



Cambridge International AS & A Level

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PSYCHOLOGY**9990/21**

Paper 2 Research Methods

May/June 2025**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.
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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.

- 1 (a) Describe what is meant by a questionnaire.

.....

.....

.....

..... [2]

- (b) Explain **one** practical strength of using a questionnaire.

.....

.....

.....

..... [2]

- 2 The study by Bandura et al. (aggression) provides no information about whether or not consent was obtained from the participants.

- (a) Outline what is meant by 'consent'.

.....

..... [1]

- (b) Suggest why obtaining consent would have been important in this study.

.....

.....

.....

..... [2]



- 3 In the study by Milgram, obedience was tested. Participants with a range of different occupations and ages were used to improve generalisability.

- (a) Suggest **one** reason why using participants with different occupations could be important to Milgram's test of obedience. Use an example in your answer.

.....

.....

..... [2]

- (b) Suggest **one** reason why using participants with different ages could be important to Milgram's test of obedience. Use an example in your answer.

.....

.....

..... [2]

- 4 In the study by Baron-Cohen et al. (eyes test), the ages of all participants were known. The mean and standard deviation of the ages of the participants in Groups 1 and 3 are shown in Table 4.1.

Table 4.1

Group	Mean	Standard deviation
Group 1 (AS/HFA adults)	29.7	14.5
Group 3 (Students)	20.8	0.8

- (a) State what the means show about the ages of the two groups.

.....

..... [1]

- (b) State what the standard deviations show about the ages of the two groups.

.....

..... [1]



[2]

[6]

7 Dr Smith wants to compare how easily two species of animal learn to press a lever to receive food.

(a) (i) Suggest **one** way that Dr Smith could produce a quantitative measure of how easily the animals learn.

.....

.....

.....

..... [2]

(ii) The two species are very similar, but one is bigger than the other.

For the way that you suggested for measuring how easily the animals learn in part (a)(i): Explain whether this would be valid for both species.

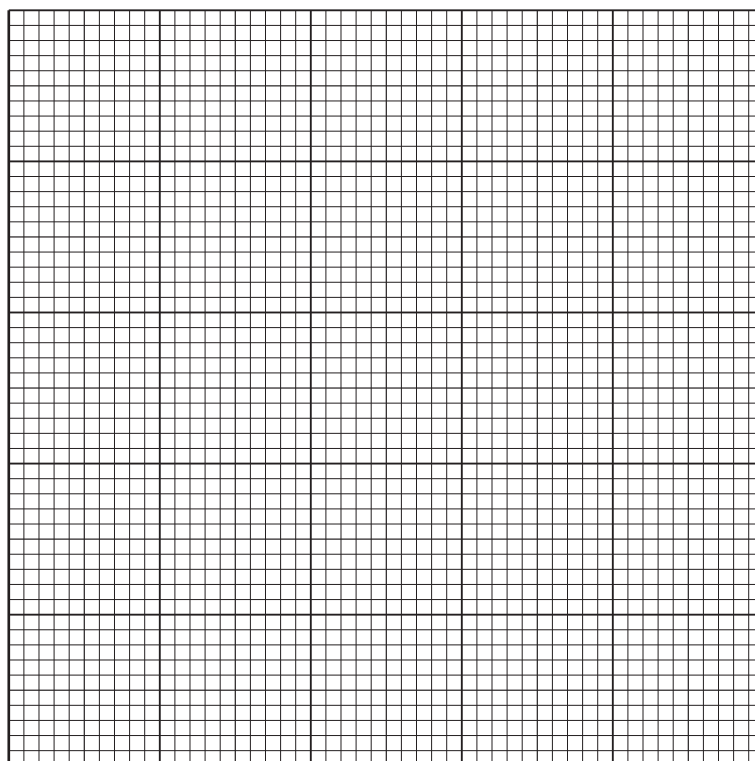
.....

.....

.....

..... [2]

(b) Draw the axes for a graph that could be used to show the results of Dr Smith's study using the measure of learning that you suggested in part (a)(i). You **must** label the axes.



[3]





- (c) Suggest how Dr Smith could follow **one** ethical guideline in relation to animals, other than 'species'.

.....

.....

.....

