OCR
Oxford Cambridge and RSA

Monday 20 May 2019 – Afternoon

A Level Psychology

H567/01 Research methods

Time allowed: 2 hours

You must have:
• a scientific or graphical calculator

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number						Candidate number				

First name(s) _____

Last name _____

INSTRUCTIONS
• Use black ink. HB pencil may be used for graphs and diagrams only.
• Answer **all** the questions.
• Write your answer to each question in the space provided. If additional space is required, use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.

INFORMATION
• The total mark for this paper is **90**.
• The marks for each question are shown in brackets **[ ]**.
• Quality of extended responses will be assessed in questions marked with an asterisk (*).
• This document consists of **20** pages.

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SECTION A: Multiple choice

Answer **all** the questions.

1   What type of distribution refers to a situation in which the majority of participants score highly on the measure on which they are assessed?

   A   bimodal

   B   negatively skewed

   C   normal

   D   positively skewed

   Your answer [   ] **[1]**

2   Which of these best describes what a 'Type 2' error refers to?

   A   incorrectly accepting the null hypothesis

   B   incorrectly rejecting the null hypothesis

   C   use of the incorrect inferential statistical test

   D   use of the incorrect tables of critical values

   Your answer [   ] **[1]**

3   When would it be best to use the median rather than the mean?

   A   when there are a few scores much lower than the rest

   B   when there are a few scores very similar to each other

   C   when there is a large number of scores overall

   D   when there is a small number of scores overall

   Your answer [   ] **[1]**

3

4   Which of these inferential statistical tests is the only one that does not involve ranking of the data at some stage?

   A   Chi-square

   B   Mann Whitney U test

   C   Spearman's Rho

   D   Wilcoxon Signed Ranks test

   Your answer [   ]   **[1]**

5   A study investigating the difference in aggression between boys and girls recorded the number of times a child shouted at someone during playtime. Which of the following would be the appropriate inferential test to use to analyse the data from this study?

   A   Binomial sign test

   B   Chi-square

   C   Mann Whitney U test

   D   Wilcoxon Signed Ranks test

   Your answer [   ]   **[1]**

6   Which symbol in statistics means 'approximately'?

   A α

   B $<$

   C $\sim$

   D Σ

   Your answer [   ]   **[1]**

7   What type of validity refers to the extent to which the scores on one measure are able to predict the outcome on another related measure?

   A   criterion

   B   ecological

   C   face

   D   population

   Your answer [   ]   **[1]**

Turn over

8 Which of these is the name of an interviewing technique where the researcher has no pre-planned questions?

   A   free form

   B   open

   C   unplanned

   D   unstructured

Your answer [ ]   **[1]**

9 For which of the following would it be appropriate to use a line graph to display the data?

   A   differences in the ability of males and females to identify six emotions displayed on the face

   B   number of acts of aggression displayed by boys and girls

   C   preference for four different learning styles displayed as percentages

   D   self-ratings of aggression (1 to 10) at different times of day (10am to 10pm)

Your answer [ ]   **[1]**

10 In the study by Simons and Chabris investigating inattentional blindness, how was the dependent variable operationalised?

   A   detection of 'gorilla'

   B   duration of video clip played

   C   estimation of number of players present

   D   number of passes of basketball counted

Your answer [ ]   **[1]**

11 In the study by Baron-Cohen *et al.*, what sampling technique was used to obtain the high functioning adults with autism (HFA)?

