Mark Scheme (Results)

Summer 2019

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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.
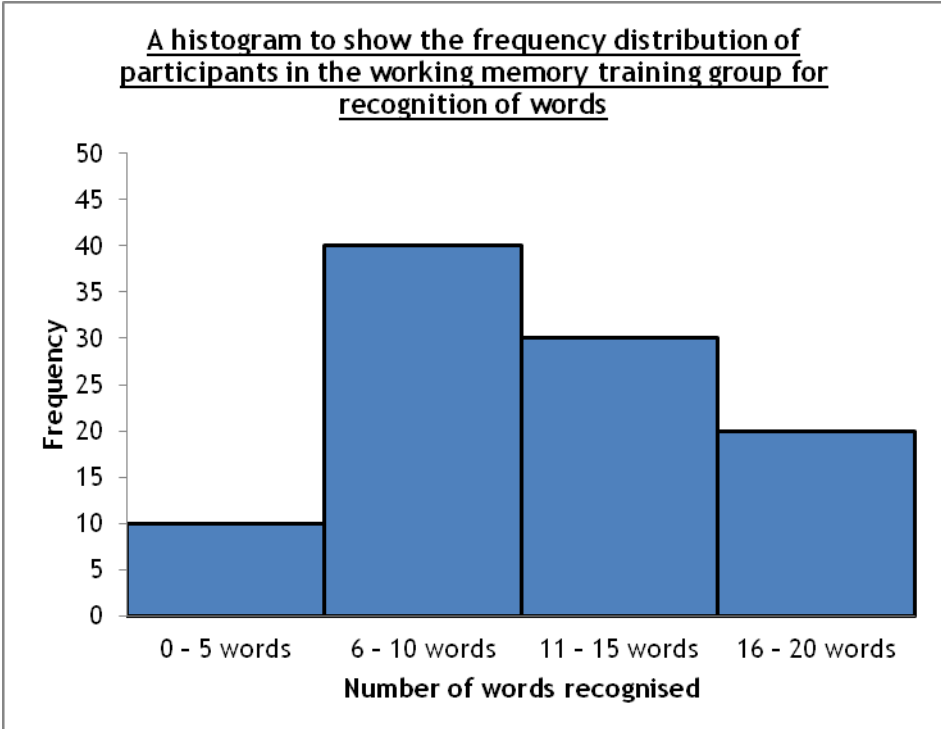
Question Number	Answer	Mark
1(a)	**AO2 (2 marks)** One mark for a basic directional (one-tailed) experimental hypothesis. Two marks for a fully operationalised directional (one-tailed) experimental hypothesis. For example: • Participants in the working memory training group will recognise more of the words (1) • Participants in the working memory training group will recognise more of the words out of 20 compared to the participants who had no working memory training (2) **Look for other reasonable marking points.** **Answers must relate to the scenario.**	(2)

Question Number	Answer	Mark
1(b)	**AO2 (1 mark)** One mark for stating the level of measurement used in the working memory training study. For example: • The number of words out of 20 would be an interval/ratio level of measurement. **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks**	(1)

Question Number	Answer	Mark
1(c)	**AO2 (2 marks), AO3 (2 marks)** One mark for identification of each strength related to the study (AO2). One mark for justification of each strength (AO3). For example: • The study assessing working memory training will have high internal validity as there will be few situational variables (1) because the study took place in a controlled, artificial setting which minimises the influence of noise distracting the participants during the memory task (1). • The study assessing working memory training had a standardised procedure so can be replicated to test for reliability (1) because both the working memory and the control group were given the same 20 target words and did the same recognition task (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.**	**(4)**

Question Number	Answer	Mark
1(d)	**AO2 (2 marks), AO3 (2 marks)** Candidate responses have to be drawn from evidence presented in Table 1. One mark for identification of each conclusion (AO2) One mark for justification of each conclusion (AO3). For example: • Working memory training led to a poorer working memory at the end of the study (1) which is shown by a mean decrease of 2.6 words from the beginning to the end of the study (1). • Not having working memory training (the control group) did not significantly affect working memory (1) which is shown by a difference of just 0.2 words on average from the beginning to the end of the study (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
1(e) (i)	**AO2 (3 marks)** One mark for correct/appropriate title (see graph below for suitable example) One mark for correct/appropriate labelling of axes (see graph below for suitable example) One mark for correct plots of data points (see graph below for correct plotting) _A histogram to show the frequency distribution of participants in the working memory training group for recognition of words_	**(3)**