..... [2]

- 8 Josie is collecting data from other students in her class to test the hypothesis 'There is a relationship between tidiness of classwork and enjoyment of lessons'.

- (a) Josie will use one of these measures of tidiness:

- look at the work herself and decide whether each student's work is tidy or not
- ask the student to rate the tidiness of their work on a scale of 0 (untidy) to 5 (very tidy).

- (i) Explain **one** problem about validity or reliability that Josie could have with **one** of her measures of tidiness.

.....

.....

.....

..... [2]

- (ii) Explain **one** problem about ethics that Josie could have with **one** of her measures of tidiness.

.....

.....

.....

..... [2]

- (b) The hypothesis that Josie is testing is correlational.

Explain which **one** of the measures of tidiness in part (a) is **not** suitable for Josie to use in her correlation.

.....

.....

.....

..... [2]





(c) Josie's data shows that students who enjoy lessons more have tidier work.

(i) Explain what Josie will conclude about her correlation.

.....

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.....

..... [2]

(ii) Explain whether Josie can conclude that having tidier classwork influences students' enjoyment of lessons.

.....

.....

.....

..... [2]





- 9 Dr Gao is planning a longitudinal study about changes in reading habits. She will study the same group of participants from childhood, through adolescence and into adulthood.

(a) Dr Gao will need to contact her participants at regular intervals.

(i) Dr Gao is deciding how often to test her participants, and is considering:

- weekly
- yearly.

Explain which of these intervals is the **most** suitable for Dr Gao's study.

.....
 [1]

(ii) Suggest how Dr Gao could contact her participants during the study.

.....
 [1]

(iii) Suggest **two** problems that Dr Gao may have when trying to contact her participants at regular intervals.

1

 2
 [2]

(b) A colleague, Dr Roberts, says that the study could be conducted by comparing participants of different ages at one point in time.

Suggest **one** advantage of Dr Roberts' idea, compared to Dr Gao's plan for a longitudinal study.

Do **not** refer to contacting participants in your answer.

.....

 [2]





Answer **all** questions.

- Do **not** describe sample/sampling technique or ethical issues/guidelines in your answer.

[10]



- (b) (i) Explain **one** advantage of using an independent measures design in this study compared to using a repeated measures design.

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

.....

.....

.....

..... [2]

- (ii) Explain **one** disadvantage of using an independent measures design in this study compared to using a repeated measures design.

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

.....

.....

.....

..... [2]







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9990/22

May/June 2025

1 hour 30 minutes

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Section A

Answer **all** questions.

- 1** Explain how the independent variable (IV) was operationalised in the study by Andrade (doodling).

.....

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..... [2]

- 2** In the study by Hassett et al. (monkey toy preferences), some of the data was displayed on graphs. This included a comparison of time spent playing with different types of toys by males and females.

- (a)** Name the type of graph used to display this data.

.....

..... [1]

- (b)** Explain why this graph was a suitable way to display this data.

.....

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..... [2]

3 In the study by Milgram, two types of data were collected to demonstrate obedience. One example of each type was:

- voltage reached when the participant refused to continue
- comments from the participants.

(a) For the example of 'voltage reached when the participant refused to continue':

(i) Identify this type of data.

.....
 [1]

(ii) State the highest voltage at which **all** participants obeyed.

.....
 [1]

(b) For the example of 'comments from the participants':

(i) Identify this type of data.

.....
 [1]

(ii) Outline **one** of the comments made by a participant in this study.

.....
 [1]

(c) Suggest **one** strength of each type of data in this study.

1

.....

2

.....

[4]

- 4 In a study of learning, animals are taught to drop a small object into a hole.

Suggest how 'learning' could be operationalised in this study.

.....
..... [1]

- 5 In some studies, scientific equipment is used to measure variables, such as brain activity or eye movements.

Suggest **two** weaknesses of using scientific equipment to measure variables.

1
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2
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.....
..... [4]

6 Describe order effects, using any example(s).

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..... [6]

7 Inma is observing one student at a time in the playground, to investigate how often each individual talks to other students. Inma is concerned about two uncontrolled variables:

- a student being observed when few other students are present
- a student with a headache may talk less.

(a) (i) Explain which **one** of these is a participant variable.

