

# Sample Question Paper

## AS Psychology

**H169/01** Research methods

**Time allowed: 1 hour 30 minutes**



**You must have:**

- 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)

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Last name

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### 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 **56**.
- The marks for each question are shown in brackets [ ].
- This document has **16** pages.

### ADVICE

- Read each question carefully before you start your answer.

## Section A

## Multiple Choice

For each question write the letter in the box.

1 Which of these describes a null hypothesis?

- A A significance statement.
- B A statement of a relationship that includes the direction of the relationship.
- C A statement of difference that includes the direction of the difference.
- D A statement of no difference or relationship.

Your answer

[1]

2 In a research study, a calculated value of a Chi-Square test was 16. The relevant critical value for the study was 7. Which action would the researcher take?

- A Accept both the alternative and null hypotheses
- B Reject both the alternative and null hypotheses
- C Reject the alternative hypothesis
- D Reject the null hypothesis

Your answer

[1]

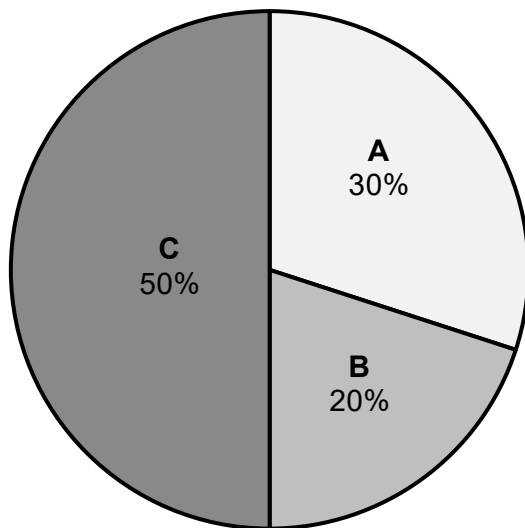
3 Which of the following is a strength of using a questionnaire containing only closed questions to carry out psychological research?

- A Data is always reliable
- B High response rates are guaranteed
- C Respondents are unable to lie in their answers
- D Responses can be compared to identify patterns in data

Your answer

[1]

Use this pie chart to answer question 4.



- 4 The pie chart shows the proportions of people in 3 categories in a research study. Which statement is **true** regarding the amount of people in each category?

- A Category A < Category B
- B Category A > Category C
- C Category B > Category A
- D Category B < Category C

Your answer

☐

[1]

- 5 Which of these is always included in an academic reference?

- A Date of publication
- B Location of research
- C Method used in the research
- D Participants used in the research

Your answer

☐

[1]

The table below shows the results from research using four different tests. The same participants completed all tests twice (at Time 1 and Time 2) with the same time interval between both tests. All tests were scored out of 100.

Test	Mean score from Time 1	Mean score from Time 2
Test 1	99.7	90.2
Test 2	27.5	24.6
Test 3	25.3	30.3
Test 4	27.9	89.2

Use this scenario to answer question 6.

6 Which test has the highest level of external (test-retest) reliability?

- A Test 1
- B Test 2
- C Test 3
- D Test 4

Your answer

☐

[1]

7 Which of these describes event sampling in observational research?

- A Recording behaviour at an event where there will be lots of people present
- B Recording behaviour every five minutes at an event
- C Recording behaviour every time it is displayed throughout the duration of the observation
- D Recording behaviour in pre-determined time intervals

Your answer

☐

[1]

8 Which of these is a type of observation in psychological research?

- A Participant
- B Population
- C Practical
- D Principal

Your answer

☐

[1]

9 Which of these methods would produce the **greatest** chance of demand characteristics affecting the results of an observation study of train passengers?

