Cambridge International AS & A Level

CANDIDATE
NAME

CENTRE
NUMBER

CANDIDATE
NUMBER

PSYCHOLOGY **9990/21**

Paper 2 Research Methods **October/November 2023**

1 hour 30 minutes

You must answer on the question paper.

You will need: Ruler

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.

Section A

Answer **all** questions in this section.

1   **(a)** Explain what is meant by 'covert' observation.

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.... [2]

(b) Explain **one** strength of a covert observation.

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.... [2]

(c) Explain **one** weakness of a covert observation.

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.... [2]

2   A hypothesis is 'There will be a difference in helpfulness between obedient and disobedient people'.

(a) State whether this is a directional (one-tailed) hypothesis or a non-directional (two-tailed) 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]

3 The study by Pepperberg (parrot learning) tested a parrot's understanding of the concepts of 'same' and 'different'. Table 3.1 shows the total results for correct responses and incorrect responses for two categories of objects.

Table 3.1

Category of objects	Total responses to 'same?' and 'different?' questions	
	correct	incorrect
objects used in training	99	30
objects not used in training	96	17

(a) (i) Describe the results in Table 3.1 for correct responses.

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.... [1]

(ii) Describe the results in Table 3.1 for incorrect responses.

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.... [1]

(b) Whether or not the objects had been used in training affected the accuracy of the parrot's responses.

Describe how Pepperberg explained this effect.

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.... [2]

4 In the study by Canli et al. (brain scans and emotions), all the participants were female.

State the **two** reasons that Canli et al. gave for using only female participants in this study.

1 ....

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2 ....

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[2]

5 In Experiment 1 of the study by Laney et al. (false memory), participants were randomly allocated to one of two conditions (levels of the independent variable).

(a) State what is meant by 'random allocation'.

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.... [1]

(b) State why one of the two groups was called a 'control condition'.

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.... [1]

6 Describe the ethical guidelines of 'right to withdraw' and 'confidentiality', using any examples.

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.... [6]

Section B

Answer **all** questions in this section.

7 Two female researchers, Meilin and Nina, are preparing a structured interview about dreams. Each researcher will interview 10 participants.

(a) Suggest **three** ways that Meilin and Nina could standardise their structured interview, other than using the same questions.

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2 ....

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3 ....

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[3]

(b) Explain **one** reason why a structured interview should be standardised.

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.... [2]

(c) Explain **one** reason why it may be better for Meilin and Nina to use an unstructured interview.

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.... [2]

(d) Outline **one** ethical problem with interviewing participants about their dreams.

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.... [1]

8 Alf conducted an experiment comparing the range of television programmes that old and young people watch. He collected his data by questionnaire and found that young people watch a wider range of television programmes than old people.

(a) (i) Suggest **one** extraneous variable that could affect the range of television programmes that old people watch, other than their age.

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.... [2]

(ii) Explain how Alf could investigate whether the extraneous variable that you suggested in **(a)(i)** was the cause of the difference he found.

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.... [2]

(b) Alf used opportunity sampling to obtain participants but would have preferred to use volunteer sampling.

(i) Outline what is meant by 'volunteer sampling'.

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.... [1]

(ii) Suggest **one** way that Alf could have used volunteer sampling to obtain both old and young participants.

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.... [2]

(c) Explain the experimental design that Alf used.

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.... [2]

9 Calle is planning a correlational study. He is measuring two variables: happiness and confidence.

Calle's friend Violet is helping him to plan his questions.
Calle has written two questions:

- For happiness: Are you happy? Answer 1 for yes and 0 for no
- For confidence: How certain do you feel that you will succeed when you begin a new task? 0 = not at all, 5 = very.

(a) Violet says that the data Calle would get from his question on happiness would **not** be suitable to use in a correlation.

Explain why Violet is correct.

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.... [1]

(b) Suggest **one** problem with the validity of Calle's question on confidence.

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.... [2]

(c) (i) Calle changes his question for happiness and uses his original question for confidence. He finds a positive correlation.

Draw a line to show the pattern of Calle's data, using the axes below.

confidence

happiness

[1]

(ii) Explain why Calle **cannot** conclude that greater happiness leads to higher confidence.

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.... [3]

Section C

Answer **all** questions in this section.

10 Sophie is planning a natural experiment to investigate the effects of closing a road on anger in drivers. One road into a town will be closed for three weeks and the traffic will have to take a longer route. Sophie wants to investigate whether having to take the longer route makes drivers angry.

(a) Describe how Sophie can conduct a natural experiment to investigate whether having to take the longer route makes drivers angry.

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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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