Question Number	Answer	Mark
1(e) (ii)	**AO3 (1 mark)** One mark for appropriate interpretation from the histogram. For example: • There is a positive skew as the participants scored more at 6-10 and less in 11-15 and 16-20 words (1). **Look for other reasonable marking points.** **Answers must relate to the graph from (e)(i).**	**(1)**

Question Number	Answer	Mark
2(a)	**AO2 (1 mark)** One mark for accurate ratio. • 1:9	**(1)**

Question Number	Answer	Mark
2(b)	**AO2 (1 mark), AO3 (1 mark)** One mark for identification of appropriate conclusion (AO2) One mark for justification of conclusion (AO3) For example: • The most common reason for a quick decision in hiring an employee was friendly pre-interview chat (1) which is shown by 15 tallies which was five more than the next most common reason that the interview was late in the day (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
2(c)	**AO2 (2 marks), AO3 (2 marks)** One mark for identification of each way that subjectivity could have influenced the study (AO2) One mark for justification of each way that subjectivity could have influenced the study (AO3) For example: • The interviewer gave an estimate about the time it took to make a decision which could have been subjective (1). This is because they might not have been accurate in their estimate of how long it took them to come to a decision (1). • The interviewers' primary reasons for making their decision was self-report data which could have been subjective (1). This is because they may have not been truthful in their reasons for hiring an employee or not (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(4)**

Question Number	Answer	Mark
2(d)	**AO2 (1 mark), AO3 (1 mark)** One mark for identification of a way of making the study reliable (AO2) One mark for justification of the way of making the study reliable (AO3) For example: • The interviewers could have used standardised, structured interviews with the same questions for all interviewees to make the study reliable (1) because this would make the job interviews easy to replicate using identical closed questions with the different candidates for the job (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

SECTION B: REVIEW OF STUDIES

Question Number	Answer	Mark
3(a)	**AO2 (1 mark), AO3 (1 mark)** One mark for identification of an ethical consideration relevant to the study (AO2) One mark for justification/exemplification of the ethical consideration (AO3) For example: • The researchers would have had to consider the care and accommodation of the monkeys as part of the establishment licence (1). The Animal Scientific Procedures Act (1986) would require that monkeys would have to have suitably sized cages, appropriate number of monkeys in each cage, and access to water throughout the study (1). **Look for other reasonable marking points.** **Answers must relate to the scenario.** **Generic answers score 0 marks.**	**(2)**

Question Number	Answer	Mark
3(b)	**AO2 (3 marks), AO3 (3 marks)**	(6)

Up to three marks for application of operant conditioning to the findings of the study (AO2).
Up to three marks for judgement/justification of how research evidence can support the findings of the study (AO3).

Application of operant conditioning to the study (AO2)

For example:

- Positive reinforcement states rewarded behaviour is repeated and could account for the findings for Condition 1 where the monkeys repeatedly attempted the correct sequences with 30 attempts (1).

- The monkeys in Condition 2 experienced variable ratio reinforcement where they received the food treat after they had performed the button presses leading to the highest response with 55 attempts (1).

- The monkeys in Condition 4 were punished for incorrect button sequences which operant conditioning would assume extinguishes behaviour and was demonstrated by only 4 attempted presses which was the lowest of all conditions (1).

Judgement/justification of how research evidence can support the findings of the study (AO3)

For example:

- Positive reinforcement is supported by Olds and Milner (1954) who found rats who were stimulated on the reward pathway continued to press a lever for further stimulation (1).

- Ferster and Skinner (1957) identified that a variable ratio schedule of reinforcement produced the highest level of attempts and responses from animals such as rats and pigeons which supports the findings from condition 2 (1).

- Skinner (1938) found that punishment following a behaviour would make the behaviour less likely which supports the low response rate of the monkeys in Condition 4 (1).

Look for other reasonable marking points.

Answers must relate to the scenario.

Generic answers score 0 marks.

