



Cambridge International AS & A Level

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PSYCHOLOGY

9990/21

Paper 2 Research Methods

October/November 2024

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.
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INFORMATION

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- 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 Explain what is meant by a 'matched pairs design', including any example.

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..... [2]

- 2 A longitudinal experiment is testing the hypothesis 'Elephants will learn better as they grow older'. Identify the type of hypothesis in this experiment. Justify your answer.

.....

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.....

..... [2]

- 3 For the study by Baron-Cohen et al., a revised version of the 'eyes test' was developed. However, some problems with ecological validity remained.

- (a) Define what is meant by the term 'ecological validity'.

.....

..... [1]

- (b) (i) Outline **one** problem with the ecological validity of the revised eyes test.

.....

..... [1]

- (ii) Explain **one** way in which the problem you identified in part (b)(i) could be solved.

.....

..... [1]





4 The study by Hassett et al. (monkey toy preferences) was an experiment.

(a) Describe what is meant by an 'experiment'.

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..... [2]

(b) State **one** independent variable from this study.

.....

..... [1]

(c) Describe **two** strengths of experiments as a research method.

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..... [4]





5 Describe inter-rater reliability and inter-observer reliability, using any example(s).

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- 6 Dr Eynon is a university lecturer studying personality. She tested the personality of some of her students and divided them into two groups, 'personality R' and 'personality S'. Dr Eynon then showed them photographs of pleasant scenes, such as a beach. Half of the scenes contained people and half did not contain people. They scored each photograph to show how much they liked it.

- (a) (i) Suggest **one** pleasant scene that Dr Eynon could use for one of her photographs, other than a beach.

.....
 [1]

- (ii) Dr Eynon needs to control many features about the scenes to ensure that they are similar, in addition to manipulating whether they contain people or not.

Suggest **two** features that Dr Eynon should control about the scenes.

1

 2
 [2]

- (iii) Explain why **one** of the features you have suggested in part (a)(ii) would be important in Dr Eynon's study.

Feature 1 or 2:

 [2]



(b) Participants were shown the photographs in a random order. Dr Eynon calculated a total liking score for each of the two types of scene.

(i) Table 6.1 shows the total scores for the two types of scene, for each group of participants.

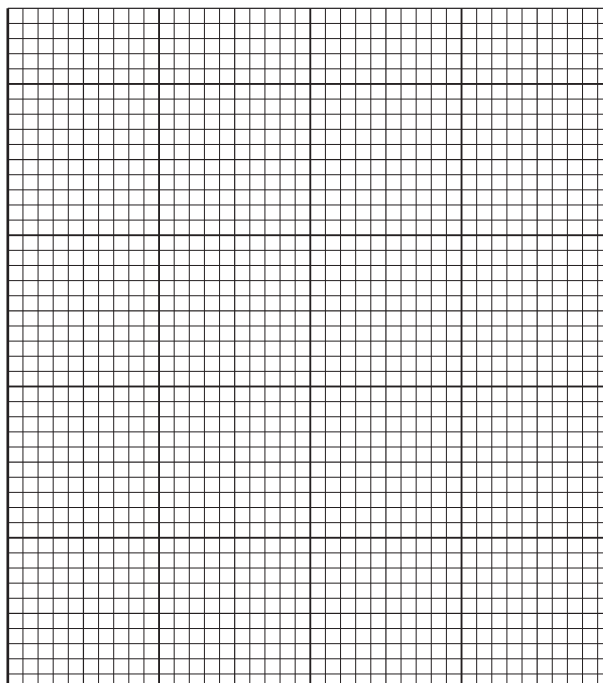
Draw a graph, showing **only** the results for 'photographs with people' from Table 6.1. You **must** label the axes.

Table 6.1

	Total score for photographs:	
	with people	with no people
Personality R	45	15
Personality S	18	25

.....

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[3]

(ii) Describe the conclusion that can be made from the data in Table 6.1.

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.....

[2]





- 7 Mr Grainger trains each of his farm animals to enter a stable. He lets the animal approach the stable, then rewards it with food. Each time the animal gets closer to the stable than before, he rewards it with food. When the animal enters the stable, he rewards it again. He repeats this each day until the animal enters the stable without rewards.

(a) (i) Suggest **one** way that Mr Grainger can measure the success of this training.

.....

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..... [2]

(ii) For the measure of success you suggested in part (a)(i):

Identify the type of data produced by this measure of success. Justify your answer.

