



Oxford Cambridge and RSA

Friday 19 May 2023 – Morning

A Level Psychology

H567/01 Research methods

Time allowed: 2 hours



You must have:

- a ruler (cm/mm)
- a scientific or graphical calculator



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

Centre number

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Candidate number

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First name(s)

Last name

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.
- Answer **all** the questions.

INFORMATION

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

ADVICE

- Read each question carefully before you start your answer.

2

Section A

Multiple Choice

You should put the letter of the correct answer in the box provided.

- 1 Which of these is an ethical consideration acknowledged by the BPS (British Psychological Society)?

- A compassion
- B competence
- C complacence
- D compliance

Your answer

[1]

- 2 A group of 220 people answer a question about whether they prefer the colour blue or the colour red. 160 people state that they prefer the colour blue and 60 people state that they prefer the colour red. Which of the following shows these findings expressed as a ratio in its simplest form?

- A 8:3
- B 9:5
- C 16:5
- D 40:15

Your answer

[1]

- 3 Which of these descriptive statistics involves a comparison to 100 as a reference?

- A mean
- B median
- C mode
- D percentage

Your answer

[1]

3

4 Which inferential statistical test at some stage involves a calculation based on the number of rows of data and the number of columns of data?

- A Chi-square
- B Mann-Whitney U test
- C Spearman's Rho
- D Wilcoxon Signed Ranks test

Your answer

[1]

5 Which of these would be the appropriate inferential test to use to analyse the data in a study investigating the difference in reaction times to two types of stimuli (a light versus a bell) that obtains data from the same people in each condition?

- A Chi Square
- B Mann-Whitney U test
- C Spearman's Rho
- D Wilcoxon Signed Ranks test

Your answer

[1]

6 In research, which of the following best describes what 'primary data' is?

- A data that has **not** been collected by the researcher(s)
- B data that is obtained directly from the sample by the researcher(s)
- C data that is obtained first in the research
- D data that is the most important to use

Your answer

[1]

7 If the null hypothesis is incorrectly rejected, what type of error is said to have been made?

- A a type 1 error
- B a type 2 error
- C both a type 1 and a type 2 error
- D neither a type 1 nor a type 2 error

Your answer

[1]

4

8 What type of observation is done in a way that the participants will be unaware that they are being watched?

- A controlled
- B covert
- C overt
- D unstructured

Your answer

[1]

9 Which of these best describes what the variance informs us of?

- A dispersion around the mean
- B dispersion around the median
- C dispersion around the mode
- D dispersion around the range

Your answer

[1]

10 In Milgram's (1963) study of obedience, 14 of the 40 participants were disobedient. What is this expressed as a percentage?

- A 5.6%
- B 14%
- C 35%
- D 65%

Your answer

[1]

11 Which of the following was used in Experiment 2 of Loftus and Palmer's (1974) study into eyewitness memory?

- A both independent and repeated measures design
- B independent measures design
- C matched participants design
- D repeated measures design

Your answer

[1]

12 What is 5% expressed as a fraction?

- A $\frac{1}{2}$
- B $\frac{1}{20}$
- C $\frac{1}{5}$
- D $\frac{1}{50}$

Your answer

[1]

13 If this data (48, 24, 39, 50, 32, 39) was ranked, what rank would be assigned to 39?

- A 2.5
- B 3.5
- C 4
- D 4.5

Your answer

[1]

14 In which of these distribution curves is the mean, median and mode all the same value?

- A bimodal
- B negatively skewed
- C normal
- D positively skewed

Your answer

[1]

15 For which of these inferential statistical tests can the sample size in each condition be different?

- A Binomial Sign test
- B Mann-Whitney U test
- C Wilcoxon Signed Ranks test
- D none of them (sample sizes always have to be equal in each condition)

Your answer

[1]

6

16 What is 25.8961 written to **two** decimal places?

- A 25
- B 25.88
- C 25.89
- D 25.90

Your answer

[1]

17 Which of these is **not** a laboratory experimental design?

- A alternative measures
- B independent measures
- C matched participants
- D repeated measures

Your answer

[1]

18 Which of these is **not** a sampling technique that can be used to obtain participants for research?

- A creative
- B opportunity
- C random
- D self-selected

Your answer

[1]

19 Which type of validity refers to the agreement between two measures or assessments taken at the same time?

- A concurrent
- B construct
- C criterion
- D face

Your answer

[1]

7

20 Which measure of central tendency looks for the most frequently occurring response in the data?

- A mean
- B median
- C mode
- D none of them

Your answer

[1]

Turn over for the next question

8

Section B

Research design and response

A clean smell?

The aroma of freshly baked bread, the smell of newly ground coffee and the scent of a nice fragrance. We associate different smells with different people and situations, and our sense of smell can even influence how we behave. Sometimes this can be immediate and direct, such as making us feel hungry, but it can also be more indirect. For example, the smell of lemons is often associated with cleanliness. To study this further, psychologists want to use the experimental method to investigate if people leave less litter in a room filled with the smell of lemons compared to one that smells of nothing.

