A2 Psychology Exam Preparation

Memory

Exam style questions and Mark Schemes

Beechen Cliff School

For your information;

This booklet contains exam questions from specimen papers and past papers from both the new specification and the old one for AS and A2. Several may be very similar, I just wanted to provide you with all of the questions I have available. Mark schemes are in question order at the back of this booklet.

Exam questions from the old spec are slightly different in phrasing and mark scheme but are still useful practice and preparation.

Old spec questions have RED boxes around them.

AS questions have BLUE boxes around them.
Describe and evaluate the working memory model of memory. [16 marks]

Complete the missing parts of the table, A, B, C and D, in relation to features of the multi-store model of memory. [4 marks]

<table>
<thead>
<tr>
<th></th>
<th>Capacity</th>
<th>Duration</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensory register</td>
<td>A</td>
<td>250 milliseconds</td>
<td>Modality specific</td>
</tr>
<tr>
<td>Short-term memory</td>
<td>7 +/- 2</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Long-term memory</td>
<td>Unlimited</td>
<td>Potentially forever</td>
<td>D</td>
</tr>
</tbody>
</table>

Bryan has been driving for five years. Whilst driving, Bryan can hold conversations or listen to music with little difficulty.

Bob has had four driving lessons. Driving requires so much of Bob’s concentration that, during lessons, he often misses what his driving instructor is telling him.

With reference to features of the working memory model, explain the different experiences of Bryan and Bob. [4 marks]

A woman is being questioned by a police officer about a heated argument she witnessed on an evening out with friends. The argument took place in a bar and ended with a violent assault. A knife was discovered later by police in the car park of the bar.

‘Did you see the knife the attacker was holding?’ asked the police officer.

‘I’m not sure there was a knife – yes, there probably was,’ replied the woman. ‘I was so scared at the time that it’s hard to remember, and my friends and I have talked about what happened so many times since that I’m almost not sure what I did see.’

Discuss research into two or more factors that affect the reliability of eyewitness testimony. Refer to the information above in your answer. [16 marks]
Psychologists conducted a case study of Patient X, an individual who developed severe amnesia following a car accident. Patient X has difficulty storing new long-term memories, though his short-term memory and his memory for events that happened before the accident are unaffected.

Briefly explain how the experiences of Patient X could be interpreted as supporting the multi-store model of memory.

The same psychologists conducted an experiment with Patient X where he was given the task of tracking a rotating disc every day for a week. It was found that Patient X’s performance on the task improved with practice, though he had no recollection of ever having done the task, and could not remember the names of the psychologists who conducted the experiment.

With reference to the experiment involving Patient X, outline two types of long-term memory.

Discuss two differences between the types of long-term memory you have outlined in your answer to question 06.

Outline retrieval failure as an explanation for forgetting.

Explain how the cognitive interview is used to improve the accuracy of eyewitness testimony.
05.1 Complete the following statement about long-term memory. Shade one box only.

Information stored with reference to time and place refers to:

A. Episodic memory
B. Procedural memory
C. Semantic memory

[1 mark]

05.2 Complete the following statement about long-term memory. Shade one box only.

Information not available for conscious inspection refers to:

A. Episodic memory
B. Procedural memory
C. Semantic memory

[1 mark]

07 Identify and outline two techniques that may be used in a cognitive interview.

[4 marks]

08 Outline and evaluate research into the effects of leading questions on the accuracy of eyewitness testimony.

[8 marks]
Figure 1 is a diagram of the working memory model. Write the name of each of the four components of working memory in the space provided.

Figure 1

______________________

______________________

______________________

______________________

[4 marks]

Read the item and then answer the questions that follow.

A researcher investigating the multi-store model of memory tested short-term memory by reading out loud sequences of numbers that participants then had to repeat aloud immediately after presentation. The first sequence was made up of three numbers: for example, 8, 5, 2. Each participant was tested several times, and each time the length of the sequence was increased by adding another number.

Use your knowledge of the multi-store model of memory to explain the purpose of this research and the likely outcome.

[4 marks]

After the study was completed, the researcher decided to modify the study by using sequences of letters rather than numbers.

Suggest one 4-letter sequence and one 5-letter sequence that the researcher could use. In the case of each sequence, give a justification for your choice. Use a different justification for each sequence.

[4 marks]
Read the item and then answer the question that follows.

Martin is studying for his modern language exams. He revises French followed by Spanish on the same night and then gets confused between the two: for example, he remembers the French word for ‘chair’ instead of the Spanish word for ‘chair’. Sometimes, his mum helps to test Martin’s vocabulary. When he is unable to remember a word, his mum tells him the first letter, then he can often recall it correctly.

Discuss two explanations for forgetting. Refer to Martin’s experiences in your answer.

[12 marks]

A psychologist devised a memory test and tested 200 participants. The results are shown in the distribution graph shown in Figure 1 below.

Figure 1

The psychologist decides to modify the memory test so that it will produce a more normal distribution. Briefly explain how he might achieve this.

[4 marks]
Melissa was on her way to college when she saw a man attack a cyclist and steal his bike. She was really upset about what she had seen, and when she got to college, everyone wanted to talk to her about it. Luke asked her whether the man was wearing a brown jacket.

From the description above, identify **three** factors affecting the accuracy of eyewitness testimony. How might **each** factor affect Melissa's memory of the event?  

**0|8**

Describe interference as an explanation for forgetting.  

**0|9**

Outline and evaluate the multi-store model of memory.  

**1|0**

Outline what psychological research has shown about short-term memory according to the multi-store model of memory.  

**0|5**

Annie can still skateboard even though she hasn't skated for many years. Germaine can still recall what happened on his first day at university even though it was ages ago. Billy remembers the names of the tools he needs to repair the broken tap.

Identify **three** types of long-term memory and explain how **each** type is shown in **one** of the examples above.  

**0|6**
Below are five evaluative statements about the cognitive interview. Which two statements are correct?

Shade two boxes only.

The cognitive interview...

A can only be used in Western cultures.
B takes longer than the standard interview.
C involves unethical treatment of witnesses.
D requires special training of police officers.
E cannot be used to interview children.

[2 marks]

Discuss what psychological research has shown about working memory. In your answer, refer to theory and/or evidence.

[12 marks]

Total for this question: 4 marks

1 According to the multi-store model of memory, there are several ways in which short-term memory and long-term memory differ.

Explain how the findings of one or more studies demonstrate that short-term memory and long-term memory are different.

Total for this question: 4 marks

2 Briefly describe the working memory model.

Total for this question: 4 marks

5 Outline how a cognitive interview can be used to improve the accuracy of eyewitness testimony (EWT).
1. Research has found that short-term memory and long-term memory differ in their capacity and duration.

What is meant by ‘capacity’ in memory research? [1 mark]

What is meant by ‘duration’ in memory research? [1 mark]

3. The working memory model includes the central executive, the phonological loop and the visuo-spatial sketchpad. Outline the main functions of the phonological loop and the visuo-spatial sketchpad. [4 marks]

5. Outline and evaluate one or more research studies which have investigated the accuracy of eyewitness testimony. [12 marks]

2 (a). Describe the multi-store model of memory. [6 marks]

2 (b). Explain two limitations of the multi-store model of memory. [4 marks]

3. Marsha was walking to work when she saw a knife attack. The victim was badly injured. Marsha was the only witness to the knife attack.

Explain how a police officer could use one or more cognitive interview techniques to find out what Marsha could recall about the attack. [4 marks]
4 Outline one research study of the effect of anxiety on eye-witness testimony. In your answer you should include details of what participants were asked to do and the results of the study. [6 marks]

5 Explain one possible limitation of research into the effect of anxiety on eye-witness testimony. [2 marks]

1 1 Psychologists have identified differences between episodic memory, procedural memory and semantic memory.

Define two of these types of memory. Briefly explain one difference between the two types of memory that you have defined. (3 marks)

1 3 Claire can search through family photos on her laptop and listen to music at the same time. However, she finds it difficult to read her e-mails when talking to a friend on the phone.

