons) taste sweet.

B is incorrect as miraculin enhances sweet perception, not bitterness.

C is incorrect as miraculin does not eliminate bitterness; it alters sweetness perception.

D is incorrect as miraculin does not cause a spicy sensation.

## Question 25

*Answer:* ***B***

**Explanatory notes**

A is incorrect as perceptual set is a psychological factor and culture is social.

B is correct as genetics is a biological factor, perceptual set relates to psychological processing of information, and culture is an external factor that influences us.

C is incorrect as perceptual set does not rely on biological elements, and age affects the biology of the mouth and is not an external factor.

D is incorrect as genetics affects the biology of the mouth (e.g. taste buds).

## Question 26

*Answer:* ***B***

**Explanatory notes**

A is incorrect as there is no concept of 'gustatory illusions' in the same way as optical illusions.

B is correct as prior experience creates a perceptual set, leading people to expect certain flavours, which can influence or distort taste judgement.

C is incorrect as flavour involves a combination of senses, not just vision.

D is incorrect as muscle memory does not influence flavour recognition.

## Question 27

*Answer:* ***D***

**Explanatory notes**

A and B are incorrect as sensitivity to flavours generally indicates a greater number of tastebuds, so statement I is not accurate. Poppy, being less sensitive, may have genetically fewer taste buds than Liam, rather than more.

C is incorrect as II is an accurate statement, but so is III.

D is correct as statement II is plausible – cultural factors and past experience of these foods from a young age may explain why Nishka is less sensitive to spice than Patrick. Statement III is also plausible as generally individuals have more taste buds when younger, and thus are more sensitive to taste (this decreases with age).

## Question 28

*Answer:* ***B***

**Explanatory notes**

A is incorrect as Jaya's surprise is not based on any biological influence on her perception.

B is correct as Jaya's expectation would have been that the big red strawberry would be sweet and delicious, and not sour, based on her prior experience of what ripe, delicious strawberries look like.

C is incorrect as her emotions are not a social factor, and are a result of the taste, not the trigger of the taste perception.

D is incorrect, as this describes perceptual set, not cultural factors.

## Question 29

*Answer:* ***B***

**Explanatory notes**

A is incorrect as this describes a visual illusion, not synaesthesia.

B is correct as synaesthesia involves cross-activation of senses, such as seeing colours when hearing sounds.

C is incorrect as that refers to anosmia and ageusia, not synaesthesia.

D is incorrect as individuals with synaesthesia have cross-activation of senses so both sensations are experienced.

## Question 30

*Answer:* ***C***

**Explanatory notes**

A is incorrect as that would be lexical–gustatory synaesthesia, not grapheme–colour.

B is incorrect as it is not grapheme-related (written) but chromesthesia (sound-colour).

C is correct as grapheme–colour synaesthesia involves seeing letters or numbers as inherently coloured.

D is incorrect as anxiousness from loud music could reflect misophonia.

### Question 31

*Answer:* ***B***

**Explanatory notes**

A is incorrect as spatial neglect does not affect colour vision.

B is correct as damage to the right parietal lobe often causes neglect (ignoring) of the left visual field, even though the eyes can still see.

C is incorrect as this implies attention being oriented to the left side, which is not a feature of left neglect.

D is incorrect as neglect typically affects vision, not hearing. Although multimodal neglect can occur, this is also incorrect because damage to the right side of the brain affects the left side of the body, not the right.

### Question 32

*Answer:* ***D***

**Explanatory notes**

A is incorrect as although synaesthesia is typically present from early life, this in itself does not explain why it is a perceptual distortion.

B is incorrect as hallucinations involve false sensory experiences, whereas synaesthesia is triggered by real stimuli.

C is incorrect as sensory receptors are not faulty; the perception arises in the brain, not the sense organs.

D is correct because synaesthesia involves consistent and involuntary sensory cross-activation, but is not harmful or inherently problematic, making it a perceptual distortion rather than a 'disorder'.

## Short-answer questions

### Question 1a.

**Sample response**

Sustained attention

**Mark allocation:** 1 mark

- 1 mark for stating 'sustained attention'

## Question 1b.

**Sample response**

> Sustained attention allows Jackson to maintain his focus on the exam for an extended period of time. This allows him to work consistently on the content in the exam and avoid distractions, improving performance.

**Mark allocation:** 2 marks

- 1 mark for defining 'sustained attention'
- 1 mark for linking maintaining focus with improved performance on exam

## Question 1c.

**Sample response**

> Amir is likely to be experiencing fatigue from doing three exams in one day, so may find it harder to maintain sustained attention.

**Mark allocation:** 1 mark

- 1 mark for outlining fatigue as a likely factor that has reduced Amir's ability to focus

**Note:** Other factors are acceptable provided they link to the scenario. This could include factors such as emotional state, anxiety, complexity of task, reward, or expectations about outcome.

## Question 2

**Sample response**

> Ali is using divided attention by splitting his focus simultaneously between playing soccer with his son and his cooking duties. Using divided attention is usually less successful for complex or unfamiliar tasks that require higher cognitive effort than simple, familiar tasks. If cooking and playing with his son is something Ali regularly does together, then he may be able to complete the tasks with no negative impact. However, if he does not regularly cook dinner or if it is a complicated recipe, he may be more likely to make mistakes such as burning food or not hearing a timer while trying to also play with his son.

