



# Mark Scheme (Results)

June 2023

Pearson Edexcel  
GCE Psychology 9PS0/01  
Paper 1: Foundations in Psychology

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

## Social Psychology

Question Number	Answer	Mark
<b>1 (a)</b>	<p style="text-align: center;"><b>AO1 (2 marks)</b></p> <p>Up to two marks for a description of the sample of participants in Sherif et al. (1954/1961)</p> <p>For example:</p> <ul style="list-style-type: none"> <li>Sherif et al. (1954/1961) sampled boys who were aged 11 to 12-years old and of a similar educational level. (1) The boys were middle-class and from Protestant families who were considered well-adjusted (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>1 (b)</b>	<p style="text-align: center;"><b>AO1 (2 marks)</b></p> <p>Up to two marks for a description of one way that Sherif et al. (1954/1961) attempted to reduce inter-group conflict.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>Sherif et al. (1954/1961) introduced superordinate goals that required collaboration between the two groups of boys to encourage group cohesion (1), such as cooperating to make an improvement to a water tank and pump that provided water for both groups (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>1 (c)</b>	<p style="text-align: center;"><b>AO1 (1 mark), AO3 (1 mark)</b></p> <p>One mark for identification of a weakness in terms of reliability (AO1). One mark for justification of the weakness (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>The study by Sherif et al. (1954/1961) was a field experiment at a summer camp which meant that they could not control all extraneous variables that may impact on the conflict between the Rattlers and Eagles (1). This reduces the reliability of the findings about negative attitudes towards an out-group as the study cannot be fully replicated to check the results for consistency (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>2(a)</b>	<p style="text-align: center;"><b>A02 (4 marks)</b></p> <p>One mark for squaring the values of the gender prejudice scores minus the mean (7.4) for each score, <math>(x - \bar{x})^2</math>  <math>2.6^2</math>, <math>0.6^2</math>, <math>1.6^2</math>, <math>-3.4^2</math>, <math>-1.4^2</math></p> <p>One mark for calculating the sum of these values = <b>23.2</b></p> <p>One mark for dividing this by 4 (n-1) = <b>5.8</b></p> <p>One mark for calculating the square root = <math>2.4083189</math> / <b>2.41</b> to two decimal places</p> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Answer	Mark
<b>2(b)</b>	<p style="text-align: center;"><b>A02 (1 mark)</b></p> <p>One mark for the range for the gender prejudice score.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• 6 (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(1)</b>

Question Number	Indicative Content	Mark
3	<p style="text-align: center;"><b>AO1 (4 marks), AO3 (4 marks)</b></p> <p><b>AO1</b></p> <ul style="list-style-type: none"> <li>• Milgram’s agency theory suggests that most people are likely to obey an authority figure and give up their free will.</li> <li>• The process of moral strain is the point where individuals feel such discomfort between their judgement and an order from an authority figure that they shift to an agentic state to relieve the strain.</li> <li>• An agentic state is when individuals become agents of the authority figure and will obey without questioning what they are told to do.</li> <li>• An autonomous state is when individuals maintain free will and responsibility so dissent against the orders of an authority figure.</li> </ul> <p><b>AO3</b></p> <ul style="list-style-type: none"> <li>• Supporting evidence comes from Milgram’s (1963) study which showed that 65% of his participants behaved agentially and shocked the learner to 450 volts.</li> <li>• Milgram’s agency theory does not consider individual differences in personality therefore it is an incomplete explanation of what influences a person to obey.</li> <li>• Agency theory can be applied to explain the acts of genocide like the Holocaust in which the soldiers behaved agentially and blindly obeyed without question, killing millions of people.</li> <li>• Charismatic leadership (House, 1976) suggests that the traits of the leader are important in gaining obedience, so autonomy may be a result of the authority figure lacking charisma rather than an individual’s state.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO3 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs evaluation/conclusion in their answer</b>		
	0	No rewardable material.
Level 1	1-2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	3-4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	5-6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	7-8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)

