GCSE
PSYCHOLOGY
8182/1

Paper 1 Cognition and behaviour

Mark scheme

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196g81821/MS

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from aqa.org.uk

Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, i.e. if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

Examiners are reminded that AO1 and AO2 are regarded as interdependent. When deciding on a mark in instances where there is an attempt at more than one assessment objective all attempts should be considered together using the best fit approach. In doing so, examiners should bear in mind the relative weightings of the assessment objectives.

When an answer only contains content related to one of the skills (AO1/AO2), then the levels descriptors for the award of marks for the skill attempted should be applied to the answer, up to the maximum mark available.

Section A

Memory

01	Ben can list all of the planets in our solar system. What type of memory does Ben use to recall his list of planets? Shade **one** box. A. episodic B. procedural C. reconstructive D. semantic **[1 mark]**

Marks for this question: AO1 - 1 mark

Answer - D

02	Which **two** of the following statements about the multi-store model of memory are correct? Shade **two** boxes. A. All memory stores usually encode information acoustically. B. Approximately seven pieces of information can be stored in short term memory. C. Information flows through sensory, short term and long term memory stores. D. Information is transferred from sensory to short term memory through rehearsal. E. Sensory memory can store information for up to one minute. **[2 marks]**

Marks for this question: AO1 - 2 marks

Answer - B, C

03	Outline **two** features of long term memory. **[2 marks]**

Marks for this question: AO1 - 2 marks

1 mark each for any of the following (max 2):

- Duration of long term memory is up to a lifetime.
- Capacity of long term memory is unlimited /vast/large.
- Coding is usually semantic.

Accept other creditworthy answers such as reference to long term memory being split into types such as episodic, semantic and procedural.

Note: Simply stating ‘semantic’, ‘episodic’, ‘lifetime’, ‘large’ or reference to a ‘long duration’ is not creditworthy.

04.1	Read the following information. Samir is in his bedroom packing a suitcase to go on holiday to Spain. He realises he has not packed his toothpaste. He goes to the bathroom but when he gets there, he forgets what he needs. Explain how context can affect the accuracy of memory. Refer to Samir's experience in your answer. **[4 marks]**

Marks for this question: AO1 - 2 marks and AO2 - 2 marks

Level	Marks	Description
2 Clear	**3 – 4**	AO1: Description of how context can affect the accuracy of memory is accurate with detail. AO2: There is effective application of how context/location affects Samir's memory. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning and is clear, coherent and focused.
1 Basic	**1 – 2**	AO1: There is a limited description of how context can affect the accuracy of memory. AO2: There is a limited application of how context/location affects Samir's memory. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO1

- Recall is more accurate when information is encoded and retrieved in the same context.
- Recall is less accurate when information is encoded in one context and retrieved in a different one.
- Cues from the context are encoded and can trigger recall.

AO2

- Samir thought about packing his toothpaste in his bedroom and tried to recall this in the bathroom. This is why he has forgotten what he needs.
- When Samir returns to his bedroom, he is more likely to remember what he needs as he will be retrieving information in the same room as where it was encoded.
- The bedroom contains cues that trigger Samir's memory.

Note: The AO1 may be embedded in the application and can be credited.

Credit other relevant information.

04.2	Read the following information. At home, Samir drives on the left hand side of the road. Samir hires a car in Spain where people drive on the right hand side of the road. He finds he keeps driving towards the left hand side of the road instead of staying on the right. Use your knowledge of interference to explain Samir's behaviour. **[2 marks]**

Marks for this question: AO2 - 2 marks

2 marks: a clear and accurate application of interference theory.

1 mark: a limited or muddled attempt at application of interference theory.

Possible content:

AO2

- Because he drives on different sides of the road at home and on holiday. Samir's old memory of driving at home is confused with his new learning of driving in Spain.
- This makes it hard for Samir to remember which side of the road he should be driving on in Spain.
- Samir's behaviour is caused by proactive interference.

Credit other relevant application.

Note: To be considered clear and accurate the answer must be correctly applied to Samir's behaviour **and** include a correct use of interference such as old memories affecting new memories / the memories being mixed up due to being similar.