**Mark allocation:** 4 marks

- 1 mark for describing how Ali is dividing his attention simultaneously between son and cooking
- 1 mark for explaining that divided attention is more challenging for complex/unfamiliar tasks than for simple/familiar tasks
- 1 mark for explaining why Ali may be successful – if for him this is familiar/simple
- 1 mark for explaining why Ali may be unsuccessful/less successful – if for him this is complex/unfamiliar

## Question 3a.

**Sample response**

> Top-down processing

**Mark allocation:** 1 mark

- 1 mark for identifying top-down processing

## Question 3b.

**Sample response**

> Leila's expectations based on the context of the lecture led her to assume the image was a lion. Her brain used prior knowledge rather than relying on detailed analysis of the visual features.

**Mark allocation:** 2 marks

- 1 mark for outlining that Leila's expectations guided assumptions about the content of the image
- 1 mark for outlining that she has used prior knowledge in preference to analysing the details of the visual stimulus

## Question 3c.

**Sample response**

> Bottom-up processing would involve carefully examining the size, ears and spots of the animal to identify it as a leopard (or at least as 'not a lion') based on visual stimulus rather than expectations.

**Mark allocation:** 3 marks

- 1 mark for correctly identifying 'bottom-up processing'
- 1 mark for outlining that bottom-up processing would involve carefully analysing the visual stimuli in the picture (examples may be provided but are not required)
- 1 mark for outlining that Leila would use these features to determine that the animal is not a lion or is a leopard

## Question 4a.

**Sample response**

> Reception: Light reflects off the bricks of the wall and enters the eye, passing through the lens and focusing onto the retina.
>
> Transduction: Photoreceptor cells (rods and cones) in the retina convert the light energy into neural impulses.
>
> Transmission: These neural signals are sent along the optic nerve to the visual cortex in the brain.
>
> Organisation: The visual cortex organises the information by using perceptual principles (such as figure–ground and proximity) to group the drainage holes, crest and archway into a meaningful shape.
>
> Interpretation: The brain uses past experiences and context to give meaning to the image as a face, even though it is actually an opening in a wall.

**Mark allocation:** 5 marks

- 1 mark for correctly describing reception (must include light, lens and retina)
- 1 mark for correctly describing transduction (must include photoreceptors, conversion of light to neural messages) or appropriate synonyms
- 1 mark for correctly describing transmission (must include optic nerve and either occipital lobe or visual cortex)
- 1 mark for correctly describing organisation (must include perception principles or specific example to arrange image as a whole)
- 1 mark for correctly describing interpretation (must refer to giving meaning to image as a face)

## Question 4b.

**Sample response**

> Reception, transmission and transduction are 'sensation', while organisation and interpretation are 'perception'.

**Mark allocation:** 1 mark

- 1 mark for correctly categorising all five terms as sensation or perception

*TIP*

» **It is helpful to be able to differentiate between the 'sensation' steps of reception, transmission and transduction, and the 'perception' steps of selection, organisation and interpretation. The 'sensation' steps are common for almost everyone unless a biological factor is having an impact, whereas the 'perception' steps are more individual and thus can be affected by psychological and social factors.**

## Question 5a.

**Sample response**

More detail can be seen in the leaves on the large tree in the middle of the image, and less detail in the small trees, so this shows texture gradient with diminishing detail as the trees recede into distance.

The trees are similar sizes in reality, so relative size allows the tree casting a 'large' retinal image to be perceived as closer than the trees that appear smaller.

The tree that is closer is positioned further away from the horizon, higher in the visual field, than the trees that are further away, which are positioned closer to the horizon.

**Mark allocation:** 3 marks

- 1 mark for a correct description of relative size (can be any example as long as clearly labelled/linked to image)
- 1 mark for a correct description of texture gradient (can be any example as long as clearly labelled/linked to image)
- 1 mark for a correct description of height in visual field (can be any example as long as clearly labelled/linked to image)

**Note:** A maximum of 1 mark can be awarded for generic descriptions or descriptions that are not linked directly to the image.

### TIP

» **A common error when explaining the influence of pictorial cues is to not be specific enough, and to not refer to two different objects in your answer. For example, make sure you identify two different trees in the image, and make a direct comparison between them. You could describe them as being of similar size, but mention that the one with a smaller retinal image is further away than the other tree, which casts a larger image on the retina.**

### Question 5b.

**Sample response**

> Yelena could use motion parallax by comparing the rate at which the different trees appear to move across her vision. Trees that are closer will move across her visual field faster than trees that are further away.

**Mark allocation:** 2 marks

- 1 mark for outlining motion parallax as comparing the rate at which objects move across a visual field
- 1 mark for explaining that closer trees appear to move faster, and more distant trees appear to move slower

### Question 5c.

**Sample response**

> Motion parallax is a monocular depth cue, so the child will still be able to use it with only one eye.

**Mark allocation:** 1 mark

- 1 mark for identifying motion parallax as a monocular cue and for linking to being able to use it with one eye

### Question 5d.

**Sample response**

> Figure–ground could be used here by focusing on the closest tree as the 'figure' and thus the focal point of the image, and the sky and other trees as the 'ground' against which the closest tree stands out.