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..... [2]

(iii) For the measure of success you suggested in part (a)(i):

Explain **one** weakness of the type of data produced by this measure of success.

.....

.....

.....

..... [2]





(b) On some days the training sessions are more successful than on other days. This difference may be caused by situational variables.

(i) Suggest **two** situational variables that could have affected the success of training.

1

.....

2

..... [2]

(ii) For **one** of the situational variables you suggested in part (b)(i):

Explain why this situational variable may have caused differences in the success of training of the animals.

Variable number 1 or 2:

.....

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..... [2]





- 8 Chen is conducting a study that is similar to the study by Piliavin et al. (subway Samaritans). She has asked a young person and an old person to act as 'victims'. Each victim will appear to have difficulty climbing the step on to a bus. Chen will count how many old passengers and how many young passengers help each victim to climb the step.

(a) Suggest **two** ways in which Chen's study is similar to the study by Piliavin et al.

1

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2

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[2]

(b) Suggest **two** ways in which Chen's study is different from the study by Piliavin et al.

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[2]

(c) Explain the sampling technique Chen is using.

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..... [2]

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Section B

Answer **all** questions.

- 9 Tanya is investigating prosocial behaviour (this is positive, friendly behaviour between individuals). She is studying prosocial behaviours in children at her local school and will give a questionnaire to every teacher in the school.

- (a) Describe how Tanya could conduct a study using a questionnaire for teachers to investigate a variety of prosocial behaviours in children.

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

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- (b) (i) Describe **one** practical/methodological strength of the procedure you have described in your answer to part (a).

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

.....

.....

.....

..... [2]

- (ii) Describe one practical/methodological weakness of the procedure you have described in your answer to part (a).

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

.....

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..... [2]

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PSYCHOLOGY

9990/22

Paper 2 Research Methods

October/November 2024

1 hour 30 minutes

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No additional materials are needed.

INSTRUCTIONS

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Section A

Answer **all** questions.

- 1 In the study by Milgram the variable of 'obedience' was measured.

Describe the measure of obedience used.

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.....

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..... [2]

- 2 (a) Explain **one** similarity and **one** difference between a positive correlation and a negative correlation.

Similarity

.....

.....

Difference

.....

..... [2]

- (b) Describe **one** example of a correlation from the study by Hassett et al. (monkey toy preferences).

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..... [2]

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- 3 In the study by Bandura et al. (aggression), details are not given about consent from the parents or the children.

(a) Explain what is meant by 'informed consent'.

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.....

..... [2]

(b) Suggest how informed consent could have been obtained from the children in this study in a way that they would have understood.

.....

.....

.....

..... [2]





- 4 Daniel used a sample of 20 participants in a laboratory experiment using a repeated measures design. He had two conditions:
- listening to loud music
 - listening to quiet music.

(a) Outline what is meant by a 'repeated measures design'. Include an example from Daniel's study.

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..... [2]

(b) (i) Outline what is meant by 'counterbalancing'. Include an example from Daniel's study.

.....

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..... [2]

(ii) Explain **one** strength of a repeated measures design, other than the use of counterbalancing.

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..... [2]





[6]



- 6 Mohsin is investigating whether colour affects supermarket shoppers' food choices. He is comparing healthy and unhealthy snacks that are displayed in blue or green packaging. He spends two weeks conducting a field experiment.

In Week 1 he displays the following combination:

- healthy snacks in blue packets
- unhealthy snacks in blue packets.

In Week 2 he displays the following combination:

- healthy snacks in green packets
- unhealthy snacks in green packets.

Mohsin counts the number of each packet sold.

- (a) Identify the **two** independent variables (IVs) in Mohsin's study.

1

.....

2

.....

[2]

- (b) Mohsin will continue his experiment for two more weeks. This is to be certain that only the independent variables are affecting the dependent variable.

- (i) State the **two** other combinations that Mohsin should display in the additional weeks.

In one week he should display the following combination:

-
-

In the other week he should display the following combination:

-
 -
- [2]

- (ii) Explain why the two combinations that you stated in part (b)(i) would be useful.

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[2]





(c) Define the term 'population'.

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..... [1]

(d) Outline the population being studied by Mohsin.

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





7 Jenny has noticed that some of her school friends doodle and some do not doodle. This may be because some of her friends are more creative than others. She plans to explore this difference using a questionnaire.

