Cambridge International AS & A Level

Cambridge Assessment International Education
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

1439808530

PSYCHOLOGY **9990/21**

Paper 2 Research Methods **May/June 2019**

1 hour 30 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your centre number, candidate number and name in the spaces at the top of this page.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **10** printed pages and **2** blank pages.

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Cambridge Assessment International Education

[Turn over

Section A

Answer **all** questions in this section.

1 From the study by Milgram (obedience):

(a) Outline the sampling technique used in this study.

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..... [2]

(b) Suggest **one** advantage of using this sampling technique in this study.

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

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(b) Suggest **one** disadvantage of conducting a covert observation.

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3 An experiment is testing the aim that smiling affects helpfulness. The procedure is to investigate whether people leaving a shop will hold a door open for people who are smiling.

(a) Write an operationalised directional (one-tailed) hypothesis for this experiment.

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..... [2]

(b) Write a null hypothesis for this experiment.

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..... [1]

4 The study by Saavedra and Silverman (button phobia) raised ethical issues.

Explain **two** ethical guidelines that are relevant to this study.

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..... [4]

5 State **one** advantage of using the mean as a measure of central tendency.

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6 Define extraneous variables and uncontrolled variables, using any examples.

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Section B

Answer **all** questions in this section.

7 Dan is looking for a correlation between the amount children play and how aggressive they are. He is not sure whether children who play more will be more aggressive or will be less aggressive.

(a) (i) Suggest how 'playing' could be operationalised using a quantitative measure.

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..... [1]

(ii) Suggest **one** problem with measuring 'playing'.

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..... [1]

(b) Suggest how 'aggression' could be operationalised using a quantitative measure.

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(c) Dan finds that children who play more are also more aggressive.

Explain why Dan **cannot** conclude that playing causes aggression.

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..... [2]

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[Turn over

8 Zho is investigating how quickly fish learn to respond to different coloured lights. She trains fish in two tanks to swim to the end of the tank for food in response to a light. She uses a red light with one tank and a green light with the other tank. She times how quickly the fish swim to the end of the tank.

(a) Identify the dependent variable in this experiment.

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(b) Identify the independent variable in this experiment.

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(c) Explain **two** ethical guidelines for working with animals.

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(d) Suggest how **one** ethical guideline for working with animals could be followed in Zho's experiment.

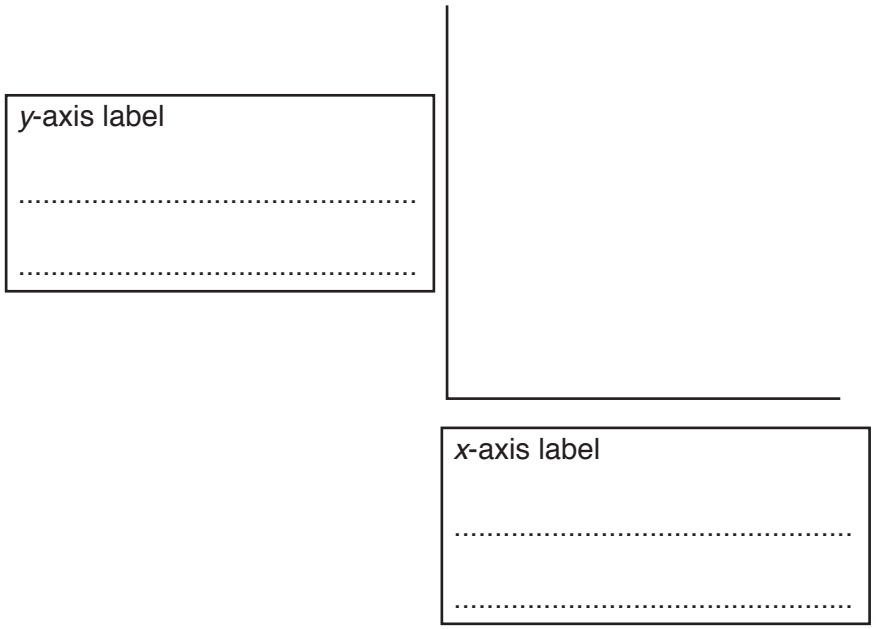
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..... [1]

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(e) Zho is plotting a bar chart of her results.

Label the *x*-axis and *y*-axis on the graph below.



[3]

9 Ella is conducting a laboratory experiment to find out whether singing helps people to relax. She is using a repeated measures design and will use pulse rate to measure relaxation.

(a) Identify a suitable control condition for Ella's experiment.

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..... [1]

(b) Explain why a repeated measures design is the best experimental design for Ella's study.

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(c) Explain **one** disadvantage of using a repeated measures design in Ella's study.

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(d) Ella considered using a field experiment but decided to use a laboratory experiment.

Explain why it could have been better for Ella to conduct a **field** experiment.

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Section C

Answer **all** questions in this section.

10 Dr Bell is interested in how aware people are of the two factors involved in emotion according to the two-factor theory. He wants to know if people are aware of the influence of both physiological changes and cognitive changes on their emotions. He intends to use a structured interview to investigate this, based on people's recall of emotional events.

(a) Describe how Dr Bell could conduct a structured interview to investigate whether people were aware of the influence of both physiological changes and cognitive changes on their emotions.

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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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