**Mark allocation:** 2 marks

- 1 mark for outlining the closest tree as the 'figure' to focus on
- 1 mark for outlining other parts of the image as the 'ground' it stands against

### Question 6a.

**Sample response**

> We can see linear perspective in the parallel lines of the edges of the pier gradually coming together as it recedes into the distance.

**Mark allocation:** 1 mark

- 1 mark for outlining the pictorial cue of linear perspective with reference to the pier

## Question 6b.

**Sample response**

> Brightness constancy can be used to understand that the water is still the same colour, just under different lighting conditions in shadow versus sunshine.
>
> Size constancy can be used to understand that the light poles are all the same size (just further away) even though they appear different.

**Mark allocation:** 2 marks

- 1 mark for linking brightness constancy to water in shadow versus sunshine
- 1 mark for linking size constancy to the consistent size of light poles on the pier (the answer may also refer to the wooden planks or metal railing posts on the pier)

## Question 6c.

**Sample response**

> A person who nearly drowned has had a negative past experience, which may change their expectations about what they see. As a result, they may see the crests of waves and perceive the water to be choppy and dangerous, even when it is not.

**Mark allocation:** 2 marks

- 1 mark for identifying and outlining how past experience (a factor of perceptual set) can affect perception
- 1 mark for linking this to a likely negative/dangerous perception of the water

**Note:** Emotion or motivation are also acceptable answers here (emotion – fear of the water can lead to perception of danger; motivation – desire to stay safe and avoid danger).

## Question 7

**Sample response**

> We can use proximity to group the chairs/tables together and view these as separate 'rows' or sections. We can use similarity to group the five statues together as a group (even though they are not close together).

**Mark allocation:** 2 marks

- 1 mark for explaining the use of proximity in the image (could also use chairs grouped together on floor and chairs groups together in gallery/front of room as separate groups)
- 1 mark for explaining the use of similarity in the image (could also refer to dissimilarity of black chairs on floor and grey chairs in background gallery to group legislators and audience)

## Question 8a.

**Sample response**

> Müller–Lyer illusion

**Mark allocation:** 1 mark

- 1 mark for identifying the Müller–Lyer illusion

## Question 8b.

**Sample response**

> The viewer mentally creates a three-dimensional understanding of the lines and arrows as being the edge or corner of a space. In a carpentered world, straight lines with 'arrowheads' can be perceived as the closer edge of an outer wall/boundary of a shape, whereas straight lines with a 'feather-tail' can be perceived as a more distant inner wall/boundary of a shape.

**Mark allocation:** 3 marks

- 1 mark for stating that the viewer forms a three-dimensional mental image
- 1 mark for stating that the arrowhead line is perceived as an outer wall, and so closer
- 1 mark for stating that the feather-tail line is perceived as an inner corner, and so further away

## Question 8c.

**Sample response**

> The Ames room is perceived as a normal rectangular room, but it is actually trapezoidal in shape, with a sloping floor and ceiling and a back wall diagonal to the viewer. The room is viewed as maintaining the rectangular shape through the misapplication of shape constancy. Because of this, the viewer incorrectly perceives a person who walks from one side of the room to the other as changing size while staying the same distance away; thus size constancy is not maintained.

**Mark allocation:** 3 marks

- 1 mark for outlining that the Ames room appears to be rectangular but is actually trapezoidal (or description to this effect)
- 1 mark for outlining that we misuse shape constancy to perceive the room as a rectangle
- 1 mark for explaining that because of the above, we misperceive a person as changing size and therefore breaking size constancy

## Question 9a.

**Sample response**

> Associative visual agnosia

**Mark allocation:** 1 mark

- 1 mark for identifying 'associative' agnosia

## Question 9b.

**Sample response**

> Weng-Yi can accurately describe visual elements of the image, such as the shape of the animal or colour of the couch. However, she is unable to identify the animal as a dog. This suggests that her basic visual sensation and simple processing of information is intact, but that she cannot link it to stored knowledge or meaning to interpret what the whole image means.

**Mark allocation:** 3 marks

- 1 mark for outlining what Weng-Yi can process in the image and for outlining what Weng-Yi cannot do relating to the image (identify it as a dog or what it is doing)
- 1 mark for explaining that basic visual sensation/early processing works (i.e. reception, transduction, transmission, selection/organisation), but that her ability to link this with stored knowledge is impaired
- 1 mark for assessing that she cannot accurately interpret/perceive the meaning of the image

*TIP*

» **Make sure you are linking your response to the question by mentioning specifically what Weng-Yi could/could not do to describe the dog in the image. A generic response that 'content dumps' without linking to the question could not receive full marks.**

## Question 10a.

**Sample response**

> Biological

**Mark allocation:** 1 mark

- 1 mark for identifying taste bud number as a biological factor

### Question 10b.

**Sample response**

> The chemical molecules of the brussels sprout (tastant) enter the taste pores on Tariq's tongue, which contain taste buds. The tastant makes contact with 'bitter' taste receptor cells in the taste bud.

