



## Cambridge International AS & A Level

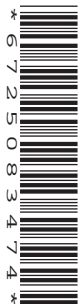
CANDIDATE  
NAME

CENTRE  
NUMBER

--	--	--	--	--

CANDIDATE  
NUMBER

--	--	--	--



**PSYCHOLOGY**

**9990/22**

Paper 2 Research Methods

**May/June 2020**

**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. Blank pages are indicated.

**Section A**

Answer **all** questions in this section.

1 (a) State what is meant by the ethical guideline of ‘replacement’ in relation to animals.

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

(b) Suggest **one** practical problem with following the ethical guideline of replacement in relation to animals.

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

2 In the study by Canli et al. (brain scans and emotions), participants watched scenes presented to them on a screen. They responded to these scenes by pressing buttons. Their response was one dependent variable.

(a) Describe how this dependent variable was operationalised in this study.

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

(b) Explain **one** reason why the results of this study may not generalise to everyday life.

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

## 3

3 Andrade conducted an experiment on doodling. Alternatively, she could have conducted a case study.

(a) Identify **two** ways that data could be collected in this case study.

- 1 .....
- .....
- 2 .....
- ..... [2]

(b) For **one** of your answers in 3(a):

Explain **one** advantage of this way of collecting data in this case study.

Way of collecting data: .....

Advantage: .....

.....

..... [2]

4 (a) Name **two** types of observations.

- 1 .....
- 2 ..... [2]

(b) For **one** of your answers in 4(a):

Explain why this type of observation is a valid way of observing participants.

Type of observation: .....

Explanation: .....

.....

..... [2]

- 5 At the start of the study by Bandura et al. (aggression), the children were scored numerically on their behaviour in the nursery school.

Explain **one** advantage of scoring behavioural data in this way.

.....

.....

.....

..... [2]

- 6 Describe what is meant by ‘participant variables’ and ‘situational variables’ in research, using any examples.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

**Section B**

Answer **all** questions in this section.

7 Mark is planning a natural experiment to investigate the short-term effect of noise on classroom performance of school children. He has found a school next to a noisy railway. He is going to compare the children before and during a temporary closure of the railway which will stop all trains for two weeks.

(a) Explain what makes this study a natural experiment.

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

(b) Suggest **one** way that Mark could measure the effect of noise on the children.

.....  
.....  
.....  
.....  
..... [3]

(c) Identify **two** extraneous variables that Mark could control.

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

(d) Write an operationalised directional (one-tailed) hypothesis for Mark's experiment.

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

8 Rachel is correlating two variables: helping behaviour and communication skills.

(a) (i) Suggest **one** way that Rachel could measure helping behaviour for this study.

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

(ii) For the way you have suggested in (a)(i):

Suggest **one** advantage and **one** disadvantage of this way of measuring helping behaviour.

Advantage: .....  
.....  
.....

Disadvantage: .....  
.....  
..... [4]

(b) Outline the relationship that Rachel will find if her results indicate a positive correlation.

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

9 Perry has collected data about intelligence. He has measured the IQ (Intelligence Quotient) of a large sample of participants.

(a) Describe **one** way that Perry could obtain a large sample of participants.

.....

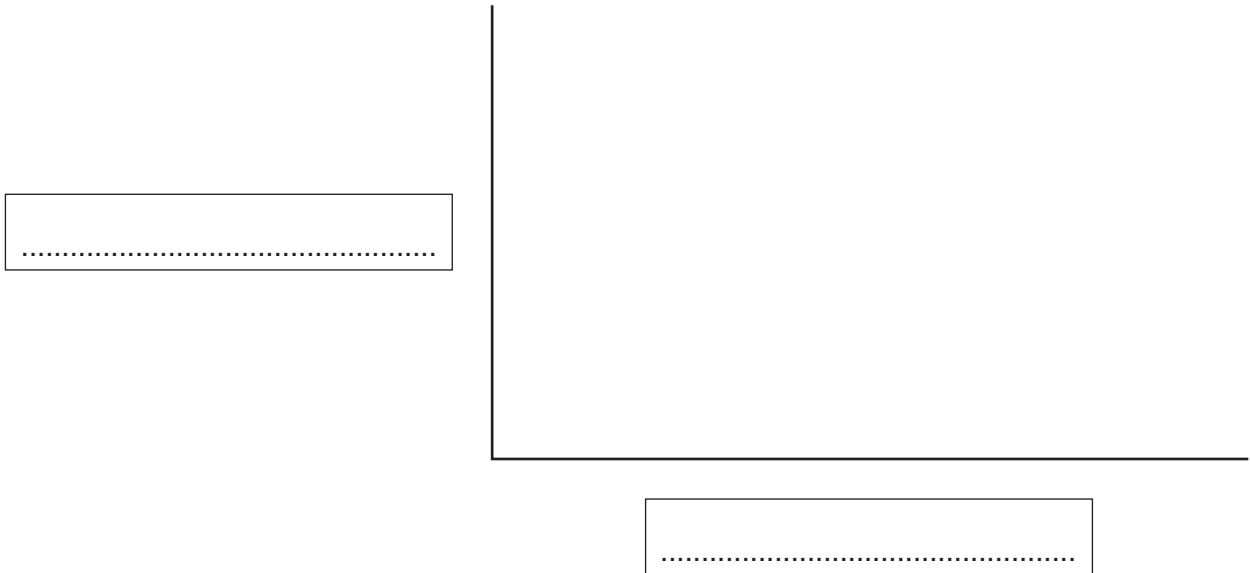
.....

.....

..... [2]

(b) (i) When Perry plots the IQ results, they show a normal distribution.

Draw a graph of the likely results of the IQ scores using the axes below.  
You must label the axes of your graph. [3]



(ii) Name the **most** appropriate measure of central tendency for Perry to use with the IQ data. Include a reason for your answer.

.....

.....

.....

..... [2]

(iii) Label your graph to show the position of the measure of central tendency that you have named in (b)(ii). [1]





.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... [10]

**(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.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

..... [4]





**BLANK PAGE**

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cambridgeinternational.org](http://www.cambridgeinternational.org) after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.