Question Number	Indicative content	Mark
4	**AO1 (6 marks), AO3 (10 marks)**	**(16)**

AO1

- Reductionism is a way of explaining complex phenomenon (e.g. society) in terms of smaller units which make it up

- The opposite of reductionism is holism – this is the view that the smaller units of a phenomenon (e.g. society) never add up to the whole due to the relationship between the units (as this is more than the smaller units alone)

- Baddeley (1966b) tested acoustic and semantic coding in the LTM by asking participants to remember the order of a list of words

- Baddeley (1966b) concluded that short-term memory and long-term memory largely coded information differently

- Watson and Rayner (1920) used a laboratory experiment to isolate the stimulus and response pairings which is a reductionist way to assess learning

- Watson and Rayner (1920) found Little Albert could be conditioned to be scared of various objects when paired with a loud noise

AO3

- The use of a laboratory experiment to isolate acoustic and sematic coding by Baddeley (1966b) is a reductionist way to assess memory

- Simplifying memory to STM and LTM and concluding it is coded differently in Baddeley (1966b) is reductionist

- A more holistic way to study memory would be Bartlett's reconstructive memory theory which involves schemas and real life experience

- Baddeley's (1966b) study was used to support the Working Memory Model which breaks memory down into components such as the visuo-spatial sketchpad and phonological loop which is a reductionist model of memory

- A holistic explanation for memory may be more useful as it would take into account an individual's social world and their past and present experiences and the relationship between all the units

- The use of a controlled, standardised setting to isolate the stimulus and response pairings by Watson and Rayner (1920) is a reductionist way to assess learning

- To simplify learning to basic S>R relationships as concluded by

Watson and Rayner (1920) is reductionist

- Bandura's Social Learning Theory considers cognitive and social aspects of learning so could be considered a more holistic explanation of the learning process

- Watson and Rayner (1920) only used a single 11 month old male child so the case may not be true of other people's learning processes so is of limited value in explaining memory in this way

- Studying learning in a holistic way would be seen as less scientific and more difficult to falsify and isolation of the causes of learning would be difficult to isolate

- Reductionism is seen as more scientific and analytical than holism as it can be more easily tested and falsified so is a valuable approach to studying memory and learning

- An interactionist approach can combine different levels of an explanation of memory or learning to give a more complete, realistic understanding of memory or learning than either extreme reductionist or holistic explanations

Look for other reasonable marking points.

Level	Mark	Descriptor
		AO1 (6 marks), AO3 (10 marks) **Candidates must demonstrate a greater emphasis on evaluation/conclusion vs knowledge and understanding in their answer. Knowledge & understanding is capped at maximum 6 marks.**
Level 0	0	No rewardable material.
Level 1	1–4 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	5–8 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	9–12 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	13–16 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)

Question Number	Indicative content	Mark
5		**(12)**
	AO1 (4 marks), AO2 (4 marks), AO3 (4 marks)	
	AO1	
	• Individuals obey authority figures when in an agentic state	
	• People have evolved to obey authority as it gives them a survival advantage when in organised groups	
	• People are born with a propensity to obey, but this is only realised when they are socialised into follow direct orders of authority figures	
	• Moral strain may be experienced by individuals in the agentic state when they are carrying out orders they do not agree with	
	AO2	
	• Aaondians will obey the president to reduce water consumption when in an agentic state.	
	• Citizens of Aaondi will have evolved to obey the president's order to reduce non-recyclable waste as doing so will give them a survival advantage as they are in an organised group and reduce larger amounts of waste.	
	• Aaondians will be born with a predisposition to obey the president, and seeing the messages in their environment on TV/radio/billboards will lead to their obedience.	
	• People in Aaondi who do not agree with growing the vegetables in their garden may experience moral strain when they have to carry out the order to avoid the fine.	
	AO3	
	• Milgram's research showed that 'teachers' were willing to follow the direct orders of an experimenter to administer a potentially life-threatening electric shock	
	• It is difficult to test the assumption that Milgram's participants evolved the potential for obedience as psychologists cannot go back into history to assess this	
	• Blass (2012) looked at cross-cultural comparisons of obedience to authority and found very similar obedience rates cross-culturally which suggests all societies instil obedient behaviour during socialisation	
	• Agency theory does not account for individual differences such as	

	personality factors, which have found to be influential in whether someone is obedient (e.g. Adorno and the authoritarian personality)	
	• Biological factors are important in human behaviour and stimulation of the dopamine reward system when Aaondians recycle their waste may account for a change in behaviour instead of obedience to authority	
	Look for other reasonable marking points.	