.....
..... [1]

(ii) Suggest how Inma could limit the effect of the participant variable.

.....
.....
.....
..... [2]

(b) (i) Explain which **one** of these is a situational variable.

.....
..... [1]

(ii) Suggest how Inma could limit the effect of the situational variable.

.....
.....
.....
..... [2]

(c) Inma is also concerned about the effect of social desirability on her results.

(i) Suggest **one** way that social desirability could affect Inma's results.

.....

.....

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..... [2]

(ii) Suggest how Inma might reduce the effect of social desirability on her results.

.....

.....

.....

..... [2]

- 8 Kong is interviewing people about friendliness. He tells his participants his study is about how they spend their free time. Kong uses two measures of friendliness:

- timing the duration of eye contact between himself and each participant
- asking the question, 'Are you excited or scared at parties?'

- (a) (i) State which measure of central tendency Kong should use to analyse his data from timing the duration of eye contact.

.....
 [1]

- (ii) State which measure of central tendency Kong should use to analyse his data from asking participants, 'Are you excited or scared at parties?'

.....
 [1]

- (b) Kong's friend says that both of his measures of friendliness could be unethical, but for different reasons.

- (i) Explain **one** reason why timing the duration of eye contact could break **one** ethical guideline.

.....

 [2]

- (ii) Explain **one** reason why asking participants, 'Are you excited or scared at parties?' could break **one** ethical guideline.

You **must** use a different ethical guideline from your answer to part (b)(i).

.....

 [2]

- (c) Kong will use opportunity sampling.

Outline what is meant by 'opportunity sampling', using Kong's study as an example.

.....

 [2]

9 Dr Shaw is planning a questionnaire about early childhood memories.

(a) There are **two** techniques for presenting a questionnaire to participants.

Identify the **two** techniques.

- 1
-
- 2
-
- [2]

(b) For **one** of the questionnaire techniques that you identified in part (a):

Suggest **one** reason why this would be appropriate for Dr Shaw to use.

-
-
-
- [2]

(b) For **one** of the variables you have described in part (a):

Explain **one** practical strength and **one** practical limitation in relation to this variable.

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..... [4]

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PSYCHOLOGY**9990/23**

Paper 2 Research Methods

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Section A

Answer **all** questions.

- 1 (a) Outline the ethical guideline of 'confidentiality'.

.....
..... [1]

- (b) Explain **one** way that the ethical guideline of confidentiality was followed in the study by Dement and Kleitman (sleep and dreams).

.....
.....
.....
..... [2]

- 2 Cognitive psychologists sometimes study people's recall of past events.

- (a) Outline what is meant by 'subjectivity'.

.....
..... [1]

- (b) Suggest how subjectivity could be a problem when studying people's recall of past events.

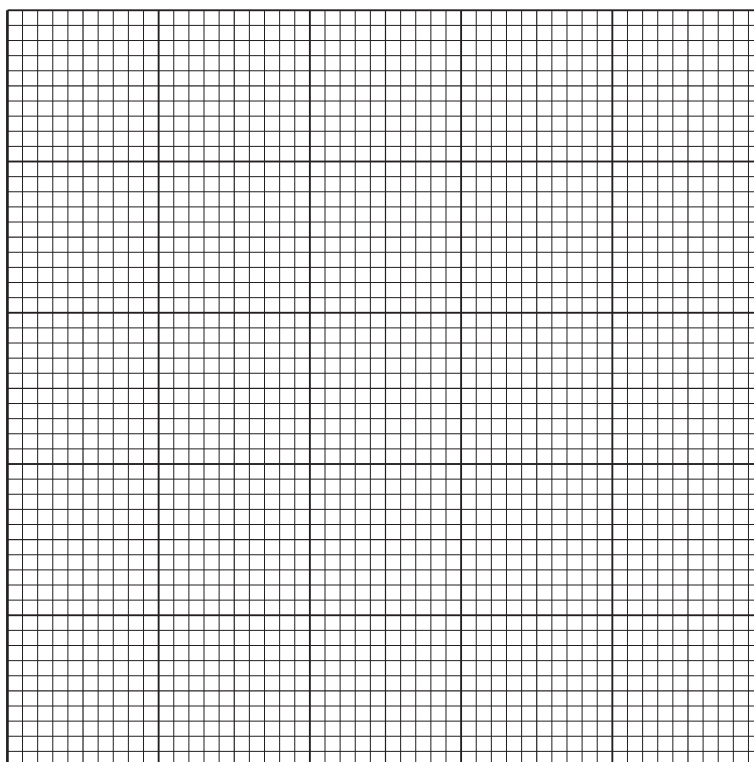
.....
.....
.....
..... [2]





