

## Quiz 5 Memory, Thinking, and Reasoning

### What is Thinking? Think about it.

#### Question 1

It is finals season and Daniel is anxious about having to memorise 10 chapters for his Intro to Psychology module. To help him with his exam preparation, his sister Crystal provided him with a couple of tips. Which tip should Daniel not follow during his revision?

- ☐ "Try to link the textbook content with your own experience! For example, when trying to distinguish between the id, ego, and superego, try linking to a real-life example of you resisting the urge to watch shows when you know that you have assignments due soon."
- ☐ "While it may be tempting to listen to music when you are revising, try completing your revision in a silent setting instead, so that it resembles your examination room during your finals."
- ☐ "This might sound funny but what worked for me was that I sprayed a certain perfume whenever I studied for my exam. On the day of the exam itself, I sprayed the same perfume before the exam started. Somehow, the scent works!"
- ☒ "I've tried it once before - studying only a few days before, while it can be tough, might surprisingly work! After all, by memorising a short period of time beforehand, there is less interference in the time period from when you memorise all the content and when you take the exam. With a short time difference, less information is lost!"
- ☐ None of the above (i.e., all the tips are useful tips)

This tip encourages cramming, which is generally less effective for long-term retention and understanding. Cramming can increase anxiety and doesn't allow enough time for deeper learning or review, which is critical for exams, especially for a subject like psychology that may require critical thinking and application, not just memorization.

The other tips – linking content to personal experience, creating a study environment similar to the exam setting, and using scent as a memory cue – are generally beneficial strategies for memory retention and recall.

## Question 2

Which of the following is true about short term memory?

- ☐ A. The spreading activation model is a theory about how concepts in short-term memory are recalled.
- ☐ B. Short-term memories can be divided into declarative and nondeclarative memories.
- ☐ C. The recency effect explains why items that are first in a list are better remembered than other items.
- ☒ D. Short-term memory is forgotten without rehearsal.
- ☐ E. Most of our sensory memory is moved into short-term memory.

Without rehearsal, information in short-term memory tends to decay quickly, usually within 15-30 seconds.

Here's why the other options are incorrect:

A: The spreading activation model relates to long-term memory and how concepts are linked in a semantic network, not specific to short-term memory.

B: Declarative and nondeclarative memories are types of long-term memory, not short-term memory.

C: The recency effect refers to the tendency to remember items at the end of a list better, not the first ones (which is the primacy effect).

E: Only a small fraction of sensory memory is moved into short-term memory, not most of it. Sensory memory typically fades unless attention is paid to it.

### Question 3

For his PL1101E quiz, Andrew studies in the library because it is well lit and air conditioned. He also chooses to take his quiz in the library in order to score better. He is applying the concept of \_\_\_\_\_

- ☐ Active Reconstruction
- ☒ Encoding Specificity
- ☐ Retrieval
- ☐ Long-term Potentiation

The Encoding Specificity principle suggests that memory retrieval is more effective when the conditions at the time of encoding (studying) are similar to the conditions at the time of retrieval (taking the quiz). Since Andrew is studying and taking his quiz in the same environment (the library), he is making use of this principle to improve his performance.

### Question 4

Imagine you are a teacher in a classroom and you are trying to teach your students about different countries and their capital cities. You have written the names of the countries and their capitals on the whiteboard and are explaining them to the students.

Which of the following strategies is most likely to result in better memorization of information presented to students?

- ☐ Checking whether the name of country appears in capital letters
- ☐ Focusing on how the name of country is pronounced
- ☐ Recalling your friend had travelled to the country before
- ☒ Recalling you had travelled to the country before

This strategy taps into personal relevance and the self-reference effect, which suggests that information related to oneself is remembered better than information that is not. When students can personally relate to the material—like recalling their own travel experiences—they are more likely to remember the information. This involves deeper processing, leading to better retention.

The other strategies, such as focusing on the appearance or pronunciation of the country's name, involve shallower processing and are less effective for long-term memorization.

### Question 5

Mark is trying to remember a list of grocery items his wife asked him to buy from the store. He repeats the list to himself several times while visualising each item in his mind. When he gets to the store, he recalls each item without difficulty. Which memory technique is Mark using to remember the grocery items?

- ☐ Chunking
- ☐ Mnemonics
- ☒ Rehearsal
- ☐ Priming

Rehearsal involves repeating information over and over to keep it in short-term memory and transfer it to long-term memory. In Mark's case, he is verbally repeating the list and visualising the items to reinforce his memory, which helps him recall the items when he gets to the store.