Level	Mark	Descriptor
AO1 (4 marks), AO2 (4 marks), AO3 (4 marks) **Candidates must demonstrate an equal emphasis between knowledge and understanding vs application vs evaluation/conclusion in their answer.**		
Level 0	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)

Question Number	Indicative content	Mark
6	**AO1 (8 marks), AO3 (12 marks)** **AO1** • Nature is internal influences that affect the development of an individual. • Example of nature is how the genotype influences psychological characteristics such as schizophrenia. • Schizophrenia can be treated using nature-based methods like drugs such as chlorpromazine. • Nature can contribute to drug addiction through stimulation of the dopamine reward pathway. • Lack of brain activity in the prefrontal cortex could influence aggressive behaviour and is a nature factor. • Nurture is the external influences which could be pre-birth (drugs, disease, diet of mother) or post-birth (e.g. physical-environmental factors). • Example of nurture is how social factors such as social class or ethnic (minority) group may influence schizophrenia. • Nurture can contribute to drug addiction through exposure to people, places, or things that are associated with the drug. • Role models may influence aggressive behaviour through observation and imitation of aggressive acts which are later rewarded either directly or vicariously. • Agency theory assumes that people are born with the potential for obedience and that the socialisation process influences how obedient humans become. • Social impact theory focuses on how different social forces such as strength, immediacy and number affect an individual. **AO3** • Gottesman and Shields (1966) supported inheritance of schizophrenia with 42% MZ concordance compared to 9% DZ concordance. • Twin studies do not fully separate genes from the environment as most twins have similar nurture. • The use of drugs for mental health issues only manages the symptoms and a stress-diathesis model might be more appropriate than just nature causes so drugs should be combined with other treatments too. • Olds and Milner (1954) showed rats would repeatedly press a	(20)

- lever stimulating the dopamine reward system (e.g. septal areas) which shows nature influence on addiction.

- Olds and Milner (1954) used rats which have different chromosomes and brain structure to humans so the findings may not be generalisable.

- Raine et al. (1997) compared murderers (NGRI) with controls using PET scans and found lower activity in the prefrontal cortex which may explain the impulsive and irrational actions so shows the nature influence in aggression.

- Cooper (2005) analysed admissions for schizophrenia from 1949-1953 and found the rate of schizophrenia for single men was 4.1 times higher in social class 5 compared to social class 1.

- It may be that social drift is the actual contributor of nurture to schizophrenia, as evidence (Goldberg et al., 1963) found social decline happened to the schizophrenic patients in adolescence.

- Van den Oever et al. (2008) showed that cues associated with heroin lead to plasticity in the brain and not the drug itself.

- The external cues associated with heroin in Van den Oever et al. (2008) influenced internal brain plasticity and reduced synaptic activity which shows that there is an interaction between nature and nurture in drug addiction.

- Bandura's studies showed that children would observe and imitate role model aggressive behaviour to a bobo doll.

- Personality factors, such as those with the PEN personality, may contribute to aggressive behaviour and could be considered to be influenced by both nature and nurture factors.

- Both nature and nurture factors are responsible for obedience according to agency theory with the potential for obedience being shaped by social milieu, so this is more of an interactionist view.

- Social impact theory variables have received research support for nurture factors involved in behaviour but has been criticised for being too descriptive and it does not provide an understanding of the underlying psychological processes influencing behaviour.

Look for other reasonable marking points.

Level	Mark	Descriptor
		AO1 (8 marks), AO3 (12 marks) **Candidates must demonstrate a greater emphasis on assessment/conclusion vs knowledge and understanding in their answer. Knowledge & understanding is capped at maximum 8 marks.**
Level 0	0	No rewardable material.
Level 1	1–4 marks	Demonstrates isolated elements of knowledge and understanding. (AO1) Generic assertions may be presented. Limited attempt to address the question. (AO3)
Level 2	5–8 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	9–12 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 will be imbalanced. (AO3)
Level 4	13–16 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a logical assessment, containing logical chains of reasoning throughout which consider a range of factors. Demonstrates an understanding of competing arguments/factors but does not fully consider the significance of each which in turn leads to an imbalanced judgement being presented. (AO3)
Level 5	17–20 marks	Demonstrates accurate and thorough knowledge and understanding. (AO1) Displays a well-developed and logical assessment, containing logical chains of reasoning throughout. Demonstrates a full understanding and awareness of the significance of competing arguments/factors leading to a balanced judgement being presented. (AO3)