- A The observer announcing on the train's speaker system that they are conducting an observation
- B The observer pretending to be another passenger on the train
- C The observer watching and recording behaviour 'live' through the train's CCTV cameras
- D The observer watching recordings from the train's CCTV cameras

Your answer

☐

[1]

10 Which of these describes a Likert rating scale question?

- A Participants can respond qualitatively in their own words
- B Participants rate how much they agree with a given statement
- C Participants choose a word from a choice of two opposite words
- D Participants respond with only 'yes' or 'no'

Your answer

☐

[1]

## Section B

## Research design and response

A psychologist was interested in the relationship between individuals' language ability and their physical coordination. She used a correlational analysis to investigate this in a self-selected sample of 34 adult participants. The sample were told the aim of the study.

Each participant first completed a language ability test. This test involved having to spell a list of 20 words. The participants' physical coordination was then calculated by rating them on six 1-10 rating scales across six different tasks including balancing on a beam, catching a ball and copying a dance routine. Each scale was the same where 1 = poor physical coordination to 10 = good physical coordination.

11

(a) Outline what quantitative data means.

.....

.....[1]

(b) Identify **one** example of quantitative data collected in this investigation.

.....

.....[1]

(c) Describe **one** weakness of quantitative data.

.....

.....[1]

12 Explain **one** strength of using a self-selected sample in this investigation.

[3]

**13** Suggest how confidentiality could have been dealt with in this investigation.

[2]

- 14** Discuss ways the researcher could improve the **validity** of this correlation investigation if they were to carry it out again.

In your answer you should consider the implications of your suggested improvements.

**DRAFT**

[6]



- 15** Design an experimental study to investigate if there is a difference in the language ability of people when they are carrying out a physical task and when they are not.

You **must** refer to the following required features in your answer:

- the experimental design you would use
- how you would operationalise the dependent variable to obtain quantitative data
- how you would attempt to reduce the influence of one extraneous variable.

Justify the decisions you have made for each required feature.

**[12]**

DRAFT

DRAFT

## Section C

## Data analysis and interpretation

A researcher conducted an observation to investigate how people react when walking towards each other along a corridor in a building where lots of different office staff work. To do this, she asked the building manager for permission to set up hidden cameras for a day to record people's encounters along one of the main corridors connecting one part of the building to another. The results from the investigation are shown in the table below.

Different behaviours observed as two people approach each other in a corridor					
Avoids eye contact	Smiles	Says hello	Makes eye contact	Nods	Total
80	48	40	24	8	200

- 16 State **one** reason why this investigation is an example of a **structured** observation. Use an example from the scenario to support your answer.

.....

.....

.....

.....

.....

.....[2]

- 17 State **one** reason why this investigation is an example of a **covert** observation. Use an example from the scenario to support your answer.

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.....

.....

.....[2]

- 18 Identify the level of data that was obtained in this investigation.

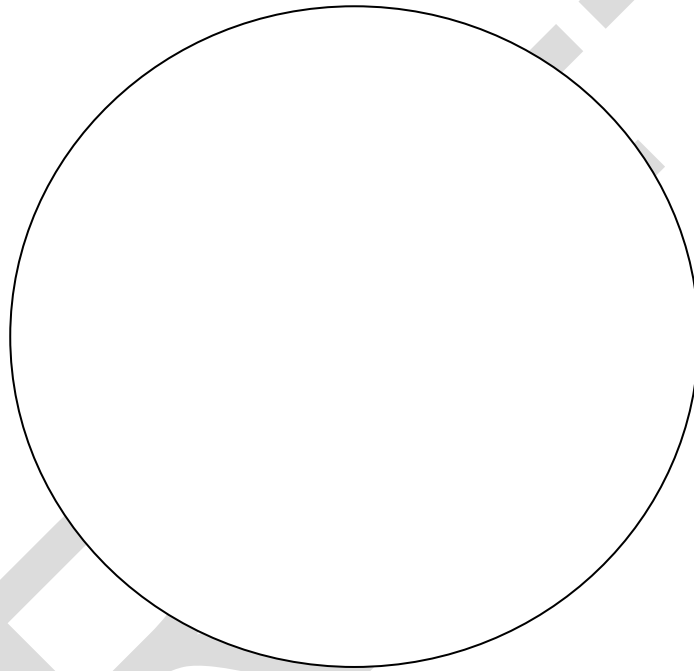
.....[1]

- 19** Calculate the ratio of the number of times people avoided eye contact to the number of times people smiled.