## Cognitive Psychology

Question Number	Answer	Mark
<b>4 (a)</b>	<p style="text-align: center;"><b>AO2 (2 marks)</b></p> <p>One mark for stating the fully operationalised independent variable for their cognitive psychology practical investigation.            One mark for stating the fully operationalised dependent variable for their cognitive psychology practical investigation.</p> <p>For example:</p> <p>Independent variable (IV)</p> <ul style="list-style-type: none"> <li>Whether there was an interference task of 30 seconds or no interference task (1)</li> </ul> <p>Dependent variable (DV)</p> <ul style="list-style-type: none"> <li>The number of trigrams recalled correctly from a list of 15 (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Generic answers score 0 marks.</b></p> <p><b>Answers must relate to their cognitive psychology practical investigation.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>4 (b)</b>	<p style="text-align: center;"><b>AO2 (2 marks), AO3 (2 marks)</b></p> <p>One mark for identification of each strength in relation to their cognitive psychology practical investigation (AO2).            One mark for justification of each strength (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>We conducted the practical in a controlled setting with the classroom windows closed and blinds down to prevent any distractions to the students making the experiment reliable (1) so we can be more certain that any changes in the number of trigrams recalled were due to the interference task and not extraneous variables confounding the results (1).</li> <li>The trigram list was checked against the initials of the students taking part in the experiment to be sure the list did not include initials, increasing construct validity (1) so we had a valid test of recall of trigrams from STM and not recall from existing LTM making sure we accurately measured the effect of interference on STM (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Generic answers score 0 marks.</b></p> <p><b>Answers must relate to their cognitive psychology practical investigation.</b></p>	<b>(4)</b>



Question Number	Answer	Mark
<b>4 (c)</b>	<p style="text-align: center;"><b>AO2 (1 mark), AO3 (1 mark)</b></p> <p>One mark for identification of an improvement in relation to their cognitive psychology practical investigation (AO2). One mark for justification of the improvement (AO3).</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• One improvement we could make would be to gather a more representative sample of participants aged from 18 to 60 years old to represent memory recall across different ages (1). This would increase the generalisability of our findings about the duration of STM and the effects of interference tasks to a wider target population (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Generic answers score 0 marks.</b></p> <p><b>Answers must relate to their cognitive psychology practical investigation.</b></p>	<b>(2)</b>

Question Number	Indicative Content	Mark
5	<p style="text-align: center;"><b>A01 (4 marks), A02 (4 marks)</b></p> <p><b>A01</b></p> <ul style="list-style-type: none"> <li>• Reconstructive memory suggests that we actively try and make sense of new information based on what we already know.</li> <li>• Memory recall may be distorted when memories are reconstructed based on an individual's understanding from past events.</li> <li>• Schemas are the mental structures which hold prior knowledge that are built from personal experiences.</li> <li>• The concept of confabulation is where gaps in memories are filled in using pre-existing information and expectations.</li> </ul> <p><b>A02</b></p> <ul style="list-style-type: none"> <li>• Betty may have recalled the suitcase because this is something she already knows about from her own travelling and staying in a town for an extended period of time.</li> <li>• Milo may have distorted his recall of the colour of the taxis as yellow from past events in films he has watched where taxis in a city are yellow, not black taxis.</li> <li>• Betty and Milo may both have similar schemas for journeys travelling by train and arriving at train stations from their own experiences which would have influenced their memory of the film when they recalled the scene.</li> <li>• Milo may have confabulated the character having a bag and not a suitcase as he may expect that people visit cities for shorter periods of time, so his pre-existing knowledge would be that people only take a bag and not a suitcase.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO2 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs application in their answer</b>		
	0	No rewardable material
Level 1	1–2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 2	3–4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Discussion is partially developed but is imbalanced or superficial occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 3	5–6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Candidates will demonstrate a grasp of competing arguments, but discussion may be imbalanced or contain superficial material supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures (AO2)
Level 4	7–8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical balanced discussion, containing logical chains of reasoning. Demonstrates a thorough awareness of competing arguments supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). (AO2)