**Mark allocation:** 2 marks

- 1 mark for describing the process of chemical tastant entering taste pore
- 1 mark for describing the contact of the tastant to 'bitter' taste receptor cells in the taste bud

### Question 10c.

**Sample response**

> Tariq is a supertaster. Supertasters have more taste receptors, especially for bitter compounds. This biological difference makes flavours such as bitterness more intense, which can lead to strong aversions to certain foods.

**Mark allocation:** 3 marks

- 1 mark for identifying Tariq as a supertaster
- 1 mark for describing that supertasters have a greater number of taste buds, which leads to greater sensitivity
- 1 mark for linking this to Tariq perceiving the brussels sprouts as more intensely bitter than other people

### Question 11a.

**Sample response**

> Perceptual set – colour intensity **OR** colour

**Mark allocation:** 1 mark

- 1 mark for identifying the factor as colour or colour intensity (subset of perceptual set)

### Question 11b.

**Sample response**

> Mai's brain used the green colour to assume the flavour would be sour, based on past experience with green apple-flavoured foods. This expectation shaped her initial taste perception, before she was surprised to realise it was actually sweet.

**Mark allocation:** 3 marks

- 1 mark for linking colour to her past experience of similarly coloured foods
- 1 mark for describing the mismatch between her expectations and the actual flavour
- 1 mark for explaining how her expectation actually altered her initial perception

## Question 12

**Sample response**

> Miraculin is a biological factor influencing gustatory perception. It binds to the taste receptors on the tongue (especially sweet receptors) and reacts in the presence of sour tastants, activating the bound sweet receptors as a result. Therefore, the brain receives neural messages from sweet receptors and misperceives the food as being sweet rather than sour.

**Mark allocation:** 3 marks

- 1 mark for identifying miraculin as having a biological effect **OR** directly affecting taste sensation (and in turn perception)
- 1 mark for describing that miraculin binds to sweet receptors and activates them when exposed to sour food molecules
- 1 mark for explaining that the brain receives neural messages from these receptors and misperceives the food as sweet (must acknowledge this is an error in perception for full marks)

## Question 13a.

**Sample response**

> Thomasina was expecting the coffee to taste sweet as this is usually how her coffee tastes from this shop, so she did perceive it as being sweet, even though less sugar had been added. This is due to perceptual set and her expectations of the flavour.

**Mark allocation:** 2 marks

- 1 mark for outlining that her expectations were based on past experience at this coffee shop
- 1 mark for explaining that this led her to perceive the coffee as sweet even though less sugar had been added

## Question 13b.

**Sample response**

> (Gustatory–visual) synaesthesia

**Mark allocation:** 1 mark

- 1 mark for identifying synaesthesia

## Question 13c.

**Sample response**

> Synaesthesia can develop due to cross-activation between two different sensory areas of the brain during (often) childhood. In Alex's case, it is likely that there is a cross-activation between the gustatory cortex and their visual cortex or association areas. As a result, coffee is linked to various colours, and they know it is the wrong coffee because they also 'see' the dark red or scarlet when they taste the coffee.

**Mark allocation:** 3 marks

- 1 mark for outlining that synaesthesia develops due to cross-wiring of two sensory areas in the brain
- 1 mark for linking that Alex has a cross-connection between gustatory and visual areas
- 1 mark for linking that when Alex tastes the coffee, they experience the colours as well

## Question 14

**Sample response**

> Individuals with spatial neglect are likely to only draw the right half of the flower, due to damage to the right parietal lobe, which leaves them unable to pay attention to or notice the left half of their visual field.

**Mark allocation:** 3 marks

- 1 mark for an appropriate drawing of half a flower, drawn on the right side with left half of the flower absent or only partially formed
- 1 mark for explaining that individuals with spatial neglect have a damaged right parietal lobe
- 1 mark for explaining that this means they cannot attend to the left half of their world (and therefore only the right half of the flower is drawn)

# Key Science Skills: Part **2**

## Multiple-choice questions

### Question 1

*Answer:* ***B***

**Explanatory notes**

A is incorrect as it reverses the terms.

B is correct. Descriptive data is a form of qualitative data, and numerical data collected via a rating scale is quantitative.

C is incorrect as a rating scale is primary data.

D is incorrect as a description of a perfect day is subjective, not objective.

### Question 2

*Answer:* ***D***

**Explanatory notes**

A and B are both correct, which makes D the most correct answer as it includes both options. An interview is often a series of open-ended questions conducted verbally. It is a form of self-report in which the participant discloses information about himself or herself.

C is incorrect as a questionnaire is a written set of standard questions.

### Question 3

*Answer:* ***D***

**Explanatory notes**

A is incorrect. Open-ended questions are quite often not restrictive and are actually useful in terms of allowing a participant to extend responses.

B is incorrect. The type of data obtained by an interview is usually qualitative data.

C is incorrect. Interviews can be carried out in a confidential manner and should not entail disclosure of a participant's details any more than any other data-collection technique.

D is correct. The detailed, open-ended data obtained is hard to summarise and display (descriptive statistics) and hard to analyse as it usually does not entail quantitative data.

## Question 4

*Answer:* ***C***

**Explanatory notes**

A is incorrect as although sleep diaries can provide qualitative data, sleep duration is quantitative, and movement during sleep is not information a sleep diary can provide.