(a) (i) Write **one** closed question that Jenny could use to investigate the creativity of her friends.

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

(ii) Write **one** open question that Jenny could use to investigate the creativity of her friends.

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

(b) Jenny's friends study different subjects at school.

Suggest why differences between the subjects they study could also explain the differences in doodling.

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

(c) Jenny wants to conduct an overt observation of her friends doodling. She wants to do this the day after they complete the questionnaire.

Suggest why this may **not** produce valid results.

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



- 8 Parul has conducted a study about happiness. She has counted the number of her colleagues who are smiling when they arrive at work on Monday and on Friday. Fig. 8.1 shows a graph of her results.

(a) Write axis headings for the x-axis and the y-axis on Fig. 8.1.

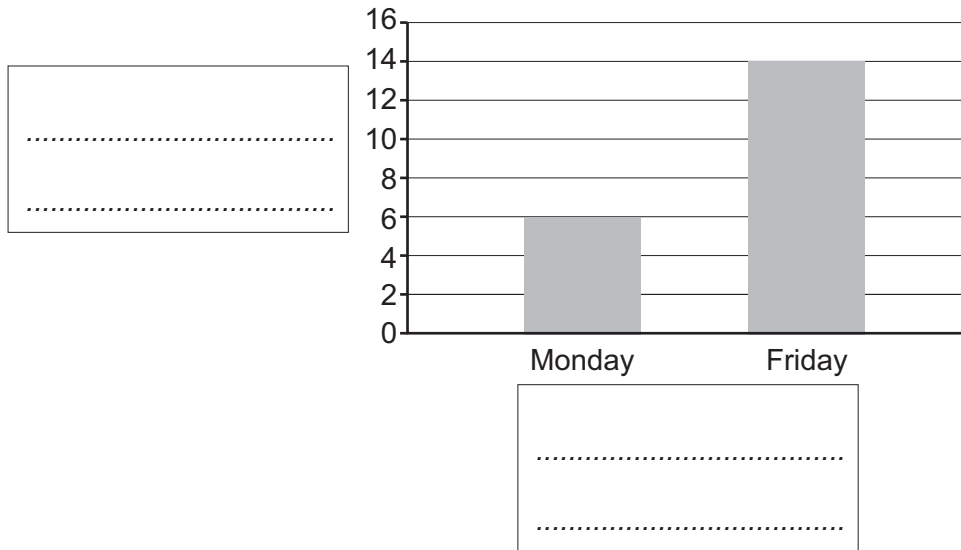


Fig. 8.1

[2]

- (b) Parul's friend says that she should have conducted the study for more than one week.

Explain **one** reason why it would have been better to have conducted the study for more than one week.

.....

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.....

..... [2]





(c) Parul counted the number of colleagues smiling but now thinks this may not have been the best way to measure happiness.

(i) Suggest **one** other way that Parul could have measured happiness.

.....

.....

.....

..... [2]

(ii) For the measure of happiness you suggested in part (c)(i):

Explain **one** advantage of this measure of happiness compared with counting the number of colleagues smiling.

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..... [2]

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9 Lixin is investigating the social behaviour of adults. He plans to observe adults in a town centre during their lunch break.

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

[illegible]



..... [10]

- (b) (i)** Explain how **one** feature of the procedure you described in part **(a)** helps to make the study valid.

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

..... [2]

- (ii) Explain how **one** feature of the procedure you described in part (a) could be a problem for the validity of the study.

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

..... [2]

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PSYCHOLOGY**9990/23**

Paper 2 Research Methods

October/November 2024**1 hour 30 minutes**

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Section A

Answer **all** questions.

- 1 Outline what is meant by the term 'random sampling'.

.....
 [1]

- 2 In a laboratory experiment, the happiness of participants is being compared in two situations:
- with other people
 - without other people.

Identify the dependent variable (DV) in this study. Justify your answer.

.....

 [2]

- 3 In the study by Fagen et al. (elephant learning), most of the data collected was quantitative. Some qualitative data was collected, including an initial observation that one elephant preferred to drink saline rather than water.

- (a) Define what is meant by 'qualitative data'.

.....
 [1]

- (b) Define what is meant by 'quantitative data'. Include an example from the study by Fagen et al.

.....

 [2]





4 Studies in social psychology can use stooges or imagined people to cause participants to respond.

(a) In the study by Piliavin et al. (subway Samaritans), stooges were used as ‘victims’.