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

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22* Explain how you would conduct a study using the laboratory experimental method to investigate if there is a difference in the amount of litter left in a room filled with the smell of lemons compared to a room that has no smell. Justify your decisions as part of your explanation. You must refer to:

- the sampling technique used to obtain participants for the study
- how you would operationalise the dependent variable to obtain quantitative data
- 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 An independent measures design could have been used in this study.

(a) Outline **one** strength of using an independent measures design in this study.

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(b) Outline **one** weakness of using an independent measures design in this study.

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24 (a) Suggest **one** open question you could use to obtain some additional information in this study.

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Section C

Data analysis and interpretation

A friendly name?

Research suggests many things can influence how friendly a person is thought to be. Personality is an obvious one and sense of humour is another. However, there are also less obvious things, such as just knowing a person's name. A psychologist investigated this using an independent measures design experiment. They compared the ratings of friendliness given to shop assistants who wore a name badge to those who did not. Some of the data collected is presented in the table below.

Ratings of friendliness (0 to 20) given to shop assistants who were wearing a name badge compared to shop assistants who were not (0 = 'not friendly at all' to 20 = 'extremely friendly')			
Wearing name badge		Not wearing name badge	
Rating	Rank	Rating	Rank
18	17	13	11
14	12	2	1
10	8	6	5
17	15	4	3
16	14	8	7
18	17	18	17
5	4	7	6
11	9	15	13
20	20	12	10
19	19	3	2

26 (a) Explain what ranking the data means.

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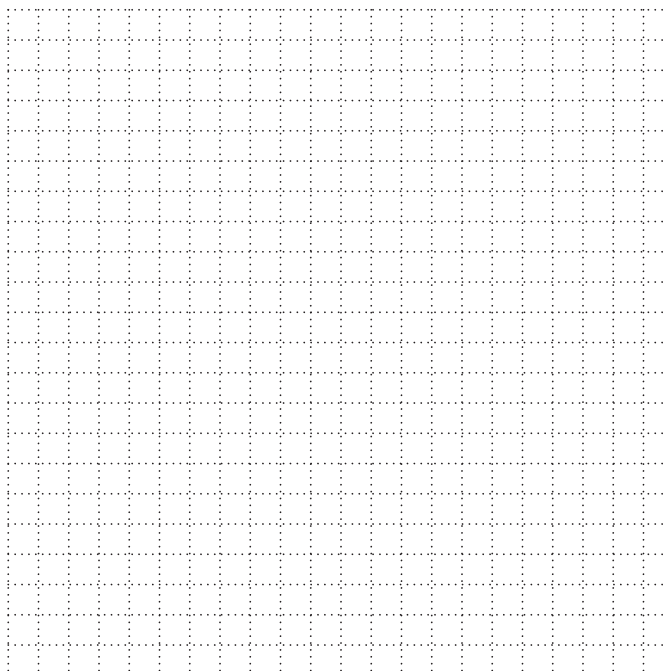
(b) Explain why there are three ranks of 17.

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27 Calculate the mean rating of friendliness in each condition. Show your workings.

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28 (a) Draw a fully labelled bar chart showing the mean rating of friendliness in each condition in this study.



[4]

(b) Outline **one** conclusion that can be reached from the information in this bar chart.

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29 Explain why it may have been better to use the median to calculate the measure of central tendency in this study rather than the mean.

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16

(b) The table below shows critical values at the 5% level of probability for the Mann-Whitney U test. Using the table, state the critical value **and** explain how you found this.

N_a	N_b															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6		5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7			8	10	12	14	16	18	20	22	24	26	28	30	32	34
8				13	15	17	19	22	24	26	29	31	34	36	38	41
9					17	20	23	26	28	31	34	37	39	42	45	48
10						23	26	29	33	36	39	42	45	48	52	55
11							30	33	37	40	44	47	51	55	58	62
12								37	41	45	49	53	57	61	65	69
13									45	50	54	59	63	67	72	76
14										55	59	64	67	74	78	83
15											64	70	75	80	85	90
16												75	81	86	92	98
17													87	93	99	105
18														99	106	112
19															113	119
20																127

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 [2]

(c) Write the significance statement for the analysis performed on this data.

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 [2]

31 No qualitative data was collected in this study. Explain why this is a weakness of this study.

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32 Identify **and** explain **two** factors that could have affected the reliability of the data collected in this study.

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END OF QUESTION PAPER

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).

A large area of lined paper for writing answers. It features a vertical margin line on the left side and horizontal dotted lines for writing. The lines are evenly spaced and extend across the width of the page.

A large grid of dotted lines for writing, with a solid vertical line on the left side. The grid consists of 20 horizontal rows and a single vertical column on the left. The dotted lines are spaced evenly across the page, providing a guide for handwriting practice.

Area with horizontal dotted lines for writing.

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