   A   opportunity

   B   self-selected

   C   snowball

   D   random

Your answer [ ]   **[1]**

12 What fraction is represented by the decimal 0.05?

A $\frac{1}{2}$

B $\frac{1}{5}$

C $\frac{1}{20}$

D $\frac{1}{50}$

Your answer ☐ **[1]**

13 Which of the calculated values from a Spearman's Rho test best reflect the correlation displayed in the scatter diagram below?
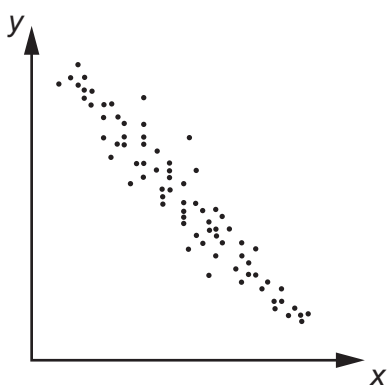
A $r_s = +0.2$

B $r_s = +0.8$

C $r_s = -0.2$

D $r_s = -0.8$

Your answer ☐ **[1]**

14 Which of these is the name of a section of the write-up of a practical report that provides a summary of the research conducted?

A abject

B ablate

C absinth

D abstract

Your answer ☐ **[1]**

Turn over

6

15 What name is given to the type of data collected directly by the researchers?

    A   preliminary

    B   precursor

    C   principal

    D   primary

Your answer   ☐ **[1]**

16 What type of data is displayed in a histogram?

    A   anomalous

    B   continuous

    C   nominal

    D   ranked

Your answer   ☐ **[1]**

17 Which is true of a field experiment?

    A   has an independent variable

    B   has an independent variable that cannot be manipulated

    C   has an independent variable that is always naturally occurring

    D   has no independent variable

Your answer   ☐ **[1]**

18 Which is true of a naturalistic observation?

    A   always conducted in an outdoor location

    B   conducted in a place where the behaviour studied usually occurs

    C   has a naturally occurring independent variable

    D   has data collected by someone who is part of the research team

Your answer   ☐ **[1]**

19 What is a coding frame?

    A   a technique that enables qualitative data to be recorded as quantitative

    B   a technique that enables quantitative data to be recorded as qualitative

    C   a technique that enables ordinal data to be recorded as nominal

    D   a technique that enables interval data to be recorded as nominal

Your answer [ ] **[1]**

20 What does the term 'representativeness' refer to?

    A   the extent to which the findings can be applied to everyday life

    B   the extent to which the findings can be applied to other related research

    C   the extent to which the findings can be applied to the population

    D   the extent to which the findings can be applied to the sample

Your answer [ ] **[1]**

8

SECTION B: Research design and response

Answer **all** the questions.

Weigh more outgoing?

Some research suggests that personality is linked to a person's body type (their structure and weight), with larger people having a more extrovert (lively and outgoing) personality than those who are smaller. To investigate this further, a psychologist wants to use the correlation technique to examine the relationship between weight and extroversion.

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21 Write an alternative one-tailed hypothesis for this study.

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.... **[3]**

22* Explain how you would conduct a study using the correlation technique to investigate if there is a relationship between a person's weight and their level of extroversion. Justify your decisions as part of your explanation. You must refer to:

- the sampling technique to obtain participants for the study
- how you would operationalise the variable 'extroversion'
- details of how one ethical consideration would be addressed
- the control of one extraneous variable.

You should use your own experience of practical activities to inform your response. **[15]**

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23 (a) Outline how you could obtain secondary data to use as the measurement of the variable 'weight'.

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(b) Outline **one** strength of the use of secondary data in this study.

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24 Outline **one** weakness of having quantitative data in this study.

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25 **(a)** Suggest **one** open question that could provide additional information in the form of qualitative data for use in this study.

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(b) Outline **one** strength of having some qualitative data in this study.

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26 Explain **one** way that the design of this study could increase the generalisability of the findings from this study.

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Turn over

12

SECTION C: Data analysis and interpretation

Answer **all** the questions.

Steps to increase bin use

Research suggests that, when trying to encourage people to change their behaviour in some way, 'telling people what to do' is not always effective and a more subtle approach may be better ('nudge theory'). To investigate this, a psychologist conducted an observation study monitoring people's use of two different types of litter bin situated close to each other in the pedestrian area of one large town centre – one that had steps printed on the pavement leading up to it and another without the steps. Recordings were made each time any item was deposited in the bin throughout a continuous period from 10am to 2pm. The data on how many people used the bins is presented in the table below.