Suggest **one** way to improve the ecological validity of this study in relation to the victims.

.....

.....

.....

..... [2]

(b) In the study by Perry et al. (personal space) Experiment 1, responses to imagined people were measured.

(i) Suggest **one** reason why measuring responses to imagined people is more ethical than measuring responses to stooges.

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..... [2]

(ii) Suggest **one** reason why measuring responses to stooges is more practical than measuring responses to imagined people.

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..... [2]





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7 Daiyu is conducting a case study about a seven-year-old child with autism. She is interested in the child's interactions with their family and other children.

(a) Suggest **two** techniques, other than interviews, that Daiyu could use in her case study to collect data about the child. Justify your answers.

1

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2

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[4]

(b) Suggest **two** pieces of information about the child's interactions that would be useful for Daiyu to collect in her case study. Justify your answers.

1

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2

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[4]

(c) Outline **one** practical reason why obtaining information from the child could be difficult.

.....

.....

[1]





8 Hazel is conducting a study in a park to compare the behaviours of adults who have children with them and adults who do not have children with them. She plans to record three behaviours of the adults: whistling, singing and shouting, rather than all actions that people perform.

(a) Explain the type of observation that Hazel plans to use because she is only recording whistling, singing and shouting.

.....

.....

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..... [2]

(b) Outline how Hazel could operationalise **one** of the three behaviours she plans to record.

.....

..... [1]

(c) Hazel had planned to be an overt observer, but a colleague has said she should be a covert observer.

(i) Suggest **one** reason why it would be more ethical to be an overt observer than a covert observer in this study.

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..... [2]

(ii) Suggest **one** reason why it would be more practical to be a covert observer than an overt observer in this study.

.....

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..... [2]





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9 Hudson is planning to correlate how much a person wants to sleep (sleepiness) and the amount of time since their last meal. He will ask people to estimate the amount of time since their last meal, but he needs to find a way to measure sleepiness.

(a) (i) Suggest **one** way that Hudson could measure sleepiness. Do **not** use an interview in your answer.

.....

.....

.....

..... [2]

(ii) Explain **one** strength of the measure of sleepiness you suggested in part (a)(i).

.....

.....

.....

..... [2]

(iii) Explain **one** weakness of the measure of sleepiness you suggested in part (a)(i).

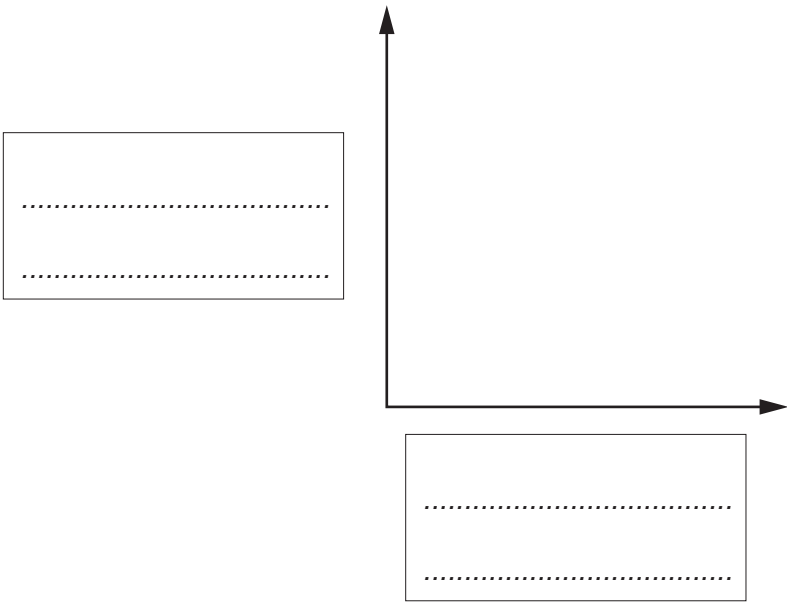
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..... [2]

(b) Sketch a scatter graph, using the axes below, to show what the pattern of results would look like if Hudson found a negative correlation. You **must** label the axes.



Answer **all** questions.

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

[illegible]



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..... [10]

- (b) (i) Explain how **one** part of the procedure you described in part (a) helps to make the study reliable.

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

.....

.....

.....

..... [2]

- (ii) Explain how **one** part of the procedure you described in part (a) could be a problem for reliability of the study.

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

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