## Biological Psychology

Question Number	Answer	Mark
<b>6 (a)</b>	<p style="text-align: center;"><b>AO2 (2 marks)</b></p> <p>Up to two marks for describing how to use a random sampling technique to gather participants in relation to the scenario.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>Amelia could firstly approach the police for a list of violent offenders which she could put into a computer database (1) and then use a random number generator to select the first 30 violent offenders for her research into drug use and aggression (1).</li> </ul> <p><b>Look for other reasonable marking points.</b>  <b>Generic answers score 0 marks.</b>  <b>Answers must relate to the scenario.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>6 (b)</b>	<p style="text-align: center;"><b>AO2 (1 mark), AO3 (1 mark)</b></p> <p>One mark for identification of a weakness of a correlational research method in relation to the scenario (AO2)  One mark for justification of the weakness (AO3)</p> <p>For example:</p> <ul style="list-style-type: none"> <li>By using a correlational research method Amelia cannot be certain that violence is the result of recreational drug use as the data she gathers will only tell her if there is a relationship between her covariables of aggression and drug use (1) which means Amelia would not be able to determine any cause and effect that drug taking results in violent behaviour, so limiting the usefulness of her findings (1).</li> </ul> <p><b>Look for other reasonable marking points.</b>  <b>Generic answers score 0 marks.</b>  <b>Answers must relate to the scenario.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
7	<p style="text-align: center;"><b>A01 (2 marks), A03 (2 marks)</b></p> <p>One mark for identification of each strength (A01)  One mark for justification of each strength (A03)</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Real-life case studies indicate that damage to brain structure can result in individuals becoming aggressive which increases the plausibility of the explanation that brain structures affect aggression (1). Damasio et al. (1994) studied the case of Phineas Gage who suffered damage to his pre-frontal cortex that resulted in a personality change that made him irresponsible and aggressive, so brain structure can influence aggression (1).</li> <li>• Considering brain structure as a factor in human aggression could help inform the way violent offenders are perceived by the criminal justice system by including considerations of a person's pre-disposition to violence (1). Wong et al. (1997) used MRI scans with 19 violent male criminals, they found the volume of the amygdala was smaller in the violent criminals compared to controls, supporting brain structure as a factor involved in violent offending (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(4)</b>

Question Number	Indicative Content	Mark
8	<p style="text-align: center;"><b>A01 (4 marks), A03 (4 marks)</b></p> <p><b>A01</b></p> <ul style="list-style-type: none"> <li>• Testosterone is a hormone found in males more than females and is responsible for sex drive, body muscle mass and mood.</li> <li>• The hormone estradiol plays a role in dominance, motivation for power and physical aggression among females.</li> <li>• Low levels of cortisol, a hormone secreted in response to stress, is associated with persistent aggressive behaviour beginning in childhood.</li> <li>• The combination of high levels of testosterone, low levels of cortisol and low levels of serotonin have been associated with impulsive aggression.</li> </ul> <p><b>A03</b></p> <ul style="list-style-type: none"> <li>• Dabbs (1995) found higher levels of testosterone in adult male prison inmates who had committed violent crimes compared to property crime, so hormones may explain aggressive behaviour.</li> <li>• It may be that when faced with a situation that leads to aggression, estradiol levels increase in response to the situation, therefore hormones may not be the cause of aggression, but the result of aggression.</li> <li>• McBurnett et al. (2000) found that boys who had lower levels of cortisol in their saliva were three times more aggressive than boys with higher levels of cortisol, so cortisol does seem to play a role in aggressive behaviour.</li> <li>• A focus just on hormones could be considered reductionist as it excludes the role of neurotransmitters along with genetics or brain functioning, so hormones on their own cannot fully explain human behaviour such as aggression.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO3 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs assessment/conclusion in their answer.</b>		
	0	No rewardable material.
Level 1	1–2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	3–4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a generic or superficial assessment being presented. (AO3)
Level 3	5–6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to an assessment being presented which considers a range of factors. Candidates will demonstrate understanding of competing arguments/factors but unlikely to grasp their significance. The assessment leads to a judgement but this may be imbalanced. (AO3)
Level 4	7–8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical assessment, containing logical chains of reasoning throughout. Demonstrates an awareness of the significance of competing arguments/factors leading to a balanced judgement being presented. (AO3)

## Learning Theories

Question Number	Answer	Mark
<b>9 (a)</b>	<p style="text-align: center;"><b>AO2 (2 marks)</b></p> <p>Up to two marks for a description of informed consent in relation to the scenario.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>Archie may have asked the parents of the children if they would allow their child to be observed on a specified day during activities at the pre-school (1). He would have told parents that he aimed to observe play with gender stereotypical toys and explained his observation process (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Generic answers score 0 marks.</b></p> <p><b>Answers must relate to the scenario.</b></p>	<b>(2)</b>