Use your knowledge of the working memory model to explain why Claire is able to perform the first two tasks at the same time, but finds it difficult to perform the second two tasks at the same time. (4 marks)

1 5 Outline one study in which the Working Memory model has been investigated. In your answer, refer to what the psychologist(s) did and what was found. [3 marks]

1 6 Briefly explain one strength of the Working Memory model. [2 marks]

1 7 What is meant by 'procedural memory'? Give an example. [2 marks]
A researcher wanted to investigate whether or not different types of long-term memory were located in different parts of the brain. He gave a group of participants two different tasks to do.

**Task A** – To think about family holidays they had been on as a child.

**Task B** – To think of the names of countries around the world and their capital cities.

Whilst each participant was performing the tasks, his/her brain activity was monitored using a scanner. The researcher found that a different area of the brain was active when participants were performing **Task A** compared with when they were performing **Task B**.

Identify the type of long-term memory involved in performing **Task A** in the investigation above.

[1 mark]

Identify the type of long-term memory involved in performing **Task B** in the investigation above.

[1 mark]

Apart from the finding that such memories are located in different areas of the brain, outline one other difference between the types of long-term memory you have identified in your answers to questions 0 9 and 1 0 above.

[2 marks]

Outline one study in which a factor affecting the reliability of eye-witness accounts was investigated. Your outline should refer to the method used and the results/conclusion of the study.

[2 marks]

Briefly discuss one limitation of the study you have described in your answer to question 1 3.

[2 marks]

Discuss influences of post-event contamination on eye-witness accounts. Refer to evidence in your answer.

[12 marks]
05 Describe and evaluate the working memory model of memory. [16 marks]

Marks for this question: AO1 = 6 and AO3 = 10

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>13–16</td>
<td>Knowledge of components and functioning of model is accurate and generally well detailed. Evaluation is thorough and effective. The answer is clear, coherent and focused. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking.</td>
</tr>
<tr>
<td>3</td>
<td>9–12</td>
<td>Knowledge of components of model is evident and there is some reference to function of model. There are occasional inaccuracies. Evaluation is apparent and mostly effective. The answer is mostly clear and organised. Specialist terminology mostly used effectively. Lacks focus in places.</td>
</tr>
<tr>
<td>2</td>
<td>5–8</td>
<td>Knowledge of some components of model is present. Focus is mainly on description. Any evaluation is only partly effective. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.</td>
</tr>
<tr>
<td>1</td>
<td>1–4</td>
<td>Knowledge of model is limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

AO1 Content:
- version of STM which sees this store as an active processor
- description of central executive and ‘slave systems’ – visuo-spatial scratch/sketch pad; phonological store/loop; articulatory loop/control process; primary acoustic store; episodic buffer (versions vary – not all of slave systems need to be present for full marks)
- information concerning capacity and coding of each store
- allocation of resources/divided attention/dual-task performance.

AO3 Possible evaluation points:
- strengths include: explains how cognitive processes interact; memory is active rather than passive; provides explanation/treatments for processing deficits; highlights different memory tasks that STM can deal with by identifying separate components; explains results of dual task studies
- limitations include: vague, untestable nature of the central executive; supported by highly controlled lab studies which may undermine the validity of the model
- use of evidence to support or refute the model
- credit other relevant evaluative points.

Only credit evaluation of the methodology used in studies when made relevant to discussion of the model.

06 Complete the missing parts of the table, A, B, C and D, in relation to features of the multi-store model of memory. [4 marks]

Marks for this question: AO1 = 4

A = Unlimited
B = 18–30 seconds
C = Acoustic/phonetic/sound-based
D = Semantic
With reference to features of the working memory model, explain the different experiences of Bryan and Bob.

**Marks for this question: AO2 = 4**

<table>
<thead>
<tr>
<th>Level</th>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3–4</td>
<td>Knowledge of relevant features of the working memory model is clear and accurate. The application of these to the scenario is effective. At the top of the band there must be reference to both characters in the stem. Specialist terminology is used effectively.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Knowledge of relevant features of the working memory model lacks clarity/accuracy/detail. Application may be limited or absent. Specialist terminology is not always used effectively.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

**Possible content:**
- Reference to attentional capacity/capacity of the central executive – because driving is an 'automated' task for Bryan, it makes fewer attentional demands on his central executive so he is free to perform other tasks (such as talking or listening to music); this is not the case for Bob who requires all of his attentional capacity for driving.
- Credit reference to Bob’s inability to dual-task and to divide resources effectively between components of working memory.
- Credit the idea that Bryan is able to divide resources between his visuo-spatial scratch/sketch pad (driving) and articulatory control process/articulatory/phonological loop/primary acoustic store (talking and listening to music) and thus to dual-task.

Accept other valid applications of the model.
Discuss research into **two or more** factors that affect the reliability of eyewitness testimony. Refer to the information above in your answer.

[16 marks]

Marks for this question: AO1 = 6, AO2 = 4 and AO3 = 6

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>13—16</td>
<td>Knowledge of research into two or more factors is accurate and generally well detailed. Discussion is thorough and effective. Application to the stem is appropriate and links between factors and stem content are explained. The answer is clear, coherent and focused. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking.</td>
</tr>
<tr>
<td>3</td>
<td>9—12</td>
<td>Knowledge of research into two or more factors is evident. Discussion is apparent and mostly effective. There are occasional inaccuracies. Application to the stem is appropriate although links to the factors are not always well explained. The answer is mostly clear and organised. Specialist terminology mostly used effectively. Lacks focus in places.</td>
</tr>
<tr>
<td>2</td>
<td>5—8</td>
<td>Knowledge of research into at least two factors is present but is vague/inaccurate or research into one factor only is present. Focus is mainly on description. Any discussion is only partly effective. Application to the stem is partial. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.</td>
</tr>
<tr>
<td>1</td>
<td>1—4</td>
<td>Knowledge of research into factor(s) is limited. Discussion is limited, poorly focused or absent. Application is limited or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

**AO1 Content**

Knowledge of research into two or more factors affecting the accuracy of eyewitness testimony (usually those named in the specification and implied in the stem)

Misleading information, including leading questions:

- Loftus and Palmer’s (1974) experiment where the verb in the critical question was changed (smashed, collided, bumped, hit or contacted)
- Loftus and Palmer: “Did you see any broken glass?”
- Loftus et al (1978) study using a red Datsun and Stop or Yield signs.
- Research relating to age in relation to misleading information could also be relevant: eg Warren et al (2005) found adults less likely to be influenced by leading questions than children
- Credit other relevant research/theory: eg post-event contamination; confabulation; reconstructive memory/the formation of schemas; confabulation.

**Anxiety**:

- Loftus’s (1979) weapon focus experiment found that more participants correctly identified a person holding a pen (49%) than a person holding a knife covered in blood.
- Loftus and Burns (1982) found that participants who saw a violent version of a crime where a boy was shot in the face had impaired recall for events leading up to the accident.
- Peters (1988) found that participants who visited a healthcare centre were better able to recognise a researcher than a nurse who gave an injection.
• Yuille and Cutshall (1986) found that witnesses who had been most distressed at the time of a shooting gave the most accurate account five months later.
• Christanson and Hubinette (1993) found that victims of genuine bank robberies were more accurate in their recall than bystanders.
• Credit other relevant research/theory: eg the Yerkes-Dodson law of arousal.

Post-event discussion:
• Source monitoring theory; effects of conformity; Bodner et al (2009) – the effects of post-event discussion can be reduced if witnesses are warned of its effects.

AO2 Application points
• Links to leading questions – ‘Did you see the knife?’ (as opposed to a knife); question from officer is leading the witness who was not sure that there was a knife in the first place.
• Links to anxiety – witness claims that she was ‘so scared’ when the incident took place; this may inhibit or enhance her memory depending upon how severe the fear was.
• Links to post-event discussion – ‘my friends and I have talked about what happened so many times since that I’m almost not sure what I did see’.

AO3 Discussion points
Will depend on research chosen but might include:
• Issue of validity in laboratory studies or lack of control in real-life situations
• Methodological issues, including sampling, replication and corroboration with other studies
• Ethical issues
• Practical applications/implications of the research: eg development of cognitive interview

Credit other relevant evaluation points.