05	Evaluate the theory of reconstructive memory. **[5 marks]**

Marks for this question: AO3 - 5 marks

Level	Marks	Description
3 Detailed	**4 – 5**	Evaluation of the theory of reconstructive memory is effective. Any conclusions drawn are sound and fully expressed. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
2 Clear	**2 – 3**	There is some effective evaluation of the theory of reconstructive memory. Any conclusions drawn may not be fully expressed. Relevant terminology is used. The answer frequently demonstrates substantiated reasoning and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1**	Evaluation of the theory of reconstructive memory is of limited effectiveness. Relevant terminology is occasionally used. The answer lacks clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO3

- There is research evidence to support the idea that people add effort after meaning when recalling events. For example, in Bartlett's 'War of the ghosts' study, participants changed parts of the story when they retold it, showing that memories are reconstructed.
- Not all memories are reconstructed. Research evidence shows that important personal events such as our first day at school, are often accurately remembered.
- It helps us understand why two different people, such as eyewitnesses, can give very different versions of the same events. Both have reconstructed the events in different ways.
- The theory is based on evidence that has higher ecological validity than memory research in which participants have to learn word lists. This is because retelling a story is a more familiar use of memory than learning word lists in everyday life.
- The theory is still very popular despite being developed in the early 1900s.

Credit other relevant evaluations.

Note: Evaluation of the war of the ghosts study alone, without reference to how that impacts on the theory, can get a maximum of 1 mark.

06	Describe Murdock's serial position curve study. Evaluate the research method used in this study. **[9 marks]**

Marks for this question: AO1 - 4 marks and AO3 - 5 marks

Level	Marks	Description
3 Detailed	**7 – 9**	AO1: Relevant knowledge and understanding of Murdock's serial position curve study is accurate with detail. AO3: Analysis and evaluation of the research method used in Murdock's serial position curve study is effective. Research conclusions drawn are sound and fully expressed. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
2 Clear	**4 – 6**	AO1: Relevant knowledge and understanding of Murdock's serial position curve study is present but there are occasional inaccuracies/omissions. AO3: There may be some effective analysis and evaluation of the research method used in Murdock's serial position curve study. There may be an attempt to draw conclusions. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1 – 3**	AO1: Knowledge and understanding of Murdock's serial position curve study is present but limited. AO3: Analysis and evaluation of the research method used in Murdock's serial position curve study is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO1

- To investigate whether there are separate short term and long term memory stores or to see if the number of words in a list affects memory of the list.
- Participants heard lists of words. The word lists had between 10 and 40 words on them. The participants were asked to recall as many as possible.

- Participants recalled more words from the start of the list (primacy effect) and the end of the list (recency effect) than those in the middle of the list.
- These results have been taken to show that the words at the end of the list were recalled best as they were still in the short term memory. The ones at the start of the list were recalled well because they had been transferred to the long term memory. The words in the middle of the list were not remembered well and this suggests that they were not in either the short or long term store.
- These results indicate the likelihood of recalling a word depends on its position in a list.
- This provides evidence for the existence of short and long term memory stores.

AO3

- This was a laboratory based study so people are using their memory under highly controlled conditions.
- This is useful for the researcher who has eliminated many extraneous variables so can be sure the IV has affected the DV if the results show an effect.
- Procedures are standardised so the study can be replicated.
- Lab based studies often use artificial tasks (such as learning word lists). Because people do not normally have to do these, this can reduce the validity of the results.
- High control can decrease the validity of the results because it increases the artificiality of the performance of the participants. This means it is difficult to generalise research findings to predict behaviour in a more normal setting.

Credit other relevant content.

Total Section A - 25 marks

Section B

Perception

07	Which is the best explanation for the visual illusion known as the Necker cube? Shade **one** box. A. ambiguity B. convergence C. misinterpreted depth cues D. size constancy **[1 mark]**

Marks for this question: AO1 - 1 mark

Answer - A

08	What is meant by sensation? **[1 mark]**

Marks for this question: AO1 - 1 mark

- sensation is the information we receive through our senses.

Credit other relevant definitions.

09	Name **two** monocular depth cues. **[2 marks]**

Marks for this question: AO1 - 2 marks

1 mark each for any of the following (max 2):

- height in plane
- linear perspective
- occlusion
- relative size

Accept other creditworthy answers such as motion parallax, texture/colour gradient and aerial perspective.

Note: if more than two monocular depth cues are given, credit the first two written.