B is incorrect as sleep diaries do not involve objective data.

C is correct as individual recall of sleep is a form of subjective data collection that includes the listed examples.

D is incorrect as although all the options listed are valid examples of quantitative data, and some sleep diary information can be quantitative, sleep quality is not quantitative.

## Question 5

*Answer:* ***D***

**Explanatory notes**

A is incorrect as the *x*-axis shows the different groups of students with various depression levels, not the number of students, which should be on the *y*-axis.

B is incorrect as high/medium/low groups is not an appropriate axes label as it does not give enough information, and the *y*-axis is not showing mean depression levels but number of students.

C is incorrect as the *x*-axis shows the depression levels grouped, but not the mean level of depression.

D is correct.

## Question 6

*Answer:* ***A***

**Explanatory notes**

A is correct as with the majority of students sitting in a 0–4 band, a score of 7 is clearly higher than the median score (the middle value). It would also be higher than the mean.

B and C are thus incorrect.

D is incorrect as although her score is higher than the median and mean, it is still in the middle of the range of 0–15, and the graph indicates there are a number of students with similar or higher scores, so it is very unlikely to be an outlier.

## Question 7

*Answer:* ***C***

**Explanatory notes**

A is incorrect as it shows the wrong number to divide by (the range rather than the number of scores).

B is incorrect as this uses a subset of the data rather than all of the data.

C is correct as it shows the procedure for calculating a mean (average) score.

D is incorrect as this describes the mode.

## Question 8

*Answer:* ***A***

**Explanatory notes**

A is correct, as the range is numerical, and use of an *x*–*y* scatterplot would make it possible to identify if any values are 'outliers'.

B and C are incorrect, as this graph is a bar chart.

D is incorrect, as although this is a bar chart, use of an *x*–*y* scatterplot is not necessary to calculate a mean score.

## Question 9

*Answer:* ***C***

**Explanatory notes**

A and D are incorrect as they identify the data as secondary, D furthermore because it identifies the data as objective.

B is incorrect as it identifies the data as qualitative, which would need to be descriptive information.

C is correct. The data is subjective (because it is a self-report), quantitative (as it is numerically summarised) and primary (as the data was collected specifically for this study).

## Question 10

*Answer:* ***C***

**Explanatory notes**

A is incorrect as this implies a causal link between mathematics ability and data analysis. Although this may be true, the teacher cannot determine this based on her study as she has not manipulated this as a variable.

B is incorrect as it implies a causal relationship that does not exist. Being in a particular Psychology class does not cause a student to study maths.

C is correct as there may be a positive (or direct) correlation, where as the number of students studying maths increases, so do data analysis skills in the class. However, she would need to break down the data more specifically into those studying maths and those not studying maths to be sure.

D is incorrect as there does appear to be a correlation due to the difference in mean scores between the classes.

## Question 11

*Answer:* ***B***

**Explanatory notes**

A is incorrect as 68% of scores will be within one standard deviation of the mean, and 32% of scores may be beyond this.

B is correct as the standard deviation for Class B (1.8) is higher, which indicates a larger variance from the mean than for Class A (1.3).

C is incorrect as a larger standard deviation suggests it is likely that there is a larger range (although this is not guaranteed).

D is incorrect as the standard deviations do not support such a conclusion on their own. A statistical test would be needed.

## Question 12

*Answer:* ***C***

**Explanatory notes**

A is incorrect as repeatability refers to similarity of scores for the same sample over multiple tests (same conditions).

B is incorrect as there is no information about cultural bias in this test.

C is correct as reproducibility describes the similarity of scores in different conditions, including different samples.

D is incorrect as the fact that teachers' observations validate the measurements supports validity, not repeatability or reproducibility.

## Question 13

*Answer:* ***B***

**Explanatory notes**

A is incorrect as differences in individual scores do not affect external validity.

B is correct as the teachers' observations appear to validate that the test is likely measuring emotional intelligence as it intends to.

C is incorrect as any limitations or cultural biases in the sample will affect external validity, not internal validity.

D is incorrect as the teachers' observations support internal validity, rather than external validity.

## Question 14

*Answer:* ***D***

**Explanatory notes**

A is incorrect as it is a personal error made by the student, and it was corrected.

B is incorrect as it is a random error based on differences in individual participants – they may be an outlier but there is no/low uncertainty about the true value of their stress.

C is incorrect as while there may be some uncertainty about the cause, their score is not an outlier.

D is correct as it shows a change in score likely well outside the mean as well as a reason to be uncertain about the true value of the student's stress level.

## Question 15

*Answer:* ***A***

**Explanatory notes**

A is correct as this is a subjective self-report and there may be random errors in how individuals choose to rate their stress. It is not systematic as it is not consistent or predictable, and not a personal error because it is not a mistake in procedure.

B is incorrect as this is an example of an extraneous/potential confounding variable that is not controlled. Thus it is not a personal error.

C is incorrect as misreading instructions is a mistake in procedure and thus a personal error.

D is incorrect as this is also a personal error due to a mistake in procedure. If it were not noticed, because it could result in score falling or rising, it could also be considered a random error.

## Question 16

*Answer:* ***A***

**Explanatory notes**

A is correct as the lack of manipulation of an IV shows this is correlational in nature.