05  Briefly explain how the experiences of Patient X could be interpreted as supporting the multi-store model of memory.  [2 marks]

Marks for this question: AO2 = 2

1 mark for the link to the MSM: this suggests that STM and LTM are separate stores/functionally different (supporting the model).

Plus

1 mark for the idea that whilst Patient X’s STM is functioning normally, he is unable to retain new info in LTM/the link between STM and LTM appears to have been cut.
06 With reference to the experiment involving Patient X, outline two types of long-term memory.  

[4 marks]

**Marks for this question AO2 = 4**

2 marks for an outline of two types of LTM from the following (1 for each type):
- Episodic – memory for events/autobiographical memory
- Semantic – memory for facts/general knowledge/the rules of language
- Procedural – memory for motor skills/actions/muscle memory/

**Plus**

2 marks for linking the two types to the information in the stem (1 for each type):
- Episodic – he had no recollection of ever doing the task
- Semantic – he could not remember the names of the psychologists
- Procedural – his performance improved on the rotating disc task over consecutive days

07 Discuss two differences between the types of long-term memory you have outlined in your answer to question 06.  

[4 marks]

**Marks for this question AO3 = 4**

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3–4</td>
<td>Discussion of two differences is clear and mostly accurate. For full marks, there must be reference to both types of memory within each difference discussed. The answer is generally coherent with effective use of specialist terminology.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Discussion of two differences are both incomplete/partly accurate. For 1 mark there may be one difference briefly stated. Specialist terminology is not always used appropriately.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

**Content:**
Possible differences (depends on the types of LTM chosen):
- Semantic/episodic – 'knowing that'/declarative memory; available for conscious inspection  
  – procedural – 'knowing how'/non-declarative memory; often unavailable for conscious inspection
- Semantic – may not recall when we learned/encoded these memories – episodic – stored with reference to time and place
- Credit differences based on the durability/resistance to forgetting of different types of memory
- The fact that evidence suggests that these types of memory reside in different areas of the brain
- Credit use of evidence as part of the discussion of the differences.

Credit other valid differences.

Do not credit differences that merely restate the definitions of both types of memory.
Outline retrieval failure as an explanation for forgetting.

Marks for this question: AO1 = 3

Possible content:
- forgetting occurs in the absence of appropriate cue/prompts/triggers/clues/‘tip-of-the-tongue’ forgetting
- **context dependent** – being in a different place may inhibit memory
- **state dependent** – being in a different mood/state of arousal may inhibit memory
- **category dependent** – lack of organisation may inhibit memory
- credit reference to the encoding specificity principle
- credit explanation if embedded within an example

1 mark for naming types only
2 marks only if answer is couched in terms of ‘remembering’ rather than forgetting

Credit other relevant material.
09 Explain how the cognitive interview is used to improve the accuracy of eyewitness testimony.

[6 marks]

Marks for this question: AO1 = 6

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>5–6</td>
<td>Knowledge of the cognitive interview is clear and accurate. There is a clear explanation of how it improves the accuracy of eyewitness testimony. The answer is clear and coherent. Specialist terminology is used effectively.</td>
</tr>
<tr>
<td>2</td>
<td>3–4</td>
<td>Knowledge of the cognitive interview is present though there may be some inaccuracy/lack of clarity. There is some explanation of how it improves eyewitness testimony. The answer is mostly clear and organised. There is some appropriate use of specialist terminology.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Knowledge of the cognitive interview is briefly stated with little elaboration. The explanation of how it improves eyewitness testimony may be partial or absent. The answer may include inaccuracies and be poorly organised. Specialist terminology is either absent or inappropriately used.</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Possible content:
Not all features of the cognitive interview need to be covered for full marks:
- Context reinstatement – trying to mentally recreate an image of the situation, including details of the environment, the individual's emotional state including their feelings at the time of the incident – may all act as cues/triggers to recall
- Recall from a changed perspective – trying to mentally recreate the situation from different points of view e.g. describing what another witness present at the scene would have seen – promotes more 'holistic' view of the event which may enhance recall
- Recall in reverse order – the witness is asked to describe the scene in a different chronological order e.g. from the end to the beginning – to verify accuracy
- Report everything – the interviewer encourages the witness to report all details about the event, even though these details may seem unimportant – may highlight something that has been 'overlooked'

The main additional features of the enhanced cognitive interview are:-
- Encourage the witness to relax and speak slowly – reduction in anxiety may enhance recall
- Offer comments to help clarify witness statements – may improve detail of statement
- Credit links to theory to explain how accuracy may be improved eg retrieval failure – importance of context
05.1 Complete the following statement about long-term memory. Shade one box only. Information stored with reference to time and place refers to:

[1 mark]

Marks for this question: AO1 = 1

A

05.2 Complete the following statement about long-term memory. Shade one box only. Information not available for conscious inspection refers to:

[1 mark]

Marks for this question: AO1 = 1

B

07 Identify and outline two techniques that may be used in a cognitive interview.

[4 marks]

Marks for this question: AO1 = 4

<table>
<thead>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3–4</td>
<td>Two techniques are clearly identified and outlined. Minor detail of outline is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sometimes lacking or there is slight inaccuracy. The answer as a whole is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>clear with use of specialist terminology.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Two techniques are identified. The outline lacks detail/accuracy. The answer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>as a whole lacks clarity. Specialist terminology is either absent or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inappropriately used. OR one technique at Level 2.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Possible content:
- reinstating the context – interviewee mentally reinstates the environmental and personal context of the incident, eg sights, sounds, weather etc
- report everything – interviewer encourages the reporting of every single detail of the event, even though it may seem irrelevant
- changing order – interviewer tries alternative ways through the timeline of the incident
- changing perspective – interviewee recalls from different perspectives, eg how it would have appeared to other witnesses.

Credit other relevant cognitive interview techniques.
Outline and evaluate research into the effects of leading questions on the accuracy of eyewitness testimony.

Marks for this question: AO1 = 4 and AO3 = 4

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>7–8</td>
<td>Knowledge of research into effects of leading questions is accurate and generally well detailed. Evaluation is effective. The answer is clear, coherent and focused on the accuracy of eyewitness testimony. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking.</td>
</tr>
<tr>
<td>3</td>
<td>5–6</td>
<td>Knowledge of research into effects of leading questions is evident and there is some focus on accuracy of eyewitness testimony. There are occasional inaccuracies. There is some effective evaluation. The answer is mostly clear and organised. Specialist terminology mostly used effectively.</td>
</tr>
<tr>
<td>2</td>
<td>3–4</td>
<td>Knowledge of research into effects of leading questions is present although links to accuracy of eyewitness testimony are limited. Focus is mainly on description. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Knowledge of research into effects of leading questions is limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used.</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Possible content:
- Loftus and Palmer’s (1974) study changing verb in critical question was changed (smashed, collided, bumped, hit or contacted)
- Loftus and Palmer “Did you see any broken glass?”
- Loftus et al’s (1978) study using a red Datsun and Stop or Yield signs
- research into anxiety and EWT is not relevant without reference to leading questions, eg Yuille and Cutshall study of a real-life shooting and resistance to leading questions
- research into age of witness and misleading information may be relevant, eg Warren et al (2005) found children more likely to be influenced by leading questions than adults
- credit any other relevant research, studies and/or theories, eg post-event contamination; confabulation; reconstructive memory.

Possible evaluation points:
Will depend on research chosen but might include:
- question of validity in laboratory studies or lack of control in real-life situations
- methodological issues including sampling, replication and corroboration with other studies
- ethical issues
- practical applications/implications of the research.

Credit other relevant evaluation points.
Figure 1 is a diagram of the working memory model. Write the name of each of the four components of working memory in the space provided.

Marks for this question: AO1 = 4

1 mark for naming each component correctly. The central executive will need to be in the correct position (top box) but the other three components can appear in any of the remaining boxes.

Accept also ‘phonological store’ and visuo-spatial scratchpad’ as alternatives.

Use your knowledge of the multi-store model of memory to explain the purpose of this research and the likely outcome.

