



CANDIDATE
NAME

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9990/21

May/June 2022

No additional materials are needed.

- 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.
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- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [].

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[Turn over

Section A

Answer **all** questions in this section.

1 From the study by Bandura et al. (aggression):

(a) Describe how the quantitative data was collected in this study.

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..... [2]

(b) Suggest **one** advantage of using quantitative data in this study.

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..... [2]

2 A study has the experimental hypothesis 'Older people will forget more often than younger people'. This is a 'directional hypothesis' rather than a 'non-directional hypothesis'.

Explain what makes this a 'directional hypothesis'.

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..... [2]

- 3 A problem in experimental studies is the presence of uncontrolled variables. One uncontrolled variable in the study by Andrade (doodling) was how likely each participant was to daydream.

(a) Describe what is meant by an 'uncontrolled variable'.

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 [1]

(b) Explain why the uncontrolled variable of daydreaming was a problem in this study.

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 [2]

- 4 A correlational study tested the idea that the amount of time spent using a phone is linked to quality of sleep.

(a) (i) State the relationship between the variables measured in this study, if a positive correlation was found.

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 [1]

(ii) State the relationship between the variables measured in this study, if a negative correlation was found.

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 [1]

(b) Suggest **one** reason why it was more appropriate to conduct a correlational study rather than an experiment to test this idea.

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 [2]

- 5 In the study by Piliavin et al. (subway Samaritans), one way that data was collected was by listening to the comments made by subway passengers. Differences were reported in relation to the type of victim the comments referred to.

(a) Describe **one** of these differences.

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..... [2]

(b) Suggest **one** problem the observers could have had when listening to the comments made by subway passengers.

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..... [1]

- 6 Describe what is meant by a 'semi-structured interview' and an 'unstructured interview', using any examples.

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..... [6]

Section B

Answer **all** questions in this section.

- 7** Rhiain is investigating how much time babies spend in REM sleep. She thinks that bigger babies will spend more time in REM sleep than smaller babies.

(a) State the aim of Rhiain's study.

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..... [1]

(b) One technique that Rhiain could use to measure REM sleep duration is an EEG (electroencephalograph).

(i) Suggest **one** disadvantage of using this technique in Rhiain's study.

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..... [2]

(ii) Suggest why using **one** other technique to measure REM sleep duration would be more appropriate in this study.

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..... [3]

- (c) Rhiaian also wants to know whether babies who are in REM sleep are having dreams but the babies cannot answer questions about the content of their dreams.

Suggest how Rhiaian could observe the babies during REM sleep to investigate the content of their dreams.

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..... [2]

- 8 Kylo is planning a case study to investigate the importance of a pet/domesticated animal in the life of an elderly person.

- (a) When choosing his sample of one elderly person he has several decisions to make.

Suggest who Kylo should look for as a participant, including:

- the pet/domesticated animal they have and why the elderly person has this animal
- **one** other decision he must make when choosing his participant.

Do **not** refer to sampling techniques in your answer.

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..... [4]

- (b) (i) Suggest **one** technique Kylo could use to collect data from his participant in his case study.

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..... [3]

- (ii) Explain **one** advantage of the technique you suggested in (b)(i).

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..... [2]

- (iii) Explain **one** disadvantage of the technique you suggested in (b)(i).

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..... [2]

9 Rory is investigating factors that affect feeding behaviour in animals.

(a) Rory has chosen to observe the feeding behaviour of some fish.

Suggest **one** problem Rory could have when observing these fish.

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

(b) Rory will keep these fish in a container filled with water.

Suggest **one** other feature related to 'housing' that Rory should consider.
Do **not** refer to feeding in your answer.

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..... [2]

(c) Explain why using fish will limit the generalisability of Rory's findings.

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..... [2]

10 Gareth wants to investigate whether people are more friendly to each other after a positive public event, for example, a festival or a celebrity wedding.

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- This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

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

[4]

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9990/22

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[Turn over

Section A

Answer **all** questions in this section.

- 1** State what is meant by 'reliability'.

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..... [1]

- 2** Explain the difference between 'qualitative data' and 'quantitative data'.

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..... [2]

- 3** Schachter and Singer (two factors in emotion) was a laboratory experiment.

- (a)** The participants in this study were all male. A new experiment could explore gender differences in the effect of epinephrine. However, the stooge may influence emotions differently in males and females.

Suggest how a difference between the influence of the stooge on males and females could affect the results about gender differences in the effect of epinephrine.

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

(b) A second new experiment could include a stooge who claims to feel ill because of the injection.

(i) Suggest how **one** participant variable could affect the results of this second new experiment.

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..... [2]

(ii) Explain **one** ethical problem with this second new experiment.

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..... [2]

- 4 In the study by Baron-Cohen et al. (eyes test), eight problems of validity were identified with the original version of the eyes test. Two of these problems were that:
- the task involved a forced choice between only two response options (the two words presented)
 - the test included basic mental states.

(a) Explain why each of these problems affected the validity of this study.

the task involved a forced choice between only two response options

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the test included basic mental states

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[4]

(b) Explain how solving **one** of these problems improved the validity of the eyes test.