Express your answer in its simplest form.

= ..... **[1]**

- 20** Sketch a fully labelled pie chart showing the data collected in this investigation.



**[3]**

- 21** Analyse the data to reach a conclusion that could be made in this investigation.

.....

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.....

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.....

.....

.....

.....

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

22

- (a) In a follow-up investigation conducted a month later, the researcher recorded a total of 310 behaviours using the same categories as before. 125 of the recorded behaviours were categorised as 'avoids eye contact'.

Calculate the percentage number of times the behaviour recorded in this follow-up investigation was categorised as 'avoids eye contact.'

Show your working.

Write your answer to **2** significant figures.

= ..... % [2]

- (b) Tick (✓) the box below that represents the type of data collected in this study. [1]

Primary, quantitative data	Primary, qualitative data	Secondary, quantitative data	Secondary, qualitative data
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**23** The researcher decided to investigate if there was a relationship between how friendly a person thought they themselves were and how friendly other people at work thought they were. The researcher asked 15 participants to rate themselves on a 1-10 scale where 1 = not at all friendly and 10 = very friendly. The researcher then asked a work colleague to rate each of the participants on the same 1-10 scale.

- (a) State **one** reason why the Spearman's Rho is the most appropriate non-parametric inferential statistical test to analyse the data in this investigation.

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

- (b) The table is an extract from a critical values table for the Spearman's Rho test.

n	0.05	0.01
10	0.564	0.745
11	0.536	0.709
12	0.503	0.678
13	0.484	0.648
14	0.464	0.626
15	0.446	0.604

Identify the critical value at the 0.05 significance level for this investigation.

..... [1]

- (c) Discuss **one** way the researcher could improve the way 'friendliness' was measured if they were to carry out the investigation out again.

