Cambridge Assessment International Education

# Cambridge International AS & A Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

*7026456802*

**PSYCHOLOGY** **9990/21**

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 study by Milgram (obedience) used a shock generator, which looked real.

Explain why it was necessary that the shock generator looked real.

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..... [2]

**2** Bill has two groups of children in his study and writes a directional hypothesis. It states that 'Older children are more obedient than younger children'. He then decides that this might not be correct and uses a non-directional hypothesis instead.

**(a)** Suggest a non-directional hypothesis for Bill's study.

.....

..... [1]

**(b)** State how Bill will find the mode for the age of the group of younger children.

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..... [1]

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**(c)** Suggest **two** reasons why it could be ethically more difficult to measure obedience in children than in adults.

1 .....

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2 .....

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..... [4]

**3** Describe **two** features of a laboratory experiment. Use a different example from the study by Schachter and Singer (two factors in emotion) for each feature.

1 .....

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2 .....

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..... [4]

**4** Baron-Cohen et al. (eyes test) presented the eyes test results on a graph showing the percentage of participants who gained each score. The graph is shown in Fig. 1.

**(a)** Label the axes on Fig. 1, using the answer spaces below.

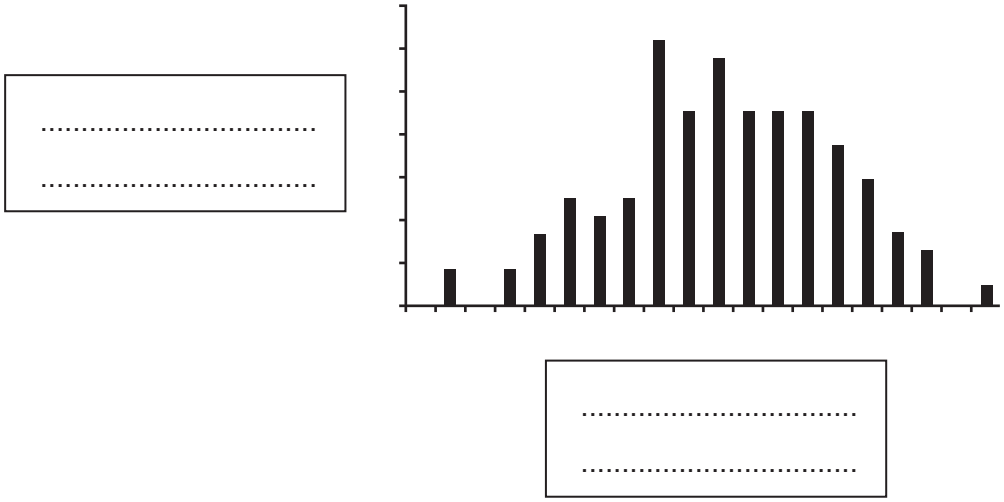



**Fig. 1**

[2]

**(b)** Name the type of distribution shown in Fig. 1.

..... [1]

**5** Participants in a study are learning to throw a ball through a hoop.

Suggest how the variable of 'learning' could be operationalised in this study.

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..... [1]

**6** Describe the ethical guidelines of 'species and strain' and 'numbers' in relation to animals, using any examples.

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..... [6]

## Section B

Answer **all** questions in this section.

**7** Kate is using a questionnaire to investigate how participants could feel about people who are older than them. The emotions she is investigating are:

- boredom
- empathy
- fear
- happiness.

**(a) (i)** Kate needs to define each of these emotions.

Suggest how Kate could operationalise **two** of the emotions that she is investigating.

1 .....

.....

2 .....

..... [2]

**(ii)** For **one** of your suggestions in **(a)(i)**:

Explain why Kate could misinterpret this emotion when gathering data in her study.

Emotion: .....

.....

..... [1]

**(b)** Kate measures how strongly the participants feel each emotion about people who are older than them, using a score from 0–10.

**(i)** Kate wants to find the median 'happiness' score.

Outline how to find a median score.

.....

..... [1]

**(ii)** Kate wants to use a graph to plot the median results for each of the four emotions.

Name the **most** appropriate type of graph for Kate to use.

..... [1]

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**(iii)** Kate calculated the standard deviation of scores for each emotion. The standard deviations are shown in Table 1.

**Table 1**

| Emotion | boredom | empathy | fear | happiness |
|---|---|---|---|---|
| Standard deviation | 1.4 | 3.2 | 2.2 | 2.6 |

Explain which emotion had the widest spread of scores.

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..... [2]

**8** Gill is planning a structured interview about disruptions to sleep patterns. She is investigating the effects of work, sport and family. She begins by writing four questions:

A Describe how your sleep pattern changes when extra family members stay for the night.
B How long do you sleep after you have participated in sport compared to when you have not participated in sport? More time / less time.
C Is your sleep quality in the week compared to the weekend better, worse or about the same?
D Explain how any other factors affect your sleep patterns.

**(a)** Identify **one** closed question from A to D.

..... [1]

**(b)** Identify **one** open question from A to D.

..... [1]

**(c)** Gill plans two more questions to use in her structured interview:

E Is your sleep better or worse if you eat a meal close to bedtime? Better / worse.
F Explain how your sleep pattern is affected if you work at night.

Suggest **one** problem that Gill could have when using **one** of the new questions.

Question E or F: .....

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..... [2]

**(d)** Gill's friend reads the six questions and says it would be better if she conducted a semi-structured interview instead of her structured interview.

**(i)** Explain what makes Gill's interview a structured interview.

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..... [1]

**(ii)** Suggest how Gill could change her structured interview into a semi-structured interview.

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..... [1]

**(e)** Gill notices that people who look like they have not slept well often refuse to take part in the study.

Explain how this problem could affect the results of Gill's study.

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..... [3]

**9** Manas is a researcher at a drug company and is conducting an experiment to test a new drug for patients who have phobias. The drug is a clear, tasteless liquid that should help the patients to relax during therapy. Manas selects 10 patients who will take the new drug and 10 other patients who will be given water, which is also clear and tasteless. The patients in both groups believe they are taking the new drug.

**(a)** Identify the experimental condition **and** the control condition in this experiment.

experimental condition: .....

control condition: ..... [1]

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**(b)** Manas has controlled two variables. The drug is:
- a clear liquid
- tasteless.

**(i)** Suggest **two** other controls that could be used in this experiment to keep the experimental condition and the control condition as similar as possible.

1 .....

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2 .....

..... [2]

**(ii)** Explain why it is important to keep the experimental condition and the control condition as similar as possible.

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..... [1]

**(c)** Suggest **two** ethical problems with this experiment.

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..... [4]

## Section C

Answer **all** questions in this section.

**10** Dr Angelo wants to investigate how young children respond when their teachers are helpful. She has seen teachers being helpful to children in the classroom and in the playground.

**(a)** Describe how Dr Angelo can conduct an observational study to investigate the behaviour of children when their teachers are helpful.

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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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