10	People often incorrectly think the two horizontal lines in the Ponzo illusion are of different lengths. Use your knowledge of Gregory's constructivist theory of perception to explain the Ponzo illusion shown in **Figure 1**. **[4 marks]**

Marks for this question: AO1 - 2 marks and AO2 - 2 marks

Level	Marks	Description
2 Clear	**3 – 4**	AO1: Clear and accurate knowledge of Gregory's constructive theory of perception with some detail. AO2: Clear and accurate application of knowledge and understanding of Gregory's constructive theory of perception to explain the Ponzo illusion. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
1 Basic	**1 – 2**	AO1: Limited or muddled knowledge of Gregory's constructive theory of perception is present. AO2: Limited or muddled application of knowledge and understanding of Gregory's constructive theory of perception to explain the Ponzo illusion. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO1
- According to Gregory, perception is an active process and involves drawing inferences/guesses about the best explanation for what is being experienced.
- Gregory views perception as being constructed using both sensations (nature) and stored knowledge (nurture).
- This means we interpret sensory information using what we already know.
- Stored knowledge and expectations come from past experiences which will be individual depending on the nurturing environment.

AO2
- We learn through experience that parallel lines appear to converge in the distance.
- We interpret the two outer lines as parallel lines converging in the distance.
- We misinterpret these depth cues and apply the idea of size constancy.
- We judge the top horizontal line to be further away than the bottom horizontal line so we judge it to be longer.

Credit other relevant application.

11.1	Identify the type of data that is shown in **Table 1** and explain your answer. **[2 marks]**

Marks for this question: AO2 - 2 marks

AO2

1 mark for any of the following:

- quantitative
- primary

Accept other creditworthy answers such as nominal or discrete data.

PLUS

1 mark for an appropriate justification:

- (quantitative) as it is the number of presents / it is in numerical form
- (primary) as it was collected by the researcher for his/her study directly from the participants.

Credit other relevant justifications

Note: Do not accept just 'first-hand data' for primary data.

11.2	Use your knowledge of how emotion affects perception to explain the results shown in **Table 1**. **[3 marks]**

Marks for this question: AO3 - 3 marks

3 marks: a clear and detailed explanation.

2 marks: a limited explanation.

1 mark: a muddled explanation.

Possible content

AO3

- Children are emotional/excited about Christmas coming.
- This is why the mean number of presents drawn before Christmas is high.
- Children are less emotional/excited about Christmas after it has happened.
- This is why the mean number of presents drawn after Christmas is lower.
- The emotion the children experienced affected their interpretation of the number of presents that should be under the tree.

Credit other relevant explanations.

12	Outline Gibson's direct theory of perception. **[6 marks]**

Marks for this question: AO1 - 6 marks

Level	Marks	Description
3 Detailed	**5 – 6**	Relevant knowledge and understanding of Gibson's direct theory of perception is accurate with detail. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
2 Clear	**3 – 4**	Relevant knowledge and understanding of Gibson's direct theory of perception is present but there are occasional inaccuracies/omissions. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning and is clear, generally coherent and focused, although structure may lack some logic.
1 Basic	**1 – 2**	Knowledge and understanding of Gibson's direct theory of perception is present but limited. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO1

- Perceptual abilities are innate and do not have to be learnt through experience.
- We perceive things by using sensory information.
- We have enough information to understand the world around us by just using sensory information.
- Visual information such as light, texture and detail helps us to make judgements about distance, movement and depth.
- Motion parallax is a monocular depth cue which helps us understand movement. Things closer to us appear to move faster than things further away.
- Gibson's reference to affordances is his way of explaining why inferences are not needed in perception.
- It is a bottom-up theory.

Credit other relevant knowledge.

13	You have been asked to investigate the effect of motivation on perception. Explain how you would design an experiment to do this. You need to include the following information in your answer: • the experimental design you would choose and why this would be suitable • what you would ask the participants to do and what data you would collect • the results you would expect to find from your experiment. **[6 marks]**

Marks for this question: AO2 - 4 marks and AO3 - 2 marks

AO2

1 mark for any of the following:

- independent groups
- repeated measure
- matched pairs.

PLUS

1 mark for an appropriate justification of experimental design chosen.

PLUS

1 mark for description of a suitable task.

PLUS

1 mark for description of data collected.

AO3

2 marks: a clear and accurate description of the expected results with both conditions of the IV.

1 mark: a limited or muddled description of the expected results.

Note: if a student only describes a known study rather than basing their design on a known study (max 1 mark)

Total Section B - 25 marks

Section C

Development

14	Which of the following best describes the function of the brain stem? Shade **one** box. A. Controls basic autonomic functions B. Controls mental processes C. Coordinates movement and balance D. Processes sensory information **[1 mark]**

Marks for this question: AO1 - 1 mark

Answer - A

15.1	What is meant by 'learning styles'? **[1 mark]**

Marks for this question: AO1 - 1 mark

1 mark for a correct definition of learning styles

- The different ways in which a person can process/take in information.