Marks for this question: AO2 = 4

1 mark for each valid point as follows:
- **purpose** is to test the capacity of short-term memory
- short-term memories are coded **verbally/ acoustically**/task requires verbal rehearsal
- **outcome** – most of the people tested would be able to repeat correctly a sequence of between 5 and 9 items
- because according to the multi-store model, short-term memory has a limited capacity of 7 + or - 2
07 Suggest one 4-letter sequence and one 5-letter sequence that the researcher could use. In the case of each sequence, give a justification for your choice. Use a different justification for each sequence.

[4 marks]

Marks for this question: AO3 = 4

1 mark for an appropriate 4-letter sequence (to be creditworthy, this sequence should not make up a word or a recognisable abbreviation of a word, be a recognisable acronym or include multiple repetitions, eg 'p.p.p.p')

Plus

1 mark for appropriate 5-letter sequence (to be creditworthy this sequence should not make up a word or a recognisable abbreviation of a word, be a recognisable acronym or include multiple repetitions eg 'p.p.p.p.p', have any similarity to/connection with the 4-letter sequence (eg partial repetition, rhyme with)

Plus

1 mark each for any two valid justification points: eg
- words – have meaning – can be recalled as wholes
- recognisable abbreviations – have meaning – can be recalled as wholes
- acronyms – have meaning – can be recalled as whole
- multiple repetitions – reduce cognitive demand
- rhyming letters – reduce cognitive demand

Do not accept the statement ‘letters must be random’ without further elaboration because random selection could, by chance, result in a word, acronym etc.
Discuss two explanations for forgetting. Refer to Martin’s experiences in your answer.

Marks for this question: AO1 = 6, AO2 = 2 and AO3 = 4

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>10–12</td>
<td>Knowledge of two explanations for forgetting is accurate and generally well detailed. Discussion is mostly effective. Application to the stem is appropriate, with clear links between the explanations and the stem content. The answer is clear, coherent and focused. Specialist terminology is used effectively. Minor detail and/or expansion sometimes lacking.</td>
</tr>
<tr>
<td>3</td>
<td>7–9</td>
<td>Knowledge of two explanations for forgetting is evident. Discussion is apparent and mostly effective. There are occasional inaccuracies. Application to the stem is appropriate although links to explanations are limited/absent. The answer is mostly clear and organised. Specialist terminology is mostly used appropriately. Lacks focus in places.</td>
</tr>
<tr>
<td>2</td>
<td>4–6</td>
<td>Knowledge of two explanations is present. Focus is mainly on description. Any discussion is of limited effectiveness. Any application to the stem is partial. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions. OR one explanation answered at Level 3 or 4.</td>
</tr>
<tr>
<td>1</td>
<td>1–3</td>
<td>Knowledge of explanation(s) is (are) limited. Discussion/application is very limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used. OR one explanation answered at Level 2.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Possible Content:
- Interference is an explanation for forgetting – two sets of information become confused
- Proactive interference is where old learning prevents recall of more recent information
- Retroactive interference is where new learning prevents recall of previously learned information
- Retrieval failure is where information is available but cannot be recalled because of the absence of appropriate cues
- Types of cues that have been studied by psychologists include context, state and organisation
- Cues improve recall if recall is in same context as learning, if the person is in same bodily state as when material was learned, if the organisation gives a structure which provides triggers, eg categories.

Application:
- French and Spanish are similar types of material which makes interference more likely
- Recalling French word for ‘chair’ is proactive interference.
- Martin’s mum gives him cues (first letter) which can then be used for him to access the material he has failed to retrieve

Possible discussion:
- Use of evidence to support or contradict explanations
- Credit evaluation of evidence where used to discuss explanations
- Question of whether interference involves over-writing of other information
- Role of similarity in interference and response competition
- Issue of accessibility versus availability
- Semantic memory more resistant to interference than other types of memory
- General implications for revision and other situations
- Relevant links to memory theory: eg stage at which interference might occur in the multi-store model

Credit other relevant information.
07  The psychologist decides to modify the memory test so that it will produce a more normal distribution. Briefly explain how he might achieve this.

Marks for this question: AO2 = 2, AO3 = 2

Credit application of knowledge of normal distribution and how to achieve this through modification of test as follows:

1 mark each for any four of the following points:

- Adjust the difficulty of the test
- To make the test more demanding/harder
- So that fewer people get a very high mark
- Most people get a medium mark (a few people get a very low mark and a few people get a very high mark)
- So it will achieve a more normal distribution (credit use of diagram to illustrate)

08  From the description above, identify three factors affecting the accuracy of eyewitness testimony. How might each factor affect Melissa’s memory of the event?

Marks for this question: AO2 = 6

1 mark for each factor in the stem

Plus

1 mark each for stating how the factor might affect Melissa’s recall

Content:

- Anxiety/upset – Melissa’s memory may be worse because of distraction/arousal OR better because she was more alert
- Post-event discussion – Melissa’s memory may be less accurate because she confuses her original memory with what other people say to her
- Leading Questions – Melissa may incorrectly recall what the man was wearing because of Luke’s question

Other factors affecting EWT are not creditworthy because they do not appear in the stem.
Describe interference as an explanation for forgetting.

Marks for this question: AO1 = 6

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5–6</td>
<td>Knowledge of retroactive and proactive interference as explanations for forgetting is clear and generally well detailed. The answer is generally coherent with appropriate use of terminology.</td>
</tr>
<tr>
<td>2</td>
<td>3–4</td>
<td>Knowledge of interference as an explanation for forgetting is evident. The answer lacks clarity in places. Terminology is used appropriately on occasions.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Knowledge of interference as an explanation for forgetting is limited. The answer as a whole lacks clarity and has inaccuracies. Terminology is either absent or inappropriately used.</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Content:
- Interference where two lots of information become confused in memory
- Proactive interference is where old learning affects recall of new information
- Retroactive interference is where new learning affects recall of old information
- Newer information may overwrite earlier information
- Interference occurs more when the two lots of information are similar
- Interference is less likely to occur when there is a gap between the instances of learning

Credit other relevant information.
Outline and evaluate the multi-store model of memory.

Marks for this question: AO1 = 4, AO3 = 4

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>7–8</td>
<td>Knowledge of the multi-store model, including reference to capacity duration and coding in the separate stores, is accurate and generally well detailed. Evaluation is effective. The answer is clear and coherent. Specialist terminology is used effectively. Minor detail and/or expansion of argument sometimes lacking.</td>
</tr>
<tr>
<td>3</td>
<td>5–6</td>
<td>Knowledge of the multi-store model is evident. There are occasional inaccuracies and some omissions. There is some effective evaluation. The answer is mostly clear and organised. Specialist terminology mostly used effectively.</td>
</tr>
<tr>
<td>2</td>
<td>3–4</td>
<td>Knowledge of the multi-store model is present. Focus is mainly on description. Any evaluation is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology used inappropriately on occasions.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Knowledge of the multi-store model is limited. Evaluation is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology either absent or inappropriately used.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Possible content:
- Separate memory stores – sensory register, STM, LTM
- Capacity of each store
- Duration of each store
- Coding/mode within each store
- Functioning/dynamics of the model: eg role of rehearsal

Possible evaluation points:
- View of stores as unitary – contrast with different types of LTM
- Static view of STM contrasted with WMM
- Rehearsal – discussion of maintenance versus elaborative
- Use of evidence to support the model
- Use of evidence to contradict the model

Credit also clearly labelled diagram.

Credit other relevant information.
Question 5

Outline what psychological research has shown about short-term memory according to the multi-store model of memory.

[4 marks]

Marks for this question: AO1 = 4

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3–4</td>
<td>Outline of what psychological research has shown about STM is clear and includes detail. The answer is generally coherent with effective use of terminology.</td>
</tr>
<tr>
<td>1</td>
<td>1–2</td>
<td>Outline of what psychological research has shown about STM is present but lacks detail. The answer as a whole is not clearly expressed. Terminology is either absent or inappropriately used.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

Content:
- Capacity is thought to be 7 items plus or minus 2 items (between 5 and 9). Capacity can be increased by chunking items together to reduce the number of separate items overall.
- Duration is thought to be approximately 18-30 seconds. Duration can be extended by verbal rehearsal i.e. information can be maintained in the rehearsal loop.
- Coding is acoustic, sound based, phonological, auditory. Causes confusion where material sounds the same.