Question Number	Answer						Mark																																	
9 (b)	<b>AO2 (4 marks)</b>						<b>(4)</b>																																	
	One mark for accurate completion of O-E column.																																							
	One mark for accurate completion of (O-E) <sup>2</sup> column.																																							
	One mark for accurate completion of (O-E) <sup>2</sup> /E column.																																							
	One mark for correct answer to two decimal places <b>0.24</b>																																							
	<table><tr><td></td><td></td><td><b>Observed</b></td><td><b>Expected</b></td><td><b>O-E</b></td><td><b>(O-E)<sup>2</sup></b></td><td><b>(O-E)<sup>2</sup>/E</b></td></tr><tr><td rowspan="2"><b>Boys</b></td><td><b>Stereotypical boys' toy</b></td><td>8</td><td>8.78</td><td><b>-0.78</b></td><td><b>0.61</b></td><td><b>0.07</b></td></tr><tr><td><b>Stereotypical girls' toy</b></td><td>12</td><td>11.22</td><td><b>0.78</b></td><td><b>0.61</b></td><td><b>0.05</b></td></tr><tr><td rowspan="2"><b>Girls</b></td><td><b>Stereotypical boys' toy</b></td><td>10</td><td>9.22</td><td><b>0.78</b></td><td><b>0.61</b></td><td><b>0.07</b></td></tr><tr><td><b>Stereotypical girls' toy</b></td><td>11</td><td>11.78</td><td><b>-0.78</b></td><td><b>0.61</b></td><td><b>0.05</b></td></tr></table>									<b>Observed</b>	<b>Expected</b>	<b>O-E</b>	<b>(O-E)<sup>2</sup></b>	<b>(O-E)<sup>2</sup>/E</b>	<b>Boys</b>	<b>Stereotypical boys' toy</b>	8	8.78	<b>-0.78</b>	<b>0.61</b>	<b>0.07</b>	<b>Stereotypical girls' toy</b>	12	11.22	<b>0.78</b>	<b>0.61</b>	<b>0.05</b>	<b>Girls</b>	<b>Stereotypical boys' toy</b>	10	9.22	<b>0.78</b>	<b>0.61</b>	<b>0.07</b>	<b>Stereotypical girls' toy</b>	11	11.78	<b>-0.78</b>	<b>0.61</b>	<b>0.05</b>
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Question Number	Answer	Mark
<b>9 (c)</b>	<p style="text-align: center;"><b>A02 (1 mark)</b></p> <p>One mark for determining whether there is a significant difference.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>There is not a significant difference between the choice of gender stereotypical toys by boys and girls as the calculated value (0.24) is lower than the critical value (2.71) for a one-tailed test at <math>p=0.05</math> (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
<b>10</b>	<p style="text-align: center;"><b>A02 (2 marks), A03 (2 marks)</b></p> <p>One mark for identification of a strength and a weakness in relation to the scenario (A02). One mark for justification of the strength and the weakness (A03).</p> <p>For example:</p> <p>Strength</p> <ul style="list-style-type: none"> <li>There is evidence that behaviour shaping is a successful way to help young children learn appropriate behaviours through reinforcing the boy to take the small steps of sitting on a chair with Marigold, eventually sitting at his desk (1). Nasa et al. (2008) found that behaviour shaping was successful in supporting a child aged 11 years old with ADHD to concentrate on tasks, so Marigold is likely to achieve success with the child in her class (1).</li> </ul> <p>Weakness</p> <ul style="list-style-type: none"> <li>Shaping the behaviour of a 9-year-old child to comply with the desired expected behaviour that Marigold determines to be appropriate in her classroom could be considered ethically and morally unacceptable (1) as it is only a manipulation of surface behaviour, so Marigold is just attempting to control his actions which could be considered a form of social control (1).</li> </ul> <p><b>Look for other reasonable marking points.</b></p> <p><b>Generic answers score 0 marks.</b></p> <p><b>Answers must relate to the scenario.</b></p>	<b>(4)</b>

