

SECTION B

Cognitive Psychology

Answer ALL questions. Write your answers in the spaces provided.

- 6 Eliza is a teaching assistant who has been asked to help Darius learn a map of a city for a geography test.

A02-2

Eliza intends to use her understanding of the working memory model (Baddeley and Hitch, 1974) to plan activities to help Darius learn the map.

- (a) Describe, using the phonological loop, how Eliza can help Darius learn the map of the city.

(2)

Eliza can make Darius hear the names of important places in the city so that this information can be held in his phonological store. Also, she can make him repeat those names, say, three times, so that the articulatory loop can rehearse them and maintain them for a while.

- (b) Describe, using the visuo-spatial sketchpad, how Eliza can help Darius learn the map of the city.

(2)

Eliza can get Darius to draw the map of the city by giving him a printout downloaded from the internet to engage his visual cache. She can also give him some arbitrary start and end points on the drawing points to trace the paths with a pen to engage his inner scribe.

(Total for Question 6 = 4 marks)



DO NOT WRITE IN THIS AREA

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DO NOT WRITE IN THIS AREA

what manipulated? visual inter.

→ visual inter is an impact on recall.

7 Melanie is planning a laboratory experiment to see whether or not visual interference has an impact on the accuracy of short-term memory recall of word lists. She has gathered a total of 18 participants to take part in her experiment.

AO₂ = 3

(a) Describe how Melanie could use an independent groups design for her experiment.

(3)

In Melanie's experiment, the conditions are 'visual interference' and no visual interference. Melanie can divide her participants into two groups of 9 participants each. Then she can assign only one of these groups to the 'visual interference' condition and only one of them to the 'no visual interference' condition.

(b) Explain **one** weakness of a laboratory experiment in terms of validity.

AO₁ = 1.
AO₃ = 1 (2)

One weakness is lack of ecological validity, because the use of highly artificial tasks and environment. This is a weakness because the findings obtained from such experiments are not directly generalisable to everyday settings.

(Total for Question 7 = 5 marks)



P 7 2 1 4 6 A 0 1 5 2 4

8 Leonardo investigated whether the chunking of information would improve recall of numbers. He presented participants with 10 number sequences that each contained 12 digits.

- **Condition A:** participants were presented with each number sequence as a whole number; for example 254879645235
- **Condition B:** the same participants were presented with each number sequence again, but as chunked numbers; for example 254 879 645 235

Leonardo recorded how many number sequences participants recalled in each condition accurately.

- (a) (i) Calculate the T value for the data gathered by Leonardo by completing **Table 2**.

The formulae and statistical tables can be found at the front of the paper.

You **must** show your working out.

PM.

$\frac{5-4+7}{3} = \frac{18}{3}$ $\frac{3, 3, 3}{3} = 3$ $\frac{1, 1, 1}{3} = 1$

$\sqrt{\frac{2}{3}} = \frac{1+2+3}{3} (4) = 2$

Participant	Condition A	Condition B	Difference	Ranked Difference
1 A	2	5	-5 -3	6 ✓
2 B	3	5	-2	4 ✓
3 C	4	3	+1	2 ✓
4 D	6	7	-1 3	2 ✓
5 E	4	4	-	-
6 F	5	8	-3 4	6 ✓
7 G	2	5	-3 5	6 ✓
8 H	3	2	+1 2	2 ✓

$$N = 8 - 1 = 7$$

Table 2

Space for calculations

Sum of Ranked differences for negative differences
 $= 6 + 4 + 2 + 6 + 6 = 24$

Sum of Ranked differences for positive differences.
 $= 2 + 2 = 4$

T 4



- (ii) Determine, using your answer to 8(a)(i), whether Leonardo's results are significant at $P \leq 0.05$ for a one-tailed (directional) test.

The critical values tables can be found at the front of this paper.

(1)

Leonardo's ^{results} are not significant as the calculated value of 4 is lesser than the critical value of 3.

- (b) Explain **two** improvements that Leonardo could make to his investigation.

$$AO_3 = 4.$$
$$\text{each } AO_3 = 2.$$
$$(4)$$

1. Since the same participants are exposed to both conditions, they could show practice effects, that is, they would recall the sequence better the second time by already being exposed to it once. To improve this, Leonardo could change the sequence of numbers for the second exposure.

2. Since the same participants are exposed to both conditions, they could understand the purpose of the study which is to check their memory for two different presentations of the sequence. To prevent such demand characteristics, Leonardo could use an independent groups design instead and allocate a separate group of participants to each condition.

(Total for Question 8 = 9 marks)



P 7 2 1 4 6 A 0 1 7 2 4