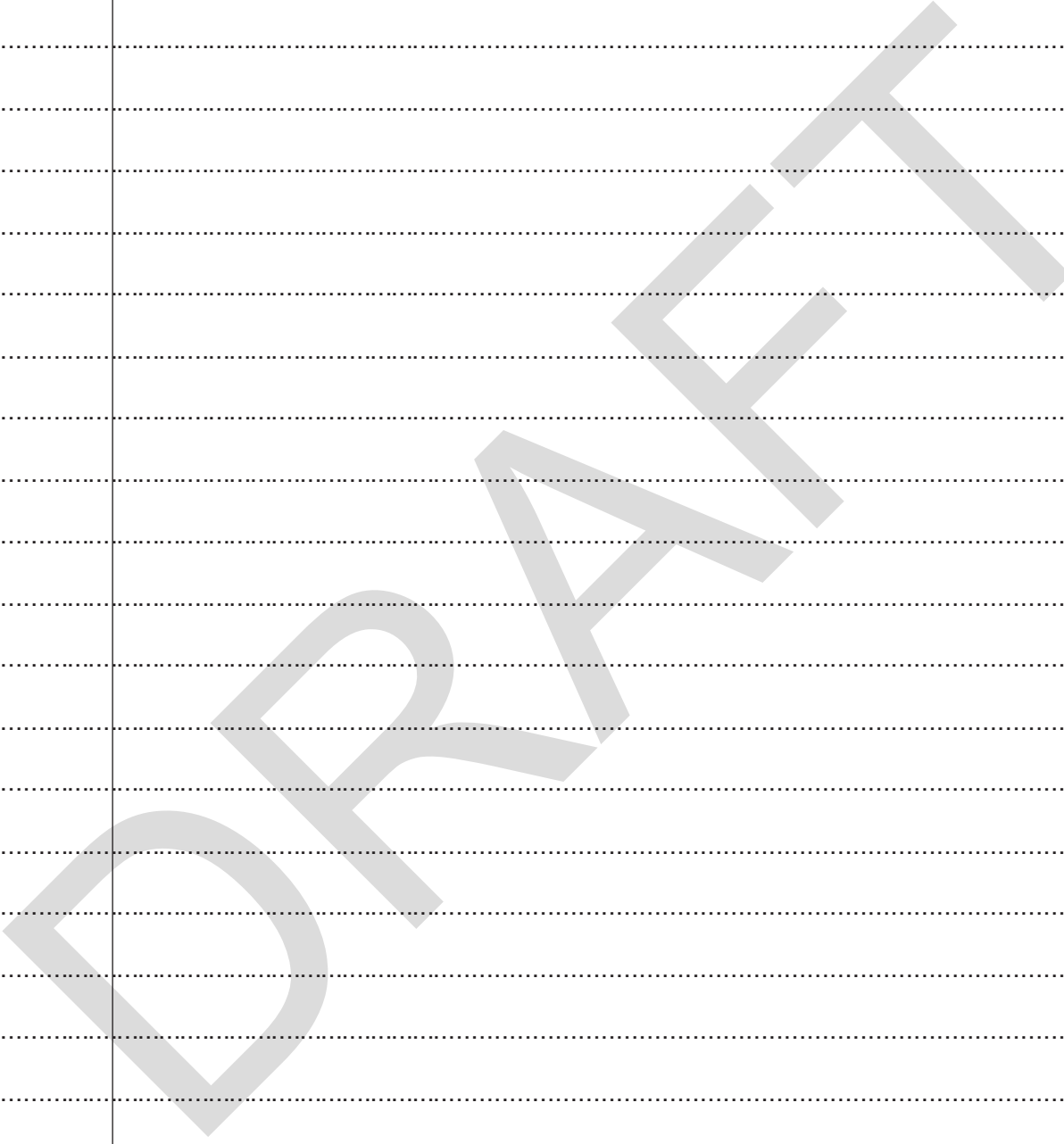
In your answer you should consider the implications of your suggested improvement.