### Question 6

Which of the following scenarios is NOT an example of nondeclarative memories?

- ☒ A former Olympic boxing champion is still able to remember the entire sequence of punches traded between him and his opponent in their gold medal match.
- ☐ Jake suffered a bad case of food poisoning after eating a bowl of laksa and hence, the smell of laksa now makes him nauseous.
- ☐ James is able to knit quickly after picking up the hobby a year ago.
- ☐ After hearing insults from the fans of the opposing team, a football player violently tackles his opponent and is given a red card.
- ☐ All scenarios are examples of nondeclarative memories.

This scenario involves the recall of specific events, which is an example of declarative memory (specifically episodic memory), since it involves consciously remembering a past experience.

Nondeclarative memories (also called implicit memories) include things like skills, habits, emotional responses, and conditioned reflexes that don't require conscious recall. The other scenarios involve nondeclarative memory:

- The food poisoning scenario involves classical conditioning.
- Knitting quickly involves procedural memory (a skill or habit).
- The football player's response to insults is likely based on an implicit emotional reaction, potentially tied to learned behaviours or automatic responses.

Thus, the boxing champion's detailed recollection of the match is declarative, not nondeclarative.

## Question 7

Tom worked in Starbucks over the winter holidays. Timothy, James, Madison & Clementine walked in and ordered four different drinks from Tom. Although Tom did not write their order down, he was still able to quickly make their orders. He immediately took the next set of orders from the customers behind them. Based on the above situation, which of the statements are true?

- a) As the duration of sensory memory is around 30 seconds, Tom could easily remember their orders when he was preparing them.
- b) As short-term memory capacity is exactly 7 items, he could easily remember the 4 items they told him.
- c) After taking the next set of orders, Tom will probably have forgotten what the 4 ordered due to interference.
- d) If Tom memorized what they ordered, it is likely to be stored in his procedural memory in his LTM

- ☐ c) only
- ☒ c) and d) only
- ☐ b), c) and d) only
- ☐ a), c) and d) only
- ☐ a), b), c), d)

a): This statement is incorrect because the duration of sensory memory is very short (around 1–2 seconds), not 30 seconds. Remembering their orders likely relies on short-term memory, not sensory memory.

b): This statement is misleading. While short-term memory has a capacity of around  $7 \pm 2$  items, it can vary. However, remembering the drink orders might not rely purely on short-term memory; Tom could be using strategies like chunking or relying on patterns or experience to remember the drinks.

c): This statement is true. After taking the next set of orders, Tom could experience retroactive interference, where new information (the next orders) interferes with his ability to recall the previous orders.

d): This statement is true. If Tom regularly remembers and prepares orders, this process could eventually be stored as procedural memory in his long-term memory (LTM), since it becomes a routine or skill that doesn't require conscious recall.

## Question 8

In which of the following examples is the Availability Heuristics most likely used to come to a decision?

- ☐ Nick thinks that the person sitting across from him on the train is most likely an accountant when he notices his thick spectacles, general introversion and pocket calculator.
- ☐ McLean decided to buy the 80% lean burger over the 20% FatBurger as he felt better about the lean burger.
- ☒ Kevin decided not to take a plane to go on his holiday after he heard about the Malaysia Flight 370 Incident
- ☐ Brian, believing that the Covid-19 vaccine was harmful, looked up all available information on why it was bad for health on the internet while ignoring research that said otherwise.
- ☐ Howie tells the boys that “Back” has less letters than “Street” by carefully counting the letters in the two words.

The Availability Heuristic refers to making decisions based on how easily examples come to mind. In this case, Kevin's decision is influenced by the high-profile and emotionally charged memory of the Malaysia Flight 370 incident, which makes the idea of flying seem more dangerous than it statistically is. This is a classic example of using recent or easily recalled events to make a judgement.

Here's why the other options don't fit:

- Nick's decision about the accountant is based on representativeness heuristic, where he associates certain traits (e.g., spectacles, introversion) with an accountant stereotype.
- McLean's burger choice is influenced by framing effects rather than availability, since the same information (80% lean vs. 20% fat) is presented differently.
- Brian is displaying confirmation bias, seeking information that confirms his belief while ignoring contrary evidence.
- Howie's letter counting is a careful, deliberate process, not a heuristic decision.