B is incorrect as the two sets of data collected do not affect the type of study, nor is the Perceived Stress Scale a dependent variable.

C is incorrect as although participants have been measured under different conditions, a range of different methodologies include this.

D is incorrect as this wording applies to the explanation of a case study, not a correlational study.

## Question 17

*Answer:* ***C***

**Explanatory notes**

A is incorrect as the data values are widely varied among participants, which shows low precision.

B and D are incorrect as the use of a calibrated testing apparatus suggests the data should have high accuracy.

C is correct as the values are likely to be accurate at each measurement, but vary over time.

## Question 18

*Answer:* ***A***

**Explanatory notes**

A is correct as high accuracy means that there is internal validity.

B is incorrect as external validity is low due to a small non-random (convenience) sample, that would not represent all individuals.

C is incorrect as the repeatable and reproducible results do not reflect low validity.

D is incorrect as measuring a correlation between stress and cortisol reflects high validity.

## Question 19

*Answer:* ***B***

**Explanatory notes**

A is incorrect as although it may be true, it is not the aim of Dr Henderson's study.

B is correct as this is a correlational study and this correctly describes the correlation.

C is incorrect as it is phrased as cause and effect.

D is incorrect as it is also phrased as cause and effect and does not reflect the aim.

## Question 20

*Answer:* ***D***

**Explanatory notes**

A is incorrect as a within-subjects design is not directly relevant to external validity and thus generalisation.

B is incorrect as elite gymnasts are not likely to be representative of VCE students necessarily.

C is incorrect as repeatability among the same group under the same conditions does not support an evaluation of high external validity and thus generalisation.

D is correct as this is a small, biased, unrepresentative sample, and thus will have low external validity that limits generalisability.

## Question 21

*Answer:* ***B***

**Explanatory notes**

A is incorrect as there is no evidence of informed consent (indeed participants have been recommended by their scholarship provider).

B is correct as there is likely to be no specific harm that comes to participants as a result of this study.

C is incorrect as justice is not related to reporting the result of both conditions, but rather to the reporting of any relevant competing claims or undesired results.

D is incorrect as although non-maleficence has been met, there is no indication that the results are being used in a way to better support and help the participants themselves.

## Question 22

*Answer:* ***B***

**Explanatory notes**

A is incorrect as the test has been conducted in a laboratory setting.

B is the best answer. It would be too dangerous to put a student pilot in an intoxicated state in an actual aircraft, so he has simulated this dependent variable instead.

C is incorrect as this is a valid test of cause and effect.

D is incorrect as this is not an accurate description of a product in this context.

## Question 23

*Answer:* ***B***

**Explanatory notes**

A is incorrect as the flight school is not required to provide informed consent for such a study, just participants.

B is correct, as the negative effects of alcohol intoxication would make it dangerous to the participants (and others) to use a real aircraft.

C is incorrect as this restriction would not have affected Iurgi's ability to report his results.

D is incorrect as, while these factors could affect the robustness of his findings, there are other ways to control for this other than the use of the computer simulation.

## Question 24

*Answer:* ***B***

**Explanatory notes**

A is incorrect as suggestions 1 and 2 do not link to changing the conditions of the study.

B is correct as all three of the suggestion options link robustness to reproducibility. Robustness is when results remain valid across a variety of conditions.

C is incorrect as suggestion 1 is already implied as having been met and does not relate to robustness in any case.

D is incorrect as a correlational study would not improve robustness in this situation.

## Short-answer questions

### Question 1a.

**Sample response**

> If individuals look at objects in high-light conditions, their colour perception will be more accurate than when they look at objects in low-light conditions.

**Mark allocation:** 3 marks

- 1 mark for identifying IV (light conditions)
- 1 mark for identifying DV (colour perception accuracy), including direction
- 1 mark for making a comparison between high-light and low-light conditions

### Question 1b.

**Sample response**

> Avrom is collecting qualitative data because participants are describing the colours they perceive. One limitation of qualitative data is that it is subjective, meaning that each participant's interpretation of colour may differ, leading to inconsistencies or bias in the results. A second limitation is that qualitative data may be difficult or impossible to accurately analyse, with analysis depending on the subjectivity of the researcher.

**Mark allocation:** 3 marks

- 1 mark for identifying qualitative data
- 2 marks for explaining two limitations of qualitative data (1 mark for each):
  - its subjectivity, leading to differing perception/descriptions from participants
  - the fact that subjectivity can be difficult to summarise and compare, particularly when it is in the participants' own words
  - the bias of researcher trying to categorise qualitative data

### Question 2a.

**Sample response**

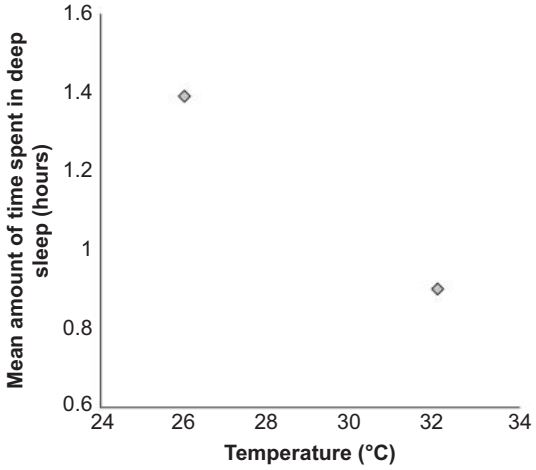
> The data collected is objective because it is measured using an EEG, which provides a direct, unbiased recording of brain activity.
>
> It is quantitative because the amount of time spent in deep sleep is measured in hours, providing numerical data that can be analysed statistically.