Table showing the number of times each bin was used by males and females		
	Males	**Females**
Bin with steps	9	14
Bin without steps	5	12

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27 Draw a fully labelled bar chart showing the overall use of the two different types of bin.
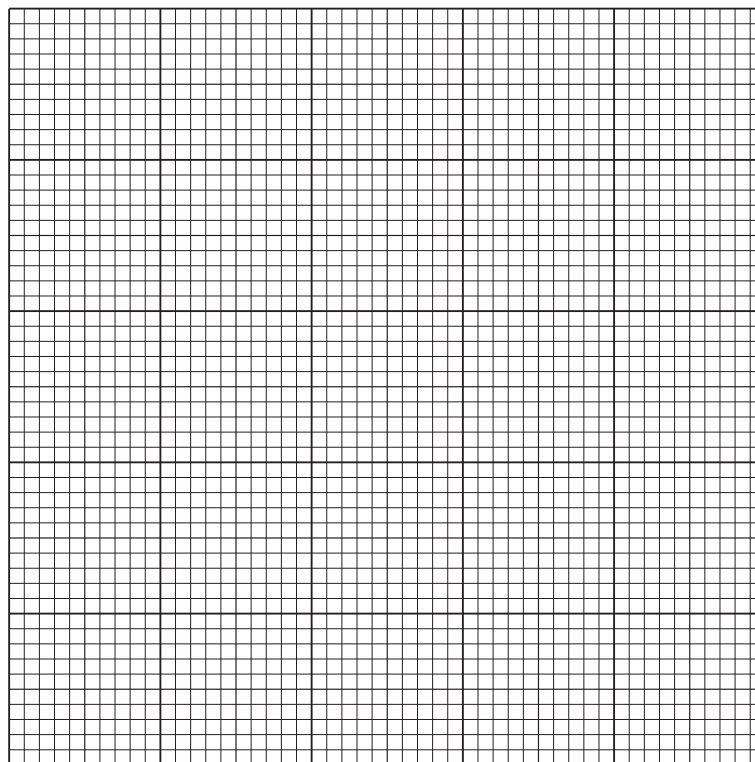
[4]

28 Calculate the percentage of people who used the bin with steps leading up to it. Show your workings and present your finding to **two** significant figures.

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29 Outline **two** conclusions that can be obtained from the data collected in this study.

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Turn over

30 (a) The psychologist used the Chi-square test to analyse the data from this study. Give **one** reason why this would be the appropriate non-parametric inferential test to use.

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(b) Calculate the degrees of freedom for use with the Chi-square test in this study. Show your workings.

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(c) Using the extract from the table of critical values presented below, what is the critical value for use with the Chi-square test in this study at the 5% level of probability?

	Probability level					
df	0.5	0.10	0.05	0.02	0.01	0.001
1	0.455	2.706	3.841	5.412	6.635	10.827
2	1.386	4.605	5.991	7.824	9.210	13.815
3	2.366	6.251	7.815	9.837	11.345	16.268
4	3.357	7.779	9.488	11.668	13.277	18.465
5	4.351	9.236	11.070	13.388	15.086	20.517

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(d) The psychologist obtained a calculated value of 0.4058 after analysing the data with the Chi-square test. Write a significance statement presenting this finding showing if the results are significant at the 5% level of probability or not.

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(e) What does the analysis from the Chi-square test inform us regarding the use of the two different types of bin from this study?

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31 (a) Outline **one** strength of the use of the nominal data collected in this study.

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(b) Outline **one** weakness of the use of the nominal data collected in this study.

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Turn over

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32   Explain what it would mean if there was a 'Type 1 error' in this study.

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33   Outline **one** weakness of the use of event sampling to record the data in this study.

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END OF QUESTION PAPER

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ADDITIONAL ANSWER SPACE

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).