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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.

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Answer **all** questions.

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

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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.....

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..... [2]

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

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..... [2]

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

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..... [2]

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

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..... [2]

- 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.

.....

.....

.....

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

- 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.

.....
 [1]

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

.....
 [1]

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

.....
 [1]

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

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

.....

 [2]

- 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.

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

(b) Identify the independent variable in this experiment.

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

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

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2
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..... [4]

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

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

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

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

y-axis label

.....

.....

x-axis label

.....

.....

[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.

.....
 [1]

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

.....

 [3]

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

.....

 [2]

(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.

.....

 [3]

[4]

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PSYCHOLOGY

9990/22

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Section A

Answer **all** questions in this section.

- 1 Dement and Kleitman (sleep and dreams) found a positive correlation between REM duration and the number of words used to describe the dream.

(a) Explain what is meant by a 'positive correlation', using this study as an example.

.....

.....

..... [2]

(b) Suggest why REM duration was a more valid measure of dream duration than the number of words used to describe the dream.

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..... [2]

- 2 The study by Bandura et al. (aggression) used a sample of children.

(a) Identify **two** features of this sample of children.

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2

..... [2]

(b) Suggest **one** reason why generalisations **can** be made from the sample in this study.

.....

..... [1]

(c) Suggest **one** reason why generalisations **cannot** be made from the sample in this study.

.....

..... [1]

- 3 In the study by Yamamoto et al. (chimpanzee helping), the researchers needed a reliable procedure for testing the tool choice made by the chimpanzees.

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

.....

.....

.....

..... [2]

(b) Suggest **one** problem with reliability in this study.

.....

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..... [2]

- 4 In a study about sharing, pairs of friends were given questionnaires. The questionnaire had only two questions: 'rate your own willingness to share' and 'rate your friend's willingness to share'.

(a) (i) State what is meant by the term 'demand characteristics'.

.....

..... [1]

(ii) State why demand characteristics are a problem in research.

.....

..... [1]

(b) Describe **one** way in which demand characteristics could be avoided in this study.

.....

..... [1]

- 5 Sometimes it is more appropriate to use one measure of central tendency than another.

State **one** reason why it may be better to use the mean as a measure of central tendency than the mode.

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..... [1]

- 6 Describe the ethical guidelines of 'right to withdraw' and 'deception' in research with human participants, using any examples.

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Section B

Answer **all** questions in this section.

- 7 Dr Bahl wants to know about the emotions of people who spend their leisure time in different ways. He intends to use a questionnaire to collect information from these different types of people, about their emotions.

(a) Explain **one** way that Dr Bahl could ensure that he obtains a varied sample of participants.

.....

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..... [3]

(b) Suggest **one** open question that Dr Bahl could ask about emotions.

.....

..... [1]

(c) Explain **one** disadvantage of using open questions about emotion in this study.

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..... [2]

(d) Dr Bahl is considering using an fMRI (functional magnetic resonance imaging) scanner to investigate emotions.

(i) Suggest **one** advantage of using an fMRI scanner to investigate emotions.

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..... [2]

(ii) Suggest **one** disadvantage of using an fMRI scanner to investigate emotions.

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..... [2]

- 8 Martha wants to conduct a study using a naturalistic observation of children playing. She is planning to observe the children in her local school.

(a) State what is meant by a 'naturalistic observation'.

.....
 [1]

(b) Suggest **one** disadvantage of using a naturalistic observation in Martha's study.

.....

 [2]

(c) Suggest how Martha could follow the ethical guideline of informed consent in her study.

.....

 [3]

(d) Suggest how Martha could operationalise **one** play behaviour that she could observe.

.....

 [2]

(e) Suggest what Martha would do if she were a covert observer.

.....

 [2]

- 9 Otto's aim is to investigate which age groups of internet users are most likely to play internet-based games.

(a) Suggest an operationalised directional (one-tailed) hypothesis that Otto could test.

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.....

.....

..... [2]

(b) Describe the population that Otto will need to use for his investigation.

.....

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..... [2]

10 Cecile has ten parrots that can answer questions about shapes. She is interested in whether there is a difference between the ability of parrots to learn to answer questions about sounds, such as from bells or buzzers, compared to shapes.

- (a) Describe how Cecile could conduct a laboratory experiment to test whether there is a difference in the ability of parrots to learn to answer questions about sounds compared to shapes.

[illegible]

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..... [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.

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..... [4]

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Additional Materials: Ruler

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Section A

Answer **all** questions in this section.

- 1 (a) State what is meant by 'participant variables'.

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

- (b) Suggest **one** participant variable that could have affected the level of obedience in the study by Milgram.

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

- 2 In the study by Baron-Cohen et al. (eyes test), a correlation was found.

- (a) Describe the correlation found between the Eyes Test score and the Autism Spectrum Quotient (AQ).

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

- (b) Explain why a researcher in a correlational study could **not** conclude that there was a causal relationship between variables.

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

- 3 (a) Explain what is meant by the term 'order effects'.

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..... [2]

- (b) Explain **one** reason why there were no order effects in the study by Canli et al. (brain scans and emotions).

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..... [2]

- 4 (a) State what the standard deviation measures.

.....

..... [1]

- (b) State **one** advantage of using the standard deviation, rather than using the range.