**Mark allocation:** 2 marks

- 1 mark for outlining how data is objective
- 1 mark for outlining how data is quantitative

## Question 2b.

**Sample response**




**Mark allocation:** 3 marks

- 1 mark for correctly plotting the data point
- 1 mark for correctly labelling the *x*-axis (including units)
- 1 mark for correctly labelling the *y*-axis (including units)

## Question 2c.

**Sample response**

> An *x*–*y* scatterplot is the correct graph type because it allows Dr Mesley to visually represent the trend/relationship between two continuous variables: room temperature (independent variable) and time spent in deep sleep (dependent variable).

**Mark allocation:** 1 mark

- 1 mark for outlining utility for measuring relationship between continuous variables

## Question 3a.

**Sample response**

> Performance on problem-solving tasks (measured by the number of tasks completed successfully)

**Mark allocation:** 1 mark

- 1 mark for correctly identifying DV (either general or operationalised)

### Question 3b.

**Sample response**

> Adults who complete problem-solving tasks while listening to loud music will perform worse on the tasks compared to participants who complete the same tasks in a quiet environment.

**Mark allocation:** 3 marks

- 1 mark for correctly identifying the IV (loud music versus quiet environment)
- 1 mark for identifying the DV and direction of effect (predicting increased performance on problem-solving tasks for those listening to loud music)
- 1 mark for stating the population as 'adults' and making a comparison between both groups

### Question 3c.

**Sample response**

> Between-subjects design

**Mark allocation:** 1 mark

- 1 mark for identifying a between-subjects design (as each participant only completes one condition)

### Question 3d.

**Sample response**

> Random sampling is the process of choosing the sample from a larger population in a way that all members of the population have an equal chance of being selected, whereas random allocation is the process of assigning your sample's participants to different conditions to ensure that each participant has an equal chance of being in any group.

**Mark allocation:** 2 marks

- 1 mark for describing random sampling (must refer to every member of population having equal chance)
- 1 mark for describing random allocation (must refer to each member of sample having equal chance to be in each condition)

## Question 3e.

**Sample response**

> One extraneous variable could be individual differences in cognitive ability, such as prior experience with problem-solving tasks. If participants in the loud music group have lower cognitive ability than those in the quiet group, this could confound the results, making it difficult to determine whether the reduced performance was due to the loud music or the participants' individual abilities. This would reduce the internal validity of the study, as the cause of the performance differences would not be clear.

**Mark allocation:** 3 marks

- 1 mark for identifying an appropriate extraneous variable (e.g. individual differences in cognitive ability, type of music being played)
- 1 mark for discussing how it would affect the interpretation of the results
- 1 mark for explaining how the extraneous variable could affect the validity (reducing internal validity)

## Question 4a.

**Sample response**

> Exposure to conformity pressure (whether they are invited to the front of the line to pick first, or placed at the back of the line and observe the confederates)

**Mark allocation:** 1 mark

- 1 mark for correctly identifying the IV (phrasing may vary but should refer to conformity)

## Question 4b.

**Sample response**

> Children exposed to pressure to conform (by going after confederates) will be more likely to conform by taking smaller amounts of food than children not exposed to this pressure (by going first).

**Mark allocation:** 3 marks

- 1 mark for identifying population as children and comparison between IV conditions
- 1 mark for identifying IV conditions
- 1 mark for identifying DV and direction of effect

## Question 4c.

**Sample response**

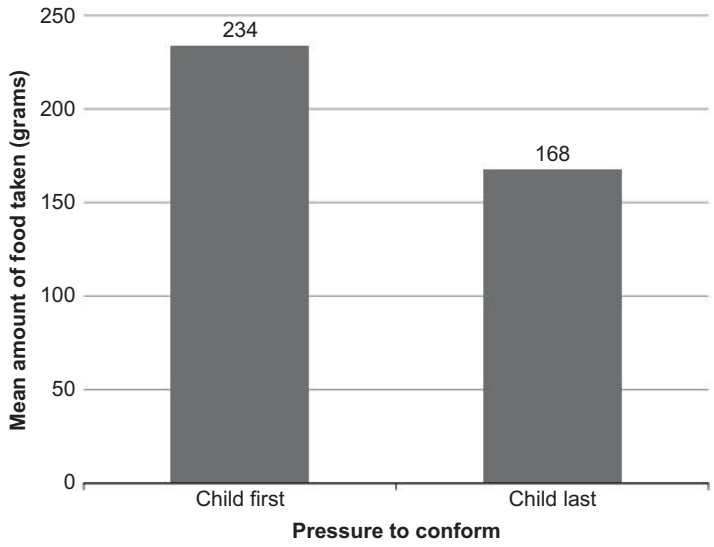
> The purpose of the 'child first' group is to serve as a control group to compare how much food children take without the influence of conformity pressure.