A detailed outline of one aspect (capacity, duration, coding) can be awarded full marks.

Credit other relevant material e.g. ways of forgetting from STM e.g. displacement.
Question 6

Annie can still skateboard even though she hasn’t skated for many years. Germaine can still recall what happened on his first day at university even though it was ages ago. Billy remembers the names of the tools he needs to repair the broken tap.

Identify three types of long-term memory and explain how each type is shown in one of the examples above.

[6 marks]

Marks for this question: AO2 = 6

1 mark for each correct application in recognising (naming/identifying) each type of long-term memory by matching to the person in the stem.

Plus

1 mark each for knowledge of a feature of the type of memory explained in the context of the behaviour in the stem.

- Annie’s case/remembering how to skateboard is an example of procedural memory (1) because she is remembering an action or muscle-based memory (1).
- Germaine’s case/remembering what happened is an example of episodic memory (or autobiographical memory) (1) because he recalls the events that took place at a specific point in time (1).
- Billy’s case/remembering the names of tools is an example of semantic memory (1) because he remembers factual/meaningful information (1).

Question 7

Below are five evaluative statements about the cognitive interview. Which two statements are correct?

Shade two boxes only.

[2 marks]

Marks for this question: AO3 = 2

1 mark – B
1 mark – D
**Question 8**

Discuss what psychological research has shown about working memory.
In your answer, refer to theory and/or evidence.

[12 marks]

Marks for this question: AO1 = 6 and AO3 = 6

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>10–12</td>
<td>Knowledge of what psychological research (theory and/or evidence) has shown about working memory is accurate and generally well detailed. Discussion is effective. The answer is clear and coherent. Minor detail and/or expansion is sometimes lacking. Specialist terminology is used effectively.</td>
</tr>
<tr>
<td>3</td>
<td>7–9</td>
<td>Knowledge of what psychological research (theory and/or evidence) has shown about working memory is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised. Specialist terminology is mostly used appropriately.</td>
</tr>
<tr>
<td>2</td>
<td>4–6</td>
<td>Limited knowledge of what psychological research (theory and/or evidence) has shown about working memory is present. Focus is mainly on description. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.</td>
</tr>
<tr>
<td>1</td>
<td>1–3</td>
<td>Knowledge of what psychological research (theory and/or evidence) has shown about working memory is very limited. Discussion is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>No relevant content.</td>
</tr>
</tbody>
</table>

**Content:**

Full credit can be gained for theory and/or evidence.

- The working memory model proposed by Baddeley and Hitch in 1970s as an updated version of STM
- WM is understood as an active processor
- The components and their functions and properties; central executive; phonological loop/store (articulatory and acoustic processing); visuo-spatial scratchpad/sketchpad; episodic buffer. Credit diagram
- Description of what research evidence has shown/findings of studies/conclusions in relation to working memory in general or the different components including:
  - Concurrent/dual task studies
  - Articulatory suppression studies
  - Brain imaging research showing different areas of the brain are active when performing different types of task
  - Clinical evidence of selective impairments to STM

**Possible discussion points:**

- Explains how different cognitive processes interact
- Comparison with passive view of STM in the MSM
- Use of evidence to support or contradict the concept of working memory
- Discussion/evaluation of working memory research eg issues of validity in dual task research/scanning studies where tasks might be seen as unrealistic/artificial; sampling issues and generalisation
- Problem of testing/fully explaining the central executive
- Applications eg explains processing deficits like reading difficulties and offers possible routes to therapy

Credit other relevant material.
Note – ethical issues in relation to studies would not normally be relevant as they do not affect the understanding of working memory.
AO2 = 4 marks  Application of knowledge to explain how research findings support a difference between STM and LTM

The focus of this answer must be on explaining difference. Candidates may base their explanation on the findings of one experiment such as Murdock (1962) which showed a primacy effect (LTM) and a recency effect (STM), or on a case study such as KF which showed impaired STM but unaffected LTM. Reference to evidence from brain scans would also be relevant, eg Squire (1992) found the hippocampus is active in LTM tasks and areas in the pre-frontal cortex are active during STM tasks. Alternatively the explanation may relate to a specific feature of STM/LTM e.g. Peterson and Peterson supported the idea of limited duration in STM while Bahrick supported that of relatively permanent LTM. Other relevant features are capacity, encoding and forgetting. STM encoded acoustically and LTM encoded semantically. Baddeley found that lists of similar sounding words confused STM term memory and lists of semantically similar words confused long term memory. Candidates who describe the findings of one study relating to the capacity of STM can access full marks by simply stating that the capacity of LTM is considered to be unlimited.

AO2
Application of knowledge and understanding

<table>
<thead>
<tr>
<th>4 marks</th>
<th>Effective explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation is accurate, reasonably detailed and demonstrates sound knowledge and understanding of how research findings support a difference. e.g. 1 or more detailed differences + evidence illustrating both parts. (The evidence can be from 1 study)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 marks</th>
<th>Reasonable explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation is generally accurate but less detailed and demonstrates reasonable knowledge and understanding of how research findings support a difference. e.g. 2 detailed differences (e.g. duration and capacity) or 1 detailed difference + evidence illustrating one part of the difference.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 marks</th>
<th>Basic explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation demonstrates basic knowledge of how research findings support a difference. e.g. Duration is 20 seconds in STM and unlimited in LTM.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1 marks</th>
<th>Rudimentary explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation demonstrates rudimentary knowledge of how research findings support a difference. e.g. Capacity is smaller in STM than LTM.</td>
<td></td>
</tr>
</tbody>
</table>
Question 2

AO1 = 4 marks  Knowledge and understanding of model

Candidates may describe the original 1974 version of the model or include later additions such as the episodic buffer which was added in 2000. The working memory model replaced the idea of a unitary STM. It suggests a system involving active processing and short-term storage of information.

Key features include the central executive, the phonological loop (consisting of two components, the phonological store and the articulatory control process), and the visuospatial sketch pad.

For 4 marks candidates should refer to components and processes. Candidates may include a diagram. If this is accurately labelled and sufficiently detailed, this can potentially receive the full 4 marks.

<table>
<thead>
<tr>
<th>AO1 Knowledge of the working memory model</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 marks</td>
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<tr>
<td></td>
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<tr>
<td>3 marks</td>
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<td>1 mark</td>
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<td></td>
</tr>
<tr>
<td>0 marks</td>
</tr>
</tbody>
</table>
AO1 = 4 marks  Knowledge of the cognitive interview

Note – There is a breadth/depth trade off here. Accurate answers which describe 1 technique in detail can be awarded full marks, as can answers which outline 4 techniques.

The main techniques used in a cognitive interview are:-
Context reinstatement – trying to mentally recreate an image of the situation, including details of the environment, such as the weather conditions, and the individual’s emotional state including their feelings at the time of the incident.
Recall from a changed perspective – trying to mentally recreate the situation from different points of view e.g. describing what another witness present at the scene would have seen.
Recall in reverse order – the witness is asked to describe the scene in a different chronological order e.g. from the end to the beginning.
Report everything – the interviewer encourages the witness to report all details about the event, even though these details may seem unimportant.

The main additional features of the enhanced cognitive interview are:-
Encourage the witness to relax and speak slowly.
Offer comments to help clarify witness statements.
Adapt questions to suit the understanding of individual witnesses.