.....

..... [1]

5 In the study by Pepperberg (parrot learning), many variables were controlled.

(a) Explain why it is important to control extraneous variables in experimental studies.

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.....

.....

..... [2]

(b) Identify **one** uncontrolled variable in the study by Pepperberg **and** suggest how this could have affected the results.

uncontrolled variable

.....

effect

..... [2]

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 Carol is interested in theory of mind. She is comparing adults in 'caring' jobs such as nursing with adults in 'non-caring' jobs that have less contact with the public. Carol believes that adults in caring jobs will score higher on the Eyes Test than those in non-caring jobs.

(a) Write a **null** hypothesis for Carol's study.

.....
 [1]

- (b) Carol obtains a sample from 2000 people who found a job through an employment website. Each person has an equal chance of being in her sample.

(i) Name the sampling technique that Carol used.

..... [1]

(ii) Explain why it is an advantage that each person had an equal chance of being in Carol's sample.

.....

 [2]

(c) Explain the experimental design being used in Carol's study.

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 [2]

(d) Carol intends to draw a graph of the median Eyes Test score for each group of participants.

- (i) Explain why the median was the **most** suitable measure of central tendency for Carol to use.

.....

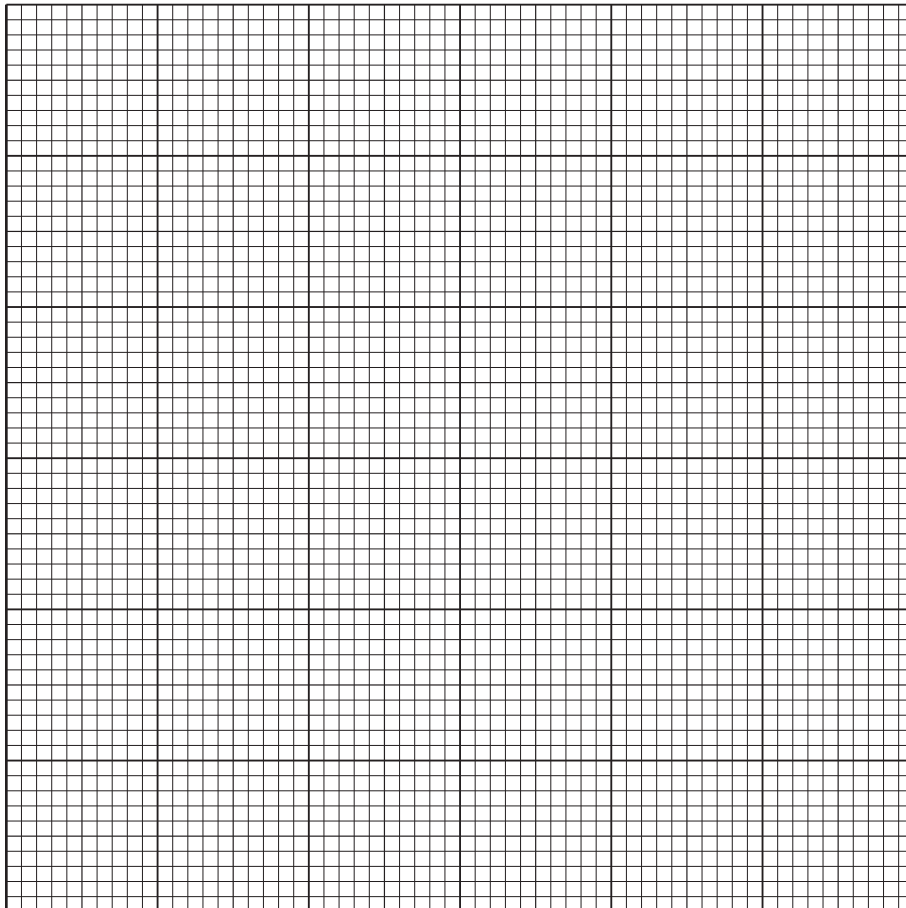
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..... [2]

- (ii) Carol found that the median Eyes Test score for the caring job participants was 30/36 and the median Eyes Test score for the non-caring job participants was 20/36.

Draw an appropriate graph of these results on the axes below. You must label both axes.



[4]

- 8 Misha and Dalman are conducting interviews with elderly people to find out how their dreams have changed with age. Misha thinks it is essential to gain information from each participant using the same questions. Dalman thinks it would be better to be able to vary the questions used with each participant.

- (a) Identify the type of interview that Misha wants to use **and** explain **one** advantage of this type of interview.

type of interview:

advantage:

..... [2]

- (b) Identify the type of interview that Dalman wants to use **and** explain **one** advantage of this type of interview.

type of interview:

advantage:

..... [2]

- 9 Aram plans to use a controlled observation to record the behaviour of children in the play area of a classroom.

(a) Explain what is meant by a 'controlled observation', using Aram's study as an example.

.....

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..... [2]

(b) Suggest how Aram could operationalise **one** behaviour that he could observe in the play area.

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..... [2]

(c) Suggest **two** controls that Aram could use to keep the play area the same for all his observations.

1

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..... [2]

(d) Suggest **one** reason why it would be better for Aram to be an overt, participant observer, rather than a covert, non-participant observer.

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..... [2]

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..... [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.

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..... [4]

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