1.2 The cognitive approach

Name: _____ Class: _____ Date: _____ **Total: 30 marks**

KEY WORDS cognitive approach • multi-store model • working memory model • schema • reconstructive memory • anchoring bias • leading question • flashbulb memory

Objective

Build the skills to answer exam questions on the **cognitive approach** : models of memory, **schemas** and reconstructive memory, thinking and decision-making with heuristics and biases, and the reliability of memory, including emotion and flashbulb memory.

You must be able to:

- describe the multi-store model and the working memory model and the evidence for each
- explain how schemas lead to reconstructive memory (Bartlett, 1932)
- explain System 1 and System 2 thinking, anchoring bias and confirmation bias
- evaluate the reliability of memory using Loftus and Palmer (1974) and flashbulb memory research
- apply cognitive research to a new situation (Section B)

1 Key knowledge and worked examples

Models of memory

- **Multi-store model** (Atkinson and Shiffrin, 1968): sensory memory → (attention) → short-term memory → (rehearsal) → long-term memory. H.M. supports separate short-term and long-term stores.
- **Working memory model** (Baddeley and Hitch, 1974): short-term memory has parts: phonological loop (sounds), visuospatial sketchpad (pictures), central executive (attention) and episodic buffer (added in 2000). Two tasks clash only if they use the same part.

Schemas are organized knowledge that help us understand quickly but change what we remember. Bartlett (1932): English students retold "The War of the Ghosts"; their versions got shorter and strange details became familiar (a canoe became a boat). This is **reconstructive memory** .

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Thinking and decision-making

Kahneman: **System 1** is fast and automatic; **System 2** is slow and effortful. System 1 uses **heuristics** (short cuts), which can cause **cognitive biases**.

- **Anchoring bias** : a first number pulls later estimates towards it. Tversky and Kahneman (1974): after a wheel stopped at 10, people's typical estimate of African countries in the UN was 25 %; after 65, it was 45 %.
- **Confirmation bias** : looking for facts that support what we already believe.

Is memory reliable?

Loftus and Palmer (1974): 45 students watched films of car crashes. "Smashed" gave a mean speed estimate of 40.8 mph; "contacted" gave 31.8 mph. A week later, 32 % of the "smashed" group reported broken glass (there was none), against 14 % of the "hit" group: a **leading question** can change the memory. Brown and Kulik (1977): shocking events give vivid **flashbulb memories**; Neisser and Harsch (1992): two and a half years after the Challenger disaster many accounts had changed, but people were still very sure. Emotion raises confidence more than accuracy.

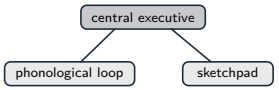
Section B answer shape (6 marks): name the theory → explain it → apply it to the people in the situation → support with a study → a limit.

2 Practice

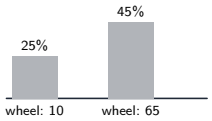
2.1 Outline the **multi-store model** of memory. [3]



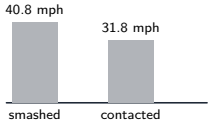
2.2 Using the **working memory model**, explain why it is hard to repeat a list of words while counting aloud, but easy to repeat it while picturing a map. [2]



2.3 *(Paper 1 Section A.)* Describe **one** study of anchoring bias. [4]



2.4 *(Paper 1 Section B, learning and cognition.)* After a bicycle was stolen, a police officer asked a witness: "How fast was the thief running when he **smashed** into the girl?" Explain how this question could affect the witness's memory. [6]



3 Exam-style questions

3.1 *(Paper 1 Section C.)* "Our memory of important events is accurate." Discuss this claim with reference to the concept of **measurement**. [15]



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Solutions

Marking: **M1** a correct method, **A1** the correct answer, **B1** an independent mark.

Each answer shows the steps, then the **result**.

2.1

three stores: sensory memory, short-term memory, long-term memory; attention moves information from sensory to short-term memory; rehearsal moves it from short-term to long-term memory / information not rehearsed is lost

2.2

repeating words and counting aloud both use the phonological loop, so they compete for the same part; picturing a map uses the visuospatial sketchpad, a different part, so the tasks do not clash

2.3

Tversky and Kahneman (1974); a wheel that stopped at 10 or 65 was spun, then people estimated the percentage of African countries in the UN; people who saw 10 gave a typical estimate of 25 %, those who saw 65 gave 45 %; a clearly random first number pulled the estimate towards it, which shows anchoring

2.4

award up to [6]: a leading question suggests an answer; memory is reconstructive: the new information is added to the memory; Loftus and Palmer (1974): "smashed" gave higher speed estimates (40.8 against 31.8 mph for "contacted"); a week later more people in the "smashed" group falsely remembered broken glass (32 % against 14 %); so this witness may remember the thief as faster or the crash as more violent than it was; but the study used films, not a real, frightening event, so the effect may differ for a real witness / police should use neutral, open questions

3.1

Mark with the markbands: [13-15] focused on the claim, accurate knowledge, evidence used to build an argument, the concept used to evaluate throughout, a supported conclusion; [10-12] mostly focused, evidence used, some evaluation through the concept; [7-9] relevant knowledge but mostly description; [4-6] limited knowledge, little evaluation; [1-3] little that is relevant. Points that may be included: reconstructive memory: Bartlett (1932) found schemas changed the details of stories; measurement: Bartlett's method was informal, with no standard instructions, so changes are hard to score; Loftus and Palmer (1974): leading questions changed speed estimates and created false memories of broken glass; measurement: speed estimates and "yes/no" glass answers are clear and comparable, but the films lack real emotion; Brown and Kulik (1977): emotional events feel vivid and detailed; Neisser and Harsch (1992): accounts changed a lot after about two and a half years, yet confidence stayed high, measured by comparing two written accounts; confidence is not a measure of accuracy; conclusion: important events feel accurate, but the evidence shows they are often rebuilt; the claim is not supported, especially for details

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