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

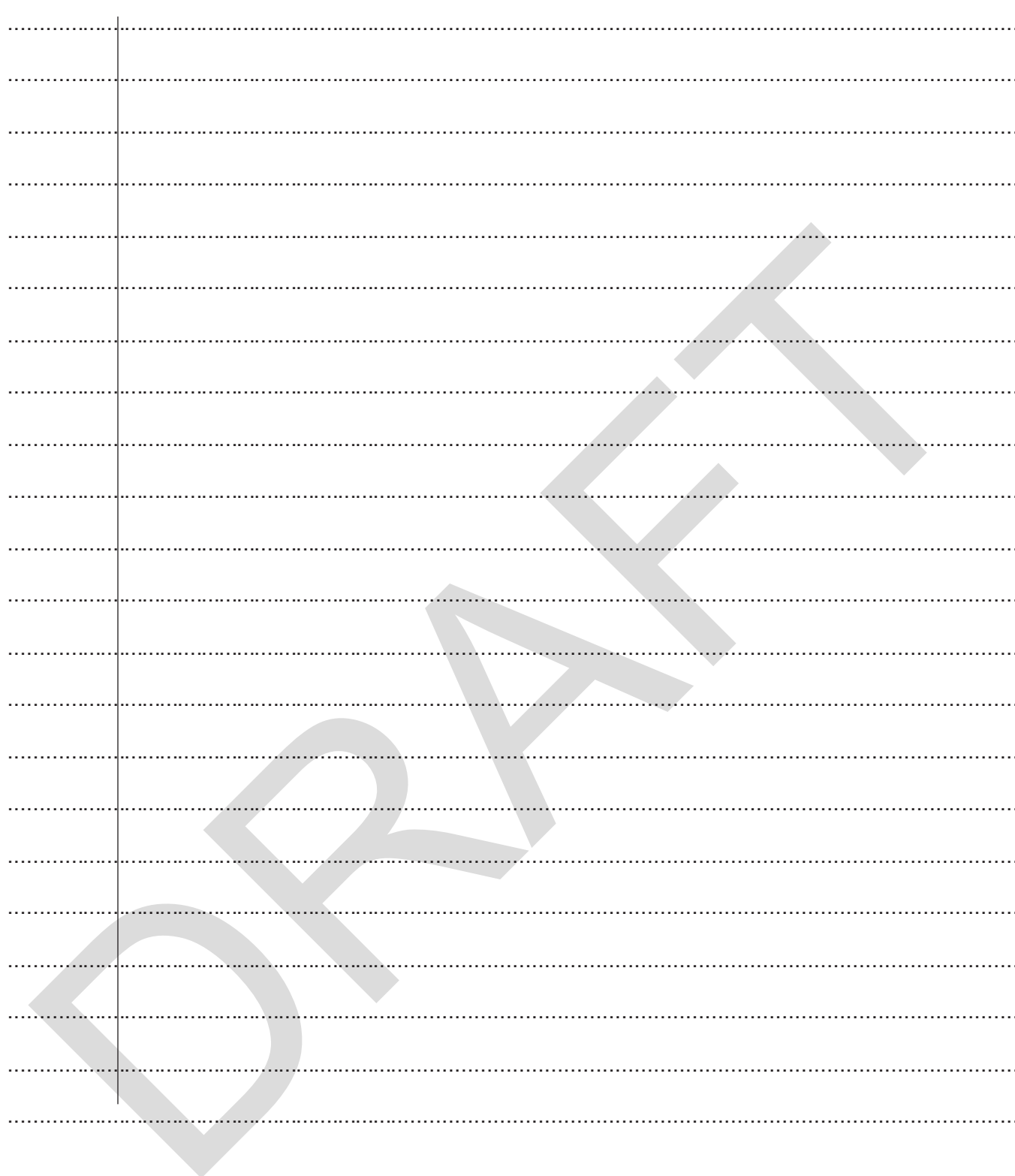
**END OF QUESTION PAPER**

**EXTRA ANSWER SPACE**

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



The page contains a series of horizontal dotted lines for writing. A vertical solid line is positioned on the left side, creating a margin. The page is intended for providing extra answer space for a question.



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**Sample Mark Scheme**

**AS Psychology**

**H169/01 Research methods**

**MARK SCHEME**

Duration: 1 hour 30 minutes

MAXIMUM MARK 56

Version: **Sample**

**This document has 19 pages**

**MARKING INSTRUCTIONS****PREPARATION FOR MARKING****MARKING**

1. Mark strictly to the mark scheme.
2. Marks awarded must relate directly to the marking criteria.

3. **Crossed Out Responses**

Where a candidate has crossed out a response and provided a clear alternative then the crossed-out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed-out response where legible.

**Rubric Error Responses – Optional Questions**

Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Select the highest mark from those awarded. *(The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)*

**Multiple Choice Question Responses**

When a multiple choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).

**Contradictory Responses**

When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only **one mark per response**)

Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

Short Answer Questions (requiring a more developed response, worth **two or more marks**)

If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

Longer Answer Questions (requiring a developed response)

Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

4. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there, then add a tick to confirm that the work has been seen.
5. Award No Response (NR) if:
  - there is nothing written in the answer space

Award Zero '0' if:

  - anything is written in the answer space and is not worthy of credit (this includes text and symbols).
6. For answers marked by levels of response:
  - a. **To determine the level** – start at the highest level and work down until you reach the level that matches the answer
  - b. **To determine the mark within the level**, consider the following