**Mark allocation:** 1 mark

- 1 mark for reference to this group as a 'control group' to provide a baseline for comparison

## Question 4d.

**Sample response**




**Mark allocation:** 3 marks

- 1 mark for correctly labelling the *x*-axis
- 1 mark for correctly labelling the *y*-axis
- 1 mark for correctly plotting the data points for both groups

## Question 4e.

**Sample response**

> The mean amount of food taken in grams is quantitative data.
>
> The children's explanations of why they took the amount they did is qualitative data.

**Mark allocation:** 2 marks

- 1 mark for identifying amount of food as quantitative (or objective)
- 1 mark for identifying children's explanations as qualitative (or subjective)

## Question 4f.

**Sample response**

> Conformity pressure directly influences children's social behaviour to match that of the group, as children who were placed last in line (and observed the confederates taking smaller portions) took less food than those who were allowed to pick first.

**Mark allocation:** 1 mark

- 1 mark for outlining that conformity pressure affects social behaviour to match the group

## Question 4g.

**Sample response**

> The type of error would be systematic error because the wrongly calibrated scales would consistently give biased measurements in one direction (either consistently overestimating or underestimating the amount of food). This would affect the measurements by reducing their accuracy, meaning that the data collected for both groups would be consistently incorrect.

**Mark allocation:** 3 marks

- 1 mark for identifying this as a systematic error
- 1 mark for explaining that this would involve consistently overestimating or underestimating the amount of food (only one direction required)
- 1 mark for linking this to reduced accuracy **OR** that the values recorded will be further from the true value

## Question 4h.

**Sample response**

> The 'child first' group has a high standard deviation of 180, indicating greater variability in the amount of food taken by participants (some individuals took significantly more or less food than others, leading to a wider spread of data). In contrast, the 'child last' group has a lower standard deviation of 62, suggesting less variability in food intake, with most participants taking similar amounts of food (this also suggests conformity).

**Mark allocation:** 2 marks

- 1 mark for explaining (higher value = more spread, lower value = less spread)
- 1 mark for contrasting the standard deviations between the two groups and explaining how it reflects the variability of food intake in each group

### Question 4i.

**Sample response**

> Dr Chin could extend this research by investigating how different group sizes or peer pressure from friends versus strangers affects children's food-sharing behaviour, to see if the influence of conformity varies with social dynamics.

**Mark allocation:** 1 mark

- 1 mark for suggesting any suitable change to IV/DV/procedure/sample

### Question 5a.

**Sample response**

> The mean number of driving errors.

**Mark allocation:** 1 mark

- 1 mark for identifying 'mean'

### Question 5b.

**Sample response**

> The purpose of the 'alone' condition is to serve as a baseline comparison to measure how the presence of different types of distractions (angry parent or peers) affects driving performance.

**Mark allocation:** 1 mark

- 1 mark for identifying alone condition as a baseline or control group, to allow for measuring the effect of IV on DV

### Question 5c.i.

**Sample response**

> Mixed design

**Mark allocation:** 1 mark

- 1 mark for identifying mixed design

### Question 5c.ii.

**Sample response**

> One advantage of using a mixed design is that it allows researchers to combine the strengths of both within-subjects and between-subjects designs. This means direct comparison for each participant compared to their control result (within-subjects) while also allowing for comparison between different groups, each experiencing one distraction condition (between-subjects).

**Mark allocation:** 2 marks

- 1 mark for an advantage of between-subjects component
- 1 mark for an advantage of within-subjects component

### Question 5d.

**Sample response**

> Percentage change is $\frac{12 - 8}{8} \times 100 = 50\%$ increase

**Mark allocation:** 1 mark

- 1 mark for calculating a 50% increase in mistakes (working not required)

### Question 5e.

**Sample response**

> The greatest number of errors were made with peers (14), then with angry parents (12), while the control 'alone' group had the fewest errors (8). This shows when participants were distracted, they made more errors than when in the driving simulator alone, and distraction by peers has more effect than distraction by an angry parent.

**Mark allocation:** 2 marks

- 1 mark for a summary of results, including clear ranking of the scores for all three groups (greatest, middle, fewest)
- 1 mark for a clear conclusion that shows distraction increases driving errors and peer distraction is worse than parent distraction

## Question 5f.

**Sample response**

> Reproducibility could be determined by conducting the same experiment with a different sample of adolescent drivers, ensuring the same procedures (such as the type of distractions and driving simulator tasks) are used. If similar effects on driving ability are found, the study can be considered reproducible.

**Mark allocation:** 2 marks

- 1 mark for outlining repetition of experiment with one or more changed conditions (variables, sample, researchers, procedures)
- 1 mark for indicating that the experiment can be considered reproducible if similar results for driving ability are found

## Question 5g.

**Sample response**

> That adolescent drivers should avoid having distracting peer-age passengers in the car, as it can significantly impair their driving ability, increasing the risk of accidents.
>
> **OR**
>
> Governments should legislate (as Victoria does) to limit the number of peer-aged passengers a young driver can carry.

**Mark allocation:** 1 mark

- 1 mark for outlining an appropriate real-world implication of these findings

## Acknowledgements

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