<table>
<thead>
<tr>
<th>AO1</th>
<th>Knowledge of the cognitive interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 marks</td>
<td><strong>Accurate and reasonably detailed</strong></td>
</tr>
<tr>
<td>3 marks</td>
<td><strong>Less detailed but generally accurate</strong></td>
</tr>
<tr>
<td>2 marks</td>
<td><strong>Basic</strong></td>
</tr>
<tr>
<td>1 mark</td>
<td><strong>Very brief/flawed</strong></td>
</tr>
<tr>
<td>0 marks</td>
<td></td>
</tr>
</tbody>
</table>

Question 01

AO1 = 2 marks  Knowledge of capacity and duration

Capacity refers to how much can be held in memory.
“How much it holds” = 1 mark
Duration refers to how long a memory lasts.
“How long it lasts” = 1 mark
Credit accurate examples from STM or LTM eg for capacity STM can hold 7+/−2 chunks. Eg for duration LTM lasts for a lifetime.
AO1 = 4 marks  Knowledge of the working memory model

The function of the phonological loop is to store a limited number of speech based sounds for a brief time. It is made up of a phonological store (inner ear) which stores acoustically coded items for brief periods and an articulatory control process (inner voice) which uses sub-vocal repetition. The visuo-spatial sketchpad holds information coded in a visual form for a short period of time. It includes the visual cache, a passive temporary visual store, and the inner scribe, which provides a rehearsal mechanism.

Both components function as slave systems of the central executive.

<table>
<thead>
<tr>
<th>AO1 Knowledge of the functions of working memory model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4 marks</strong> Accurate and reasonably detailed</td>
</tr>
<tr>
<td>Accurate and reasonably detailed answer that demonstrates sound knowledge of the functions of the phonological loop and the visuo-spatial sketchpad.</td>
</tr>
<tr>
<td><strong>3 marks</strong> Less detailed but generally accurate</td>
</tr>
<tr>
<td>Generally accurate but less detailed answer that demonstrates relevant knowledge of the functions of the phonological loop and the visuo-spatial sketchpad.</td>
</tr>
<tr>
<td><strong>2 marks</strong> Basic</td>
</tr>
<tr>
<td>Basic answer that demonstrates some relevant knowledge of the functions of the phonological loop and the visuo-spatial sketchpad, but lacks detail and may be muddled. Or</td>
</tr>
<tr>
<td>Generally accurate but less detailed answer that demonstrates relevant knowledge of the functions of the phonological loop or the visuo-spatial sketchpad.</td>
</tr>
<tr>
<td><strong>1 mark</strong> Very brief and/or flawed</td>
</tr>
<tr>
<td>Very brief or flawed answer that demonstrates very little knowledge of the functions of the phonological loop or the visuo-spatial sketchpad, or merely names subcomponents.</td>
</tr>
<tr>
<td><strong>0 marks</strong></td>
</tr>
<tr>
<td>No creditworthy material.</td>
</tr>
</tbody>
</table>
Question 05

Total 12 marks

AO1 = 6 marks  Outline of relevant research study/studies
AO2 = 6 marks  Evaluation of relevant research study/studies

AO1

There is a wide range of possible studies which candidates could select from the topic areas named in the specification which are: misleading information, anxiety and age of witness. Answers might describe one study in some detail, or describe a wider range in less detail. Any aspects of relevant studies could be credited to gain full marks. Examiners should check carefully studies with which they are unfamiliar.

 Candidates may refer to research with older and younger adults eg Anastasi & Rhodes (2006) used participants aged 18 – 78 years. Warren et al (2005) found older children were more likely to be influenced by leading questions than adults.

For misleading information candidates are likely to refer to Loftus and Palmer’s (1974) experiment where the verb in the critical question was changed (smashed, collided, bumped, hit or contacted.) Other relevant research would be Loftus and Palmer asking participants “Did you see any broken glass?” and Loftus et al’s (1978) study using a red Datsun and Stop or Yield signs.

For anxiety, Loftus’s (1979) weapon focus experiment showed more participants correctly identified a person holding a pen (49%) than a person holding a knife covered in blood. Loftus and Burns (1982) found participants who saw a violent version of a crime where a boy was shot in the face had impaired recall for events leading up to the accident. However, in a real life study Yuille and Cutshall (1986) found witnesses who had been most distressed at the time of a shooting gave the most accurate account five months later. Also Christianson and Hubinette (1993) found victims of genuine bank robberies were more accurate in their recall than bystanders.

Research studies relating to cognitive interviews are relevant as long as they focus on accuracy. Description of techniques used in cognitive interviews would not receive credit.

AO2

Evaluation is likely to focus on the effectiveness of research. It will depend on the studies selected but might refer to:-

- methodological evaluation eg lack of ecological validity in laboratory research or lack of control in real life situations
- appropriate ethical issues
- practical applications/implications eg court cases
- links to relevant theory eg Yerkes Dodson and arousal, own age bias
<table>
<thead>
<tr>
<th>AO1</th>
<th>Knowledge and understanding</th>
<th>AO2</th>
<th>Application of knowledge and understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 marks</td>
<td>Accurate and reasonably detailed</td>
<td>6 marks</td>
<td>Effective evaluation</td>
</tr>
<tr>
<td>Accurate and reasonably detailed description of relevant studies that demonstrates sound knowledge and understanding. There is appropriate selection of material to address the question.</td>
<td>Effective evaluation of material to address the question and provide informed evaluation. Effective use of research evidence. Broad range of issues and/or evidence in reasonable depth, or a narrower range in greater depth. Clear expression of ideas, good range of specialist terms, few errors of grammar, punctuation and spelling.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-4 marks</td>
<td>Less detailed but generally accurate</td>
<td>5-4 marks</td>
<td>Reasonable evaluation</td>
</tr>
<tr>
<td>Less detailed but generally accurate description of relevant studies that demonstrates relevant knowledge and understanding. There is some evidence of selection of material to address the question.</td>
<td>Material is not always used effectively but produces a reasonable evaluation. Reasonable use of research evidence. A range of issues and/or evidence in limited depth, or a narrower range in greater depth. Reasonable expression of ideas, a range of specialist terms, some errors of grammar, punctuation and spelling.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-2 marks</td>
<td>Basic</td>
<td>3-2 marks</td>
<td>Basic evaluation</td>
</tr>
<tr>
<td>Basic description that demonstrates some relevant knowledge and understanding of relevant studies but lacks detail and may be muddled. There is little evidence of selection of material to address the question.</td>
<td>The use of material provides only a basic evaluation. Basic use of research evidence. Superficial consideration of a restricted range of issues and/or evidence. Expression of ideas lacks clarity; some specialist terms used; errors of grammar, punctuation and spelling detract from clarity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 mark</td>
<td>Very brief/flawed</td>
<td>1 mark</td>
<td>Rudimentary evaluation</td>
</tr>
<tr>
<td>Very brief or flawed description that demonstrates very little knowledge or understanding of relevant studies. Selection of information is largely inappropriate.</td>
<td>The use of material provides only a rudimentary evaluation. Use of research evidence is just discernible or absent. Expression of ideas poor; few specialist terms used; errors of grammar, punctuation and spelling often obscure the meaning.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 marks</td>
<td>No creditworthy material presented.</td>
<td>0 marks</td>
<td>No creditworthy material presented.</td>
</tr>
</tbody>
</table>
Question 2 (a)

Describe the multi-store model of memory. [6 marks]

AO1 = 6 marks  Knowledge and understanding of the MSM

Atkinson and Shiffrin's (1968) multi-store model of memory (MSM) makes a distinction between the separate stores of sensory, short-term and long-term memory. Likely features include:

- It is a structural model
- STM and LTM are unitary stores
- Information passes from store to store in a linear way
- Rehearsal is needed to pass information from STM to LTM
- Each store has its own characteristics in terms of encoding, capacity and duration
- Explanations of forgetting are different for each store

Students may include a diagram. If this is accurately labelled and sufficiently detailed this can potentially receive the full 6 marks, as long as the answer includes both components (e.g. STM/LTM) and processes (e.g. rehearsal).