Credit other relevant definitions.

Note: Simply identifying examples of learning style is not creditworthy.

15.2	Vicky is a verbaliser. Describe **two** ways in which Vicky could revise for a history test using this learning style. **[4 marks]**

Marks for this question: AO2 - 4 marks

Level	Marks	Description
2 Clear	**3 – 4**	Description of two ways in which Vicky could revise for a history test using a verbaliser learning style is accurate with some detail. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
1 Basic	**1 – 2**	Description of two ways in which Vicky could revise for a history test using a verbaliser learning style, is present. There may be inaccuracies/omissions. **OR** one way is described at level 2. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO2

- Make up a song or rap to help her remember key information for her history test.
- Record herself reading the information she needs to learn on her phone and then listen to the recording to help her remember key information for her history test.
- Listen to a podcast in which the key information she needs to learn is discussed.
- Work with a study buddy and take it in turns to explain key information they need to learn for their history test.

Credit description of other relevant revision techniques.

16	Read the following information. Ella and Jake are playing hide and seek. Eight-year-old Ella hides under her bed and is completely hidden. Jake, who is only five, hides behind a short curtain, so his legs can still be seen. Use Piaget's theory of cognitive development to explain the different hiding behaviours of Ella and Jake. **[6 marks]**

Marks for this question: AO1 - 3 marks and AO2 - 3 marks

Level	Marks	Description
3 Detailed	**5 – 6**	AO1: Relevant knowledge and understanding of Piaget's theory of cognitive development is accurate with detail. AO2: Clear application of knowledge and understanding of Piaget's theory of cognitive development to explain the hiding behaviours of Ella and Jake. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
2 Clear	**3 – 4**	AO1: Relevant knowledge and understanding of Piaget's theory of cognitive development is present but there are occasional inaccuracies/omissions. AO2: Reasonable application of knowledge and understanding of Piaget's theory of cognitive development to explain the hiding behaviours of Ella and/or Jake. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1 – 2**	AO1: Knowledge and understanding of Piaget's theory of cognitive development is present but limited. AO2: Limited application of knowledge and understanding of Piaget's theory of cognitive development to explain the hiding behaviours of Ella and/or Jake. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO1

- Egocentricism is when people can only see the world from their own point of view.
- Children under the age of seven are in the preoperational stage and are egocentric in their thinking.
- This means they think that what they see is the same as what everyone else sees.
- Children over the age of seven are in the concrete operational stage and are no longer egocentric in their thinking.
- This means they can work out what another person actually sees, which might be different from their own view of the world.

AO2

- Jake is in the preoperational stage and under seven, so is egocentric.
- When he hides, he assumes that others cannot see him if he cannot see them. He does not realise that other people can see his legs under the curtain when he hides.
- Ella is in the concrete operational stage and is no longer egocentric.
- When she hides, she can understand that people can still see her even when she can't see them. She hides under the bed because she knows that no one can see her there.

Credit other relevant information.

17	Briefly evaluate Piaget's theory of cognitive development. **[4 marks]**

Marks for this question: AO3 - 4 marks

Level	Marks	Description
2 Clear	**3 – 4**	Analysis and evaluation of Piaget's theory of cognitive development is effective. Any conclusions drawn are sound and fully expressed. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
1 Basic	**1 – 2**	Analysis and evaluation of Piaget's theory of cognitive development is of limited effectiveness or muddled. Any attempts to draw conclusions are not always successful. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO3

- Piaget underestimated children's abilities in his first three stages of development.
- Critical research such as Hughes 'policeman doll' study shows that children can think in more developed ways than Piaget suggested when they are tested in different ways.
- Piaget assumed that all children develop the ability to think in abstract and logical ways in the formal operational stage but research shows that this is not the case for all people.
- Piaget's theory has been very influential in education.
- Child centred learning with a focus on readiness and discovery learning has had a great impact on how children learn, particularly in early years and primary education.
- Piaget developed his theory using a small sample of children. They were middle class and from Switzerland. This means his findings may not tell us about the cognitive development of children from different social classes or cultures.
- His theory is not representative of all children.

Note: evaluation of a study with no link to the theory (max 1 mark).

Credit other relevant evaluations.

