Cambridge Assessment International Education

Cambridge International AS & A Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

0673342873

PSYCHOLOGY **9990/22**

Paper 2 Research Methods **October/November 2022**

1 hour 30 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **12** pages. Any blank pages are indicated.

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Section A

Answer **all** questions in this section.

1 The hypothesis for a study is 'Adults with children worry more than adults without children'.

(a) State whether this is a directional hypothesis or a non-directional hypothesis. Include a reason for your answer.

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..... [1]

(b) Write a null hypothesis for this study.

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..... [1]

2 From the study by Yamamoto et al. (chimpanzee helping):

(a) Outline what is meant by 'reliability', using this study as an example.

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..... [2]

(b) Suggest **one** way to improve reliability in this study.

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..... [1]

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3 In the study by Pepperberg (parrot learning), quantitative data was collected from the questions about 'same' and 'different'.

(a) Outline what was observed to produce the quantitative data in this study.

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..... [1]

(b) Qualitative data can also be useful in studies. Pepperberg could have collected qualitative data by observing the parrot.

(i) Describe what is meant by 'qualitative data'.

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..... [1]

(ii) Describe **one** behaviour that could have been observed to produce qualitative data in this study.

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..... [1]

(iii) Explain why qualitative data for the behaviour you identified in **(b)(ii)** would have been useful in this study.

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..... [2]

4 In the study by Dement and Kleitman (sleep and dreams), brain activity during sleep was recorded using an EEG (electroencephalograph). Another way to record brain activity is with fMRI (functional magnetic resonance imaging).

Suggest **two** reasons why using an EEG to record brain activity during sleep is a more appropriate choice than using an fMRI.

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..... [4]

5 In the study by Andrade (doodling), a median could have been calculated for the results of the doodling group and the control group.

Outline how a median could have been calculated for the number of names recalled by each group in this study.

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..... [2]

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6 Describe the ethical guidelines of ‘deception’ and ‘confidentiality’, using any examples.

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..... [6]

Section B

Answer **all** questions in this section.

7 Shula is investigating whether there are differences in the way that younger and older people behave when they see each other. She is using observations to record the following behaviours:

- smiling
- waving
- shouting.

(a) Explain whether Shula is conducting a structured observation or an unstructured observation.

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..... [2]

(b) **(i)** Explain why it would be better for Shula to conduct a covert observation than an overt observation.

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..... [2]

(ii) Suggest **one** problem with Shula conducting a covert observation.

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8 Mahi is observing the effect of music on emotions. In part of her study she is collecting data from 20 participants about their emotional responses to songs. She is using the following categories to observe emotional responses:

- angry
- bored
- happy
- relaxed.

(a) (i) Suggest how Mahi could operationalise **two** of these categories of observed emotional responses.

1 .....

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2 .....

..... [2]

(ii) For **one** of your suggestions for the operationalisation of a category in part **8(a)(i)**:

Explain why Mahi could misinterpret or incorrectly categorise an observed emotional response of a participant in her study.

category: .....

.....

..... [1]

(b) Mahi is collecting data in the table below. This is the number of participants who showed each of the four emotional responses. She wants to display this data on a bar chart.

	Observed emotional responses			
	angry	bored	happy	relaxed
Number of participants showing each emotional response				

Label the axes for the bar chart that Mahi will use to display her results.



[3]

(c) In a second study, Mahi's participants will listen to different types of music. She expects that fast music will make the participants feel happy and slow music will make them feel unhappy.

(i) Explain **one** ethical problem with the design of this study.
Do **not** refer to deception or confidentiality in your answer.

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..... [2]

(ii) Suggest **one** way that Mahi could solve the ethical problem you explained in part **8(c)(i)**.

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..... [2]

9 Syd is using an experiment to test whether epinephrine affects sleep. He has two groups of participants, one group receives an epinephrine injection and the other group receives a saline injection. The participants do not know what their injection contains. Each participant is tested at a town centre laboratory on a different night over a 20-night period. The town centre is very busy at the weekend but quiet during the week.

(a) Explain why it is important that participants do **not** know which condition they are in during an experiment.

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..... [2]

(b) Identify Syd's experimental design. Include a reason for your answer.

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..... [2]

(c) Suggest **one** participant variable that could affect Syd's experiment.

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..... [2]

(d) Suggest **one** situational variable that could affect Syd's experiment.

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..... [2]

Section C

Answer **all** questions in this section.

10 Dr Mitchell wants to investigate how physically active people are, and he believes that this may be related to how much they use social media.

(a) Describe how Dr Mitchell could conduct a correlational study to investigate the relationship between how physically active people are and how much they use social media.

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(b) Identify **one** practical weakness/limitation with the procedure you have described in your answer to part **(a)** and suggest how your study might be done differently to overcome the problem.

Do **not** refer to ethics or sampling in your answer.

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..... [4]

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