- 3 A study tested the relationship between average number of hours of sleep per night and physical health. The participants slept in their own homes. The results showed a positive correlation.

(a) Sketch a graph to show the results of this study. You **must** label the axes.



[3]

(b) Suggest **two** problems with collecting data about the number of hours of sleep in this study.

1

.....

.....

.....

2

.....

.....

.....

[4]



- State whether this is a directional or a non-directional hypothesis. Justify your answer.

..... [2]

- Suggest why Bandura et al. may **not** have used volunteer sampling.

..... [2]

- [6]



7 Dr Jones is conducting a case study of a man, Kevan, who has been practising mindfulness for 10 years.

(a) Suggest **two** questions that Dr Jones could use in a self-report (questionnaire or interview) that would investigate different features of Kevan's mindfulness.

1

.....

2

.....

[2]

(b) Dr Jones wants to investigate whether Kevan has changed in any ways that could be linked to his mindfulness. He plans to interview Kevan's friends.

(i) Suggest **two** changes in Kevan that his friends could observe. These changes **must** be behavioural, emotional or cognitive.

1

.....

2

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[2]

(ii) Explain why **one** of the changes that you suggested in part (b)(i) would be difficult to investigate.

.....

.....

.....

..... [2]





(c) Dr Jones has several different questions on his self-report that he has used repeatedly with a similar case. He has identified two problems:

- Problem 1: when he studies the responses to one item, he discovers that there are several different ways to interpret the answers.
- Problem 2: he is concerned that another item, which was supposed to measure mindfulness, is measuring happiness instead.

(i) Explain which problem relates to reliability.

.....
..... [1]

(ii) Explain which problem relates to validity.

.....
..... [1]





8 Dr Mohan has proposed a study using monkeys in a laboratory. A colleague has two suggestions to make the study more ethical:

- suggestion 1: using animals which have less complex brains
- suggestion 2: using videos of the animals' behaviour in their natural habitat.

(a) Explain why suggestion 1 would make Dr Mohan's study more ethical.

.....

.....

.....

..... [2]

(b) Explain why suggestion 2 would make Dr Mohan's study more ethical.

.....

.....

.....

..... [2]





- 9 Kioni is conducting a longitudinal study. Her aim is to study changes in preferred personal space throughout her participants' lives.

- (a) Kioni is deciding how frequently throughout her participants' lives she should test them.

Suggest a suitable frequency for Kioni to use to test her participants throughout their lives.

.....
 [1]

- (b) Suggest **one** way for Kioni to re-contact her participants each time she needs to test them.

.....

 [2]

- (c) (i) Describe **one** way that Kioni could measure personal space.

.....

 [2]

- (ii) For the way you described in part (c)(i):

Suggest **one** strength of measuring personal space in this way.

.....

 [2]





(d) Kioni is concerned that there may be variables other than age that could affect an individual's personal space preferences.

(i) Suggest **two** variables that could affect an individual's preferred personal space, other than age and gender.

1

.....

2

.....

[2]

(ii) For **one** of the variables that you suggested in part (d)(i):

Suggest how this variable could affect an individual's preferred personal space.

.....

.....

.....

..... [2]



10 Isla is a teacher. She thinks that allowing students to play with an object in class will improve attention. Isla is unsure whether it will be better to play with a pen or play with a different object that is not used for writing.

- Do **not** describe sample / sampling technique or ethical issues / guidelines in your answer.

[10]

[10]



(b) For **one** feature of the experiment you have described in part (a):

(i) Explain why that feature is a strength of the study.

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

.....

.....

.....

..... [2]

(ii) Explain how that feature could be a weakness of the study.

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

.....

.....

.....

..... [2]





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