Question Number	Indicative Content	Mark
11	<p style="text-align: center;"><b>A01 (4 marks), A02 (4 marks)</b></p> <p><b>A01</b></p> <ul style="list-style-type: none"> <li>• Classical conditioning suggests a phobia is acquired through the pairing of a neutral stimulus with an unconditioned stimulus.</li> <li>• The unconditioned response becomes associated with the neutral stimulus, resulting in a conditioned response each time the conditioned stimulus is presented.</li> <li>• Negative reinforcement maintains a phobia when a behaviour or action results in the removal of an undesired consequence.</li> <li>• When a desired consequence is received for a behaviour or action, the behaviour is reinforced positively, so the phobic response is maintained.</li> </ul> <p><b>A02</b></p> <ul style="list-style-type: none"> <li>• The clown toy in the box was an unconditioned stimulus that resulted in an unconditioned fear and startle response, the action of opening a box would have been a neutral stimulus for Dora.</li> <li>• When Dora's UCR of fear and startle was paired with the NS of opening the box an association developed between opening the box and fear, creating a conditioned response of fear to boxes.</li> <li>• By opening all the boxes for her, Dora's family are negatively reinforcing the fear by removing her undesired consequence of having to open boxes when they are delivered so Dora's phobia of boxes is maintained.</li> <li>• By consoling Dora and bringing her cups of tea, her family are providing positive reinforcement for her behaviour of showing fear of boxes, which is desired by Dora so she will continue the phobic response of being afraid of boxes.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO2 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs application in their answer</b>		
	0	No rewardable material
Level 1	1–2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 2	3–4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Discussion is partially developed but is imbalanced or superficial occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques and procedures). (AO2)
Level 3	5–6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning. Candidates will demonstrate a grasp of competing arguments, but discussion may be imbalanced or contain superficial material supported by applying relevant evidence from the context (scientific ideas, processes, techniques and procedures (AO2)
Level 4	7–8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical balanced discussion, containing logical chains of reasoning. Demonstrates a thorough awareness of competing arguments supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). (AO2)

## Issues and Debates

Question Number	Indicative Content	Mark
12	<p style="text-align: center;"><b>A01 (4 marks), A03 (4 marks)</b></p> <p><b>A01</b></p> <ul style="list-style-type: none"> <li>• Animal research is governed by the Scientific Procedures Act (1986) to make sure it is conducted with consideration for the animals safety and welfare.</li> <li>• Animals should be given appropriate conditions to live in to ensure they are well looked after and cared for, before, during and after experimental testing.</li> <li>• Pavlov (1927) studied salivation in dogs to theorise that people and animals could be conditioned to behave in certain ways.</li> <li>• The three R's include replacement where animal use only takes place when necessary; refinement of procedures to minimise harm; and reduction of the number of animals used.</li> </ul> <p><b>A03</b></p> <ul style="list-style-type: none"> <li>• The Bateson Cube is used to determine a cost-benefit analysis of research using animals, which helps determine whether the potential benefits to humankind outweigh any harm that may be caused to animals during the research to ensure ethical issues are considered carefully in research.</li> <li>• Small animals such as rodents can be housed in small laboratory spaces, which allows researchers to maintain ethical considerations of suitable conditions whilst having sufficient animals to undertake testing with, so ethical issues can be met.</li> <li>• Pavlov (1927) inserted a tube into the dogs to collect the saliva to be measured, which may have caused unnecessary pain to the dogs as conditioning could be tested in other ways, so not all research with animals is fully ethical.</li> <li>• Skinner studied pigeons and attempted to train them to carry missiles during WWII, this is unethical as the animals would have been sent to their deaths, however during the time of war it was considered acceptable to attempt to use animals so it was necessary to use pigeons in this way.</li> </ul> <p><b>Look for other reasonable marking points.</b></p>	<b>(8)</b>

Level	Mark	Descriptor
<b>A01 (4 marks), A03 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs assessment/conclusion in their answer.</b>		
	0	No rewardable material.
Level 1	1–2 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	3–4 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a generic or superficial assessment being presented. (AO3)
Level 3	5–6 Marks	Demonstrates accurate knowledge and understanding. (AO1) Arguments developed using mostly coherent chains of reasoning leading to an assessment being presented which considers a range of factors. Candidates will demonstrate understanding of competing arguments/factors but unlikely to grasp their significance. The assessment leads to a judgement but this may be imbalanced. (AO3)
Level 4	7–8 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical assessment, containing logical chains of reasoning throughout. Demonstrates an awareness of the significance of competing arguments/factors leading to a balanced judgement being presented. (AO3)