<table>
<thead>
<tr>
<th>AO1</th>
<th>Knowledge and understanding of the MSM</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6 marks - Accurate and reasonably detailed</td>
<td>Accurate and reasonably detailed answer that demonstrates sound knowledge and understanding of the MSM. There is appropriate selection of material to address the question.</td>
<td></td>
</tr>
<tr>
<td>5-4 marks - Less detailed but generally accurate</td>
<td>Generally accurate but less detailed answer that demonstrates relevant knowledge and understanding of the MSM. There is some evidence of selection of material to address the question.</td>
<td></td>
</tr>
<tr>
<td>3-2 marks - Basic</td>
<td>Basic answer that demonstrates some relevant knowledge and understanding but lacks detail and may be muddled. There is little evidence of selection of material to address the question.</td>
<td></td>
</tr>
<tr>
<td>1 mark - Very brief and or flawed</td>
<td>Very brief or flawed answer that demonstrates very little knowledge Selection of material is largely inappropriate.</td>
<td></td>
</tr>
<tr>
<td>0 marks - no creditworthy material</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Explain two limitations of the multi-store model of memory.

AO2 = 4 marks Limitations of MSM

Likely limitations include an emphasis on rote rehearsal as a mechanism for transfer from STM to LTM even though this is not a very effective means of transfer, and transfer often occurs with no rehearsal. Students may also refer to case studies, such as that of Clive Wearing who lost episodic but not procedural memory suggesting there may be more than one type of LTM. Reference to the simple nature of STM in the MSM compared to the WMM would also be relevant.

<table>
<thead>
<tr>
<th>AO2</th>
<th>Explanation of 2 limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 marks</td>
<td>Effective explanation: Explanation accurate, reasonably detailed and demonstrates sound knowledge and understanding</td>
</tr>
<tr>
<td>3 marks</td>
<td>Reasonable explanation: Explanation of 1 limitation of the MSM is accurate, reasonably detailed and demonstrates</td>
</tr>
<tr>
<td></td>
<td>sound knowledge and understanding</td>
</tr>
<tr>
<td></td>
<td>Or</td>
</tr>
<tr>
<td></td>
<td>Explanation of 2 limitations of the MSM is generally accurate, but less detailed and demonstrates reasonable</td>
</tr>
<tr>
<td></td>
<td>knowledge and understanding.</td>
</tr>
<tr>
<td></td>
<td>Or</td>
</tr>
<tr>
<td></td>
<td>Explanation of 2 limitations of the MSM demonstrates basic knowledge and understanding.</td>
</tr>
<tr>
<td></td>
<td>Or</td>
</tr>
<tr>
<td></td>
<td>Explanation of 2 limitations of the MSM demonstrates rudimentary knowledge.</td>
</tr>
<tr>
<td>0 Marks</td>
<td>No creditworthy material</td>
</tr>
</tbody>
</table>
Question 3

Marsha was walking to work when she saw a knife attack. The victim was badly injured. Marsha was the only witness to the knife attack.

Explain how a police officer could use one or more cognitive interview techniques to find out what Marsha could recall about the attack.

AO2 = 4 marks  Application of knowledge of the Cognitive Interview

Note – There is a breadth/depth trade off here. Accurate answers which apply 1 technique in detail can be awarded full marks, as can answers which apply 4 techniques more briefly.

The main techniques used in the cognitive interview could be:-
- Asking Marsha to mentally recreate an image of the situation, including details of the environment, such as the weather conditions, and her emotional state including how she was feeling at the time of the incident - context reinstatement
- Trying to mentally recreate the situation from different points of view. Although Marsha was the only witness she could be asked to imagine what another witness present at the scene would have seen - recall from a changed perspective.
- Marsha would be asked to describe the attack in a different chronological order eg from the knife attack to when she left her house - recall in reverse order.
- The police officer could encourage Marsha to report all details about the event, even though these details may seem unimportant to her - report everything.

The main additional features of the enhanced cognitive interview are:-
- Encourage Marsha to relax and speak slowly
- Offer comments to help clarify Marsha’s statements
- Adapt questions to suit Marsha’s understanding

Maximum 2 marks for an answer which has no explicit application to the scenario.
Maximum 1 mark for simply naming one or more cognitive interview techniques.

<table>
<thead>
<tr>
<th>AO2 Application of knowledge the cognitive interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 marks - Effective</td>
</tr>
<tr>
<td>Explanation demonstrates effective analysis of unfamiliar material. The selection and application of psychological knowledge to the cognitive interview is appropriate and effective. There is explicit reference to the scenario.</td>
</tr>
<tr>
<td>3 marks - Reasonable</td>
</tr>
<tr>
<td>Explanation demonstrates reasonable analysis of unfamiliar material. The selection and application of psychological knowledge to the cognitive interview is mostly appropriate. There is explicit reference to the scenario.</td>
</tr>
<tr>
<td>2 marks - Basic</td>
</tr>
<tr>
<td>Explanation demonstrates basic analysis of unfamiliar material. The selection and application of psychological knowledge to the cognitive interview is sometimes appropriate. There is no explicit reference to the scenario.</td>
</tr>
<tr>
<td>1 mark - Very brief/flawed</td>
</tr>
<tr>
<td>Explanation demonstrates rudimentary analysis of unfamiliar material. The selection and application of psychological knowledge to the cognitive interview is muddled and/or mostly inappropriate. One or more techniques simply named.</td>
</tr>
<tr>
<td>0 marks - No creditworthy material</td>
</tr>
</tbody>
</table>
Question 4

Outline one research study of the effect of anxiety on eye-witness testimony. In your answer you should include details of what participants were asked to do and the results of the study. [6 marks]

AO1 = 6 marks Knowledge of one relevant study

All studies which relate to both anxiety and eyewitness testimony must be credited. However, laboratory studies where participants watched slides or films of car accidents (eg Loftus and Palmer 1974) were not investigating the effect of anxiety. In work by Johnson & Scott and Loftus on weapon focus participants were asked to look at 50 photographs and select the one of a man they had seen earlier. Participants who had overheard a low key discussion and saw the man holding a pen with grease on his hands correctly identified him 49% of the time. Participants who heard a hostile discussion and breaking glass and saw the man holding a knife covered in blood correctly identified him 33% of the time. Loftus and Burns (1982) found participants who watched a violent version of a crime where a boy was shot in the face had impaired recall for events leading up to the accident. However, in a real life study Yuille and Cutshall (1986) interviewed witnesses and found those who had been most distressed at the time of a shooting gave the most accurate account five months later. Also Christianson and Hubinette (1993) found victims of genuine bank robberies were more accurate in their recall than bystanders.

AO1 Knowledge and Understanding

6 marks - Accurate and reasonably detailed
Accurate and reasonably detailed answer that demonstrates sound knowledge and understanding of one study of anxiety and EWT including reference to both procedure and findings.

5-4 marks - Less detailed but generally accurate
Generally accurate but less detailed answer that demonstrates relevant knowledge and understanding of one study of anxiety and EWT including reference to both procedure and findings.

3-2 marks - Basic
Basic answer that demonstrates some relevant knowledge and understanding of procedure and/or findings of one study of anxiety and EWT, but lacks detail and may be muddled

1 mark - Very brief and or flawed
Very brief or flawed answer that demonstrates very little knowledge of one study of anxiety and EWT.

0 marks - no creditworthy material
Question 5

Explain one possible limitation of research into the effect of anxiety on eye-witness testimony. [2 marks]

AO2 = 2 marks  
Explanation of one limitation

The limitation must be appropriate for research into the effect of anxiety on eye-witness testimony. Students may refer to possible ethical issues such as distress or lack of informed consent. Lack of ecological validity in laboratory experiments or lack of control in field research would also be relevant as would the inconsistency of research findings in the area.

1 mark for a very brief or slightly muddled answer, e.g. participants might be distressed or results are inconsistent.
2 marks for accurate elaboration e.g. Participants might be distressed by being shown unpleasant images such as a boy being shot in the face. (2 marks)
Results are inconsistent. Weapon focus studies show identification was worse in the knife condition than the pen condition but victims of a bank robbery showed the best recall. (2 marks)

Question 11

[AO1 =2, AO2 = 1]

AO1 Award up to two marks for a definition of any two of the following:
- semantic – memory for facts/general knowledge;
- episodic – memory for (life) events/experiences;
- procedural – memory for (motor) skills/actions/knowing how to do things.
No credit for stand-alone examples.

AO2 Award one mark for a valid distinction/difference between the types of long-term memory chosen.