18	Describe and evaluate Willingham's learning theory. **[9 marks]**

Marks for this question: AO1 - 4 marks and AO3 - 5 marks

Level	Marks	Description
3 Detailed	**7 – 9**	AO1: Relevant knowledge and understanding of Willingham's learning theory is accurate with detail. AO3: Analysis and evaluation of Willingham's learning theory is effective. Conclusions drawn are sound and fully expressed. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning is clear, coherent and focused.
2 Clear	**4 – 6**	AO1: Relevant knowledge and understanding of Willingham's learning theory is present but there are occasional inaccuracies/omissions. AO3: There may be some effective analysis and evaluation of Willingham's learning theory. Any attempt to draw conclusions may be limited. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1 – 3**	AO1: Knowledge and understanding of Willingham's learning theory is present but limited. AO3: Analysis and evaluation of Willingham's learning theory is of limited effectiveness or may be absent. Any attempts to draw conclusions are very limited or muddled. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	**0**	No relevant content.

Possible content:

AO1

- Willingham criticised the learning style approach to teaching and says it does not improve learning.
- Willingham believed that students should be taught using the best method based on the content being taught rather than to their preferred learning style.
- For example when learning about maps, visual learning style should be used whereas for learning a new language, auditory/ verbal styles may be preferable.
- A student's ability to store the information is more important than how they learn it.
- His approach suggests it would be better for students to acquire the ability to use styles that are not their preferred style, so that when information is presented in non-preferred styles learners can still access the information.
- If a student struggles to learn a particular type of information, they should be given the opportunity to practise dealing with that type of information.
- Willingham suggests teaching and learning can be improved by the application of findings from cognitive psychology and neuroscience studies.
- Teaching children only in their preferred learning style will not improve their knowledge/ understanding/level of achievement.

Credit other relevant description.

AO3

- His criticism of the learning style approach is supported by evidence that shows teaching using a student's preferred learning style does not necessarily improve that student's results.
- Willingham's work can be applied to education to enhance learning, therefore his theory has real world value.
- Willingham's ideas are backed up by valid scientific evidence which is replicable meaning his theory is testable and valid.
- His ideas were criticised for not valuing modern day/21st century teaching.
- The theory has been criticised for discouraging creativity/imaginative learning.
- Willingham contradicts himself as some aspects of his theory suggest only facts are important whereas other aspects of the theory say that is not the case such as not relying too heavily on exams.
- The use of appropriate supporting or contradictory evidence/theories can be credited.

Credit other relevant evaluation.

Total Section C - 25 marks

Section D

Research Methods

19.1	Sketch a frequency table the researcher and her assistant can use to collect their results. Other than 'making phone calls' include **two** categories of behaviour in your frequency table. **[4 marks]**

Marks for this question: AO2 - 4 marks

- A sketch of a frequency table with rows and columns. (1 mark)
- Row or column headings for males **and** females. (1 mark)
- Identification of **two** categories of behaviour. (max 2 marks)

Do not credit 'making phone calls'

Example of frequency table

Behaviour	Males	Females
Behaviour 1		
Behaviour 2		

19.2	Outline **two** ways the researcher and her assistant could make sure they have high interobserver reliability in their study. **[2 marks]**

Marks for this question: AO2 - 2 marks

1 mark each for any of the following (max 2 marks)

- Use the same record sheet to observe and record behaviour.
- Observe the same group at the same time.
- Observers should compare their data.

Credit other relevant ways.

20.1	Explain what is meant by ethical issues in psychological research. **[2 marks]**

Marks for this question: AO1 - 2 marks

2 marks: a clear and accurate explanation.

1 mark: a limited or muddled attempt at an explanation.

Possible content:

- Ethical issues are concerns about what is morally right or wrong when using participants in research.
- Ethical issues are when there is conflict between the needs of the research and the rights of participants.

Credit other relevant explanations.

Note: Simply stating various ethical issues is not creditworthy.

20.2	Explain how the researcher might deal with the lack of consent in this study. **[2 marks]**

Marks for this question: AO2 - 2 marks

2 marks: a clear and accurate explanation.

1 mark: a limited or muddled attempt at an explanation.

Possible content:

AO2

- The researcher could approach people as they are leaving the café and explain that a study was conducted and say what they were trying to find out.
- The researcher could give them a leaflet that explains what has happened as they are leaving.
- The researcher can check that they are happy for the record of their behaviour to be kept and if not the researcher will remove it from the study.
- The researcher could ask them to sign that as they have now been informed they agree to be included in the study.
- The researcher could conduct a debrief and give participants the opportunity to withdraw their data/ results.