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[2]

- 5 In the study by Milgram (obedience), the sample included a range of occupations.

Name **two** of these occupations.

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[1]

- 6 Describe the use of 'open questions' and 'closed questions' in research, using any examples.

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[6]

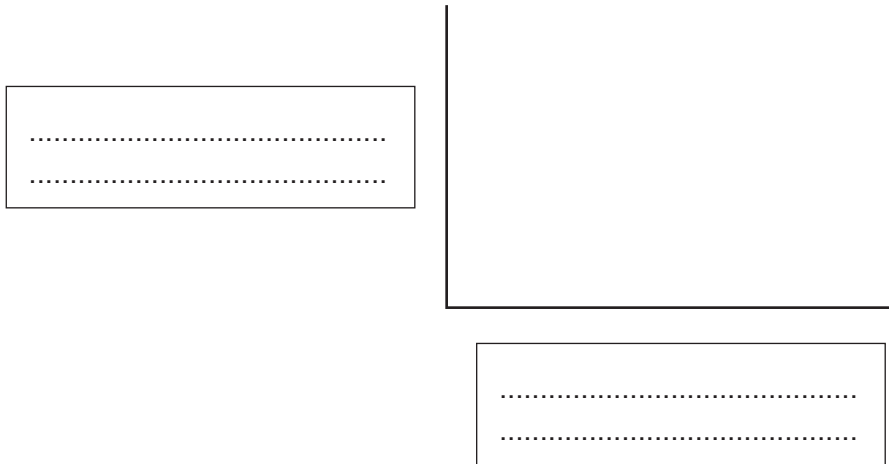
Section B

Answer **all** questions in this section.

- 7 Geoffrey is conducting structured interviews about people's use of social media. He is investigating how much time people spend on social media and how positive they feel about it.

- (a) Geoffrey finds that the time participants spend on social media is normally distributed.

Sketch the shape of this normal distribution using the axes below. You **must** label the axes.



[3]

- (b) Geoffrey finds that some participants give interesting responses, but he does not explore their use of social media further.

- (i) Explain **one** practical reason why using a structured interview means that Geoffrey **cannot** explore these participants' use of social media further.

.....

 [2]

- (ii) Explain **one** ethical reason why Geoffrey may choose **not** to explore these participants' use of social media further.

.....

 [3]

Question 8 appears on the next page.

8 Faolan is investigating teachers' attitudes and behaviours towards students doodling. She has conducted a semi-structured interview and has observed the teachers in the classroom.

- (a) (i) Faolan asks each teacher to rate how annoyed they feel when a student in their class doodles.

Suggest a scale that Faolan could use to measure how annoyed the teachers are.

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

- (ii) Explain **one** problem with the scale that you have suggested in (a)(i), including how this would affect the results.

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

(b) Faolan is interested to know whether teachers show the same behaviours in the classroom when students doodle as they reported during the interview.

(i) Suggest **two** reasons why the teachers' interview responses may differ from their behaviour in the classroom. Your answers should **not** relate to the scale you suggested in (a)(i).

1

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[4]

(ii) If Faolan finds that teachers do not show the same behaviours in the classroom as they report during the interview, this raises an ethical issue.

Suggest why it could be difficult for Faolan to follow the ethical guideline of 'protection from harm' when she explains her results to the participants.

.....

..... [1]

- 9 Tulip is conducting a study on social behaviour in animals. She is investigating whether animals are more sociable when they are in a large laboratory cage or a small laboratory cage.

(a) Tulip has to decide which species to use.

Explain how **one** ethical guideline relating to animals would affect her decision.

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..... [2]

(b) Tulip is finding a median. She puts her scores in order.

State what a researcher should do to find the median if there are two middle numbers.

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..... [1]

(c) Explain how Tulip would find the range of the number of sociable behaviours of the animals in the small cage.

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..... [2]

(d) Explain why it would be appropriate for Tulip to use counterbalancing if she chose a repeated measures experimental design.

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..... [3]

10 Enfy's wants to investigate whether different types of shopper are more relaxed than others. For example, whether shoppers with trolleys/carts are more relaxed than shoppers with baskets.

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[Turn over

Section A

Answer **all** questions in this section.

- 1** In the study by Andrade (doodling), parts of the procedure helped to reduce demand characteristics.

Describe **two** parts of the procedure that helped to reduce demand characteristics in this study.

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[4]

- 2 (a)** State the difference between an 'aim' and a 'hypothesis'.

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..... [1]

- (b)** A non-directional hypothesis for a study states that 'Boys and girls differ in how aggressive they are' but the researcher has decided to use a directional hypothesis instead.

Suggest a directional hypothesis for this study.

.....

..... [1]

- 3** The study by Milgram (obedience) was not an experiment because there was no independent variable. Milgram later compared the results of this study to the findings of the same procedure carried out in an old office block. This comparison was an experiment.

(a) State the independent variable in this experiment.

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..... [1]

(b) State the dependent variable in this experiment.