Possible answers: semantic/episodic – ‘knowing that’/declarative memory; available for conscious inspection – procedural – ‘knowing how’/non-declarative memory; often unavailable for conscious inspection.
Semantic – may not recall when we learned/encoded these memories – episodic – stored with reference to time and place.
Credit distinctions based on the durability/resistance to forgetting of different types of memory; the fact that evidence suggests that these types of memory reside in different areas of the brain.
Credit other valid distinction points.

Note that the explanation of the difference must make reference to both types of memory.
Question 13

[AO1 = 2, AO2= 2]

AO1  Award up to two marks for relevant knowledge of the working memory model. Credit knowledge/identification of each store/sub-systems (not episodic buffer); the idea that two tasks using separate stores can be performed simultaneously; performing two tasks that involve the same store impairs performance. Credit reference to limited capacity. Credit reference to the allocation of tasks by the central executive.

Students may gain both marks by referring to specific stores or more general, relevant features of the model.

AO2  Up to two marks for application to the scenario.

For full credit answers must refer to both sets of tasks.

Possible answer: Claire is able to search for photos and listen to music as these tasks involve different sub-systems in working memory (1) – the visuo-spatial sketch/scratch pad and the articulatory/phonological loop/store/primary acoustic store (1). Claire finds it difficult to read her e-mails and talk on the phone as these tasks involve the same store (1) – the articulatory/phonological loop/store/primary acoustic store (1).
Question 15

AO1 = 3 marks

Outline one study in which the Working Memory model has been investigated. In your answer, refer to what the psychologist(s) did and what was found.

Up to 3 marks for a description of a recognisable study; candidates may briefly describe the method, results and/or conclusion. Candidates may get full credit for focusing on only two sections of the study when there is sufficient detail provided.


No marks for a classroom exercise/demonstration.

Question 16

AO2 = 2 marks

Briefly explain one strength of the Working Memory model.

Up to 2 marks for one strength of the Working Memory model. Award 1 mark for identification/brief outline of a strength and 1 mark for elaboration/expansion.

Likely strengths: sees (short term) memory as active rather than passive; considers how we use STM for everyday activities; phonological loop deficits may account for reading difficulties/dyslexia; can account for findings of studies with amnesiac/brain damaged patients; can explain dual-task performance. Accept other valid strengths.

Credit use of evidence/comparison with alternative models as part of elaboration. Note that some of these points may overlap.

Question 17

AO1 = 2 marks

What is meant by ‘procedural memory’? Give an example.

Award 1 mark for an outline of procedural memory and 1 mark for an example.

Possible answer: memory for a motor skill/action-based memory (1) e.g. recalling the action of riding a bike (1).

1 mark only for knowing how to do something eg ‘knowing how to ride a bike’.

Do not accept ‘memory for procedures’.
Question 11

[AO1 = 2]

Up to 2 marks for one difference between episodic/autobiographical and semantic memory. 1 mark for a brief/partial/muddled outline of a difference, 2 marks for a clear and coherent explanation of a difference.

Likely answer: episodic/autobiographical memories are encoded/stored with some reference to time and place; such contextual information is not a feature of semantic memories.

Both marks may be awarded for a definition of the two types of memory presented as a difference.

Note that if the answer to question 9 and/or 10 is/are incorrect, students can still gain both marks if the difference is relevant to the types of long term memory given.
Question 13

Outline one study in which a factor affecting the reliability of eye-witness accounts was investigated. Your outline should refer to the method used and the results/conclusion of the study. [2 marks]

AO1 = 2 marks

Up to two marks for an outline of any study in which a factor affecting the reliability of eye-witness accounts or eye-witness identification was investigated.

Award one mark for detail of method/procedure and one mark for detail of results/conclusion

Relevant factors include: post-event contamination from leading questions (eg Loftus & Palmer 1974; Loftus 1975); post-event contamination from post-event discussion (eg Wright et al 2000); context (eg Malpass and Devine 1981); emotion/stress (eg Yule and Cutshall 1986); expectation/stereotypes (eg Howitt 1991); weapon focus (eg Loftus et al 1987)

Question 14

Briefly discuss one limitation of the study you have described in your answer to question 13. [2 marks]

AO2 = 2 marks

Up to two marks for a brief discussion of a relevant limitation of the study outlined in answer to question 13. Content will vary according to study outlined, but relevant issues might include: sampling limitations and effects on generalisability; artificiality and low ecological validity eg in use of video; demand characteristics eg participants knowing they are in a study will probably pay greater attention to events than they would do in everyday life and therefore remember better.

Award one mark for a briefly explained limitation, with a further mark for some elaborated discussion eg implications for recall.

Generic methodological limitations that are not overtly linked to the context of the study in Q13 should receive no credit.
Discuss influences of post-event contamination on eye-witness accounts. Refer to evidence in your answer.

[AO1 = 4, AO2 = 8]

AO1
Up to 4 marks for knowledge of influences of post-event contamination:

- Leading questions as a source of post-event contamination - contaminate recall by suggesting course of events so that memory is reconstructed to fit the Q
- Post-event discussion as a source of post-event contamination - contaminates recall by suggesting course of events so that memory is reconstructed to fit other people's accounts
- Knowledge of theoretical basis eg role of schema – reconstruction, confabulation, effort after meaning
- Research examples eg Loftus and Palmer's car accident research; Wright et al effect of pair discussions on recall of story; Candel Coca-Cola discussion pairs; Poole and Lindsay Mr Science experiment.

Up to 2 marks for description of evidence

AO2
Up to 8 marks for discussion

Possible points:
- Use of evidence to support or refute effects
- Analysis of the effects eg deletion v insertion
- Analysis of implications/consequences
- Analysis of the theoretical basis eg role of schema
- Comparisons/interactions with other factors affecting eye-witness account eg emotion
- Analysis of effects of mediating variables: age – children generally found to be more susceptible but Candel showed older children are more susceptible than younger; crucial v peripheral information; plausibility; timing of contamination

Ethical criticisms of studies are not creditworthy unless explained as to how affect the influence of post-event contamination

Maximum 8 marks if no evidence presented

10 - 12 marks Very good answers

Answer is clearly focused on the question and shows sound knowledge and understanding in relation to the effects of post-event contamination. Discussion is thorough and includes thoughtful analysis. Most points are well developed and presented in the context of the discussion as a whole. The answer is well organised and mostly relevant with little, if any, misunderstanding.
The candidate expresses most ideas clearly and fluently, with effective use of psychological terminology. Arguments are well structured and coherent, with appropriate use of sentences and paragraphs. There are few, if any, minor errors of grammar, punctuation and spelling. The overall quality of language is such that meaning is rarely, if ever, obscured.

7 - 9 marks   Good answers
Answer shows knowledge and understanding in relation to the effects of post-event contamination. Discussion is evident with some points developed. There may be some irrelevance and/or misunderstanding.

The candidate expresses most ideas clearly and makes some appropriate use of psychological terminology. The answer is organised, using sentences and paragraphs. Errors of grammar, punctuation and spelling may be present but are mostly minor, such that they obscure meaning only occasionally.

4 - 6 marks   Average to weak answers
Answer shows some knowledge and understanding in relation to the effects of post-event contamination. There must be some discussion for 5/6 marks. Answers constituting reasonable relevant description but without proper focus on the question are likely to be in this band. There may be considerable irrelevance/inaccuracy.

The candidate expresses basic ideas reasonably well but there may be some ambiguity. The candidate uses key psychological terminology inaccurately on some occasions. The answer may lack structure, although there is some evidence of use of sentences and paragraphs. There are occasional intrusive errors of grammar, punctuation and spelling which obscure meaning.

1 - 3 marks   Poor answers
Answer shows very limited knowledge and understanding but must contain some relevant information in relation to the question. There may be substantial confusion, inaccuracy and/or irrelevance.

The candidate shows deficiencies in expression of ideas resulting in frequent confusion and/or ambiguity. Answers lack structure, consisting of a series of unconnected ideas. Psychological terminology is used occasionally, although not always appropriately. Errors of grammar, punctuation and spelling are frequent, intrusive and often obscure meaning.

0 marks   No relevant content