Credit other relevant explanations.

21	Read the following information. The researcher is also interested in whether or not there is a difference in how long males and females spend using their mobile phone each day. She decides to study this by asking a sample of 10 males and 10 females in the café to complete a questionnaire about their daily phone use. Write a suitable hypothesis for this study. **[2 marks]**

Marks for this question: AO2 - 2 marks

2 marks: there must be both conditions of the IV and a clear DV which makes the statement operational.

1 mark: the hypothesis lacks some clarity.

Examples:
Females spend more time using their mobile phones than males. (2 marks)
There is/will be no difference in the number of minutes males and females use their phone each day. (2 marks)
Females use their phones more than males. (1 mark)
Females spend more minutes on their phones. (1 mark)

Note: Do not accept aims, questions, correlational statements or statements of the results (e.g. was/did /used.)

Credit other relevant alternative or null hypotheses.

22.1	What is meant by an extraneous variable? **[1 mark]**

Marks for this question: AO1 - 1 mark

1 mark for a clear definition

- something other than the independent variable that can affect the dependent variable.

22.2	Identify **one** extraneous variable the researcher needs to consider and suggest how this variable may affect the results if she does not deal with it. **[3 marks]**

Marks for this question: AO2 - 1 mark and AO3 - 2 marks

AO2

1 mark for any relevant extraneous variables, such as age, income or career of participants.

Note: Reference to male and female or sex is not creditworthy.

PLUS

AO3

2 marks: a clear and accurate description of how the extraneous variable may affect how long they may use the phone for.

1 mark: a limited or muddled description of how the extraneous variable may affect how long they may use the phone for.

Accept other suggestions relevant to the use of a questionnaire or observation in this study.

23.0	Outline **one** problem that might occur because the researcher is using a questionnaire to collect her data. **[2 marks]**

Marks for this question: AO3 - 2 marks

2 marks: a clear and accurate description of a problem in the context of this study.

1 mark: a limited or muddled attempt at a description **OR** no link to this study.

Possible content:

AO3

- People may provide socially desirable responses rather than truthful ones. For example, they may record lower daily phone use than they actually use.
- There is no way to check that the data provided by participants is accurate. This means data may not be a reliable measure of daily phone use.
- When filling in a questionnaire, respondents may be unable to ask the researcher for clarification of the questions. For example, the respondent may want to ask if phone use includes talk time only or internet use too.
- Only a certain type of person may agree to fill in a questionnaire about phone use, i.e. those who do not use their phone a lot. Therefore, the results may not be generalisable to everyone.

Credit other relevant problems.

Table 2: The daily phone use of males and females.

Males	Daily phone use (minutes)	Females	Daily phone use (minutes)
1	120	1	80
2	25	2	75
3	50	3	200
4	80	4	60
5	170	5	95
6	15	6	100
7	180	7	120
8	30	8	175
9	100	9	55
10	190	10	140
Mean phone use in minutes	96	Mean phone use in minutes	110

24	Use the graph paper to sketch a suitable bar chart to show the mean results shown in **Table 2**. Provide a suitable title and labels for your diagram. **[3 marks]**

Marks for this question: AO2 - 3 marks

1 mark for each of the following

- Informative title, for example, a bar chart to show the average daily phone use of males and females.
- Correct labelling of both axes, for example Y axis labelled 'mean/phone use in minutes' or 'time in minutes'.
- Correct plotting of the results – average daily phone use of males = 96 minutes and average daily phone use of females = 110 minutes.

Note: If bars are touching then no credit can be given for correct plotting.

25.1	Calculate the range for the daily phone use of males **and** females. **[2 marks]**

Marks for this question: AO2 - 2 marks

1 mark: range of males = 175 or 176

1 mark: range for females = 145 or 146

25.2	Use the ranges you calculated in Question **25.1** to write **one** conclusion the researcher could draw from the information collected in her questionnaires. **[2 marks]**

Marks for this question: AO3 - 2 marks

2 marks: a clear conclusion.

1 mark: a limited or muddled conclusion.

Possible content:

AO3

- There is more variation in how long males spend using their phone each day compared to how long females spend using their phone. This is because the range for males (175/176 mins) is higher than that for females (145/146 mins)

Accept other relevant conclusions using the ranges calculated in 25.1

Total Section D - 25 marks