Cambridge Assessment International Education

# Cambridge International AS & A Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

*4305579926*

**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.


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## 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]

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**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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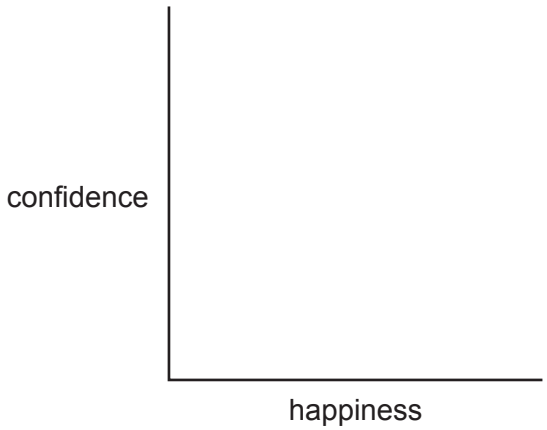
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..... [2]

**(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.




[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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