Question Number	Indicative Content	Mark
13	<p data-bbox="437 230 1212 271"><b>A01 (4 marks), A02 (4 marks), A03 (4 marks)</b></p> <p data-bbox="277 304 347 336"><b>A01</b></p> <ul data-bbox="328 342 1369 730" style="list-style-type: none"> <li>• The multi-store model of memory assumes that processing is a structural feature of human cognition which includes rehearsal and encoding as part of memory processing.</li> <li>• The central executive is said to be the control centre responsible for focussing attention and inhibiting distraction from multiple information inputs into our short-term memory.</li> <li>• Research into memory processes in cognitive psychology has included the use of brain scanning techniques to try and find the locations of memory functions like the central executive.</li> <li>• Episodic memory is time and spatially referenced information about life events that an individual has experienced.</li> </ul> <p data-bbox="277 768 347 799"><b>A02</b></p> <ul data-bbox="328 806 1362 1299" style="list-style-type: none"> <li>• Marco may not have rehearsed the events of the fight with the other man and so cannot fully remember what took place as he had not transferred this to his long-term memory store.</li> <li>• Marco demonstrates cognitive confusion which could indicate he has abnormal executive functioning, explaining why he lacks an ability to process what is taking place around him and becomes frustrated and aggressive.</li> <li>• The referral for a brain scan could provide empirical evidence for Marco's memory processing to help him understand why he was found by police at 3am unable to get home.</li> <li>• Marco recalled the fact that the man was lying but had an inability to recall exactly what happened during the fight, which may show an issue with his memory of life experiences and an episodic dysfunction in his long-term memory store.</li> </ul> <p data-bbox="277 1337 347 1368"><b>A03</b></p> <ul data-bbox="328 1375 1369 1939" style="list-style-type: none"> <li>• Peterson and Peterson (1959) found that when STM rehearsal was prevented using an interference task, participants could not recall the trigrams after 18 to 30 seconds, so rehearsal appears to be required for transfer of information to LTM.</li> <li>• Marco's frustration and aggression may not be the result abnormal executive processing, as Raine et al. (1997) found that brain functions, such as reduced glucose metabolism in bilateral prefrontal cortex, could be linked to aggression.</li> <li>• Schwindt and Black (2009) conducted a meta-analysis of fMRI studies of Alzheimer's disease which showed that Alzheimer's disease patients show decreased activation in the MTL, so the brain scan could help find out if Marco has this type of disorder.</li> <li>• Ostergaard (1987) studied a 10-year-old boy with brain damage to his episodic but not semantic memory as he could make academic progress, which suggests that Marco could have damage to one feature of his long-term memory.</li> </ul> <p data-bbox="277 1977 976 2009"><b>Look for other reasonable marking points.</b></p>	<b>(12)</b>

Level	Mark	Descriptor
<b>AO1 (4 marks), AO2 (4 marks), AO3 (4 marks)</b> <b>Candidates must demonstrate an equal emphasis between knowledge and understanding vs application vs evaluation/conclusion in their answer.</b>		
	0	No rewardable material.
Level 1	1-3 Marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Provides little or no reference to relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) A conclusion may be presented, but will be generic and the supporting evidence will be limited. Limited attempt to address the question. (AO3)
Level 2	4-6 Marks	Demonstrates mostly accurate knowledge and understanding. (AO1) Line(s) of argument occasionally supported through the application of relevant evidence from the context (scientific ideas, processes, techniques & procedures). (AO2) Candidates will produce statements with some development in the form of mostly accurate and relevant factual material, leading to a superficial conclusion being made. (AO3)
Level 3	7-9 Marks	Demonstrates accurate knowledge and understanding. (AO1) Line(s) of argument supported by applying relevant evidence from the context (scientific ideas, processes, techniques & procedures). Might demonstrate the ability to integrate and synthesise relevant knowledge. (AO2) Arguments developed using mostly coherent chains of reasoning leading to a conclusion being presented. Candidates will demonstrate a grasp of competing arguments but evaluation may be imbalanced. (AO3)
Level 4	10-12 Marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge. (AO2) Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion. (AO3)