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..... [1]

- 4 (a)** Explain what is meant by the ethical guideline of 'species and strain' in relation to animals in psychological research.

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..... [2]

(b) Describe how the ethical guideline of 'housing' affects what psychologists should and should not do when studying animals.

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..... [3]

- 5** In the study by Schachter and Singer (two factors in emotion), the placebo condition was a control condition.

(a) Outline what is meant by a 'control condition'.

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..... [1]

(b) Explain the purpose of this control condition in this study.

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..... [2]

- 6** Describe 'random sampling' and 'volunteer sampling', using any examples.

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..... [6]

Question 7 appears on the next page.

Section B

Answer **all** questions in this section.

- 7 Mrs Colling is a headteacher/principal of a school and is planning an experiment to investigate whether rewards or punishments are best for improving students' learning. The independent variable is whether students receive rewards or punishments.

- (a) (i) Suggest **two** ways that Mrs Colling could ask teachers to reward students in their classes.

1

.....

2

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[2]

- (ii) Explain which of the ways you suggested in (a)(i) would be a more valid manipulation of the independent variable in this experiment.

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..... [2]

(b) Mrs Colling is talking to teachers about what punishment to use. Two suggested punishments are:

- missing breaktime every day for a week while standing outside the staffroom
- making the student write a public letter of apology to the school.

Both suggested punishments are rejected by the teachers for ethical and practical reasons.

(i) Suggest **one** ethical problem with **one** of these punishments.

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..... [2]

(ii) Suggest **one** practical problem with **one** of these punishments.

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..... [2]

- 8 Ruby has conducted an experiment about language learning in animals using an animal called Delphine. Delphine has learned to make noises with different meanings. Ruby has tested Delphine's understanding of word types, including:

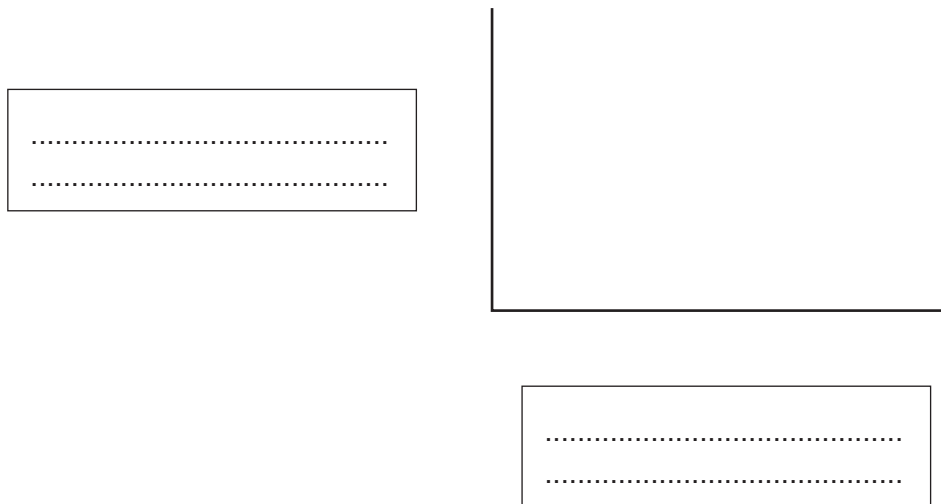
- shapes
- colours
- food types

- (a) Ruby's results for the three word types are given in Table 8.1.

Table 8.1

Word type	shapes	colours	foods
Number of words understood	5	8	15

- (i) Draw a bar chart of these results. You **must** label the axes.



[4]

- (ii) State which measure of central tendency would be **most** appropriate for Ruby to use with this data.

.....
 [1]

- (b) Ruby plans to include two more word categories.

Explain why this would improve Ruby's results.

.....
 [1]

- (c) Ruby is concerned that sometimes she will not hear Delphine's noises so wants to use a second observer to help her.

Outline **two** disadvantages of having a second observer.

1

 2
 [2]

- 9 Dr Felix is conducting a natural experiment to test whether seeing television advertisements for a charity for older people makes participants behave more positively towards them. He measures this by giving a questionnaire about behaviour towards older people to a group of students. He gives the students the questionnaire one week before the advertisements appear on television and again the week after.

- (a) Explain what is meant by a 'natural experiment', using this study as an example.

.....

 [2]

- (b) Suggest **one** problem with natural experiments, using this study as an example.

.....

 [2]

- (c) Dr Felix thinks it could be better to use covert observations rather than questionnaires to measure positive behaviour towards older people. He could have several older people as stooges, pretending to struggle with their shopping, and he could observe how the students behave.

- (i) Suggest **one** advantage of using covert observation rather than questionnaires in this study.

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..... [2]

- (ii) Suggest **one** disadvantage of using covert observation rather than questionnaires in this study.

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..... [2]

Section C

Answer **all** questions in this section.

- 10** Jimmy wants to investigate individual differences in dreams. He is interested in many differences between participants, such as whether each individual:
- has consistent dream content
 - has meaningful dreams
 - dreams in colour.

- (a)** Describe how Jimmy could conduct a study using an interview to investigate at least two individual differences in dreams.

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