Descriptor	Award mark
On the borderline of this level and the one below	At bottom of level
Just enough achievement on balance for this level	Above bottom and either below middle or at middle of level (depending on number of marks available)
Meets the criteria but with some slight inconsistency	Above middle and either below top of level or at middle of level (depending on number of marks available)
Consistently meets the criteria for this level	At top of level

## 7. Subject Specific Marking Instructions

**Section A: Multiple choice**

Question	Answer	AO	Guidance
1	D	AO1	A statement of no difference or relationship.
2	D	AO2	Reject the null hypothesis
3	D	AO1	Responses can be compared to identify patterns in data
4	D	AO2	Category B < Category C
5	A	AO1	Date of publication
6	B	AO2	Test 2
7	C	AO1	Recording behaviour every time it is displayed throughout the duration of the observation
8	A	AO1	Participant
9	A	AO2	The observer announcing on the train's speaker system that they are conducting an observation
10	B	AO1	Participants rate how much they agree with a given statement

## Section B: Research design and response

Q11 (a) Outline what quantitative data means. [1]		
Marking Criteria	AO/ Marks	Indicative Content
<b>1 mark:</b> A clear and accurate outline of quantitative data (which may be brief).	<b>AO1 x1</b>	<u>Possible answers:</u> <ul style="list-style-type: none"> <li>Numerical data. [1]</li> <li>OR Data that can be statistically analysed. [1]</li> <li>Any other appropriate point.</li> </ul>
<b>0 marks:</b> No creditworthy response.		

Q11 (b) Identify <b>one</b> example of quantitative data collected in this investigation. [1]		
Marking Criteria	AO/ Marks	Indicative Content
<b>1 mark:</b> One example of quantitative data collected in this investigation is clearly identified.	<b>AO2 x1</b>	<u>Possible answers:</u> <ul style="list-style-type: none"> <li>Spelling test scores (out of 20). [1]</li> <li>OR Physical coordination ratings/scores. [1]</li> </ul> <p><b>NB.</b> There must be some reference to 'scores' or 'ratings' or some numerical value. Just stating 'spelling test' is not an example of quantitative data, rather it is the tool used to gather the data.</p>
<b>0 marks:</b> No creditworthy response.		

Q11 (c) Describe <b>one</b> weakness of quantitative data. [1]		
Marking Criteria	AO/ Marks	Indicative Content
<b>1 mark:</b> One weakness of quantitative data is stated.	<b>AO1 x1</b>	<u>Possible weaknesses:</u> <ul style="list-style-type: none"> <li>▪ We cannot understand reasons for behaviour / the data. [1]</li> <li>▪ Do not know the meaning behind scores / why people achieved the score they did. [1]</li> <li>▪ Any other appropriate point.</li> </ul>
<b>0 marks:</b> No creditworthy response.		

<b>Q12</b> Explain <b>one</b> strength of using a self-selected sample in this investigation. [3]		
<b>Marking Criteria [1+1+1]</b>	<b>AO/ Marks</b>	<b>Indicative Content</b>
<b>1 mark:</b> Relevant strength of the use of a self-selected sample identified. (AO1)	<b>AO1 x2</b>  <b>AO2 x1</b>	<u>Possible strengths:</u> <ul style="list-style-type: none"> <li>Less chance of attrition [1] as participants have volunteered to take part (resulting in a large sample and increased population validity) [1] possibly because they are interested in the topic physical coordination. [1]</li> <li>Requires less time and effort on behalf of the researcher (as opposed to random sampling) [1] because the participants put themselves forward to take part / respond to an advert without the researcher having to actively search for participants [1]. The researcher needs to create an advert asking for participants for a study into language ability / physical coordination and then just wait for people to respond. [1]</li> <li>Any other appropriate point.</li> </ul>
<b>1 mark:</b> The identified strength is further explained/elaborated. (AO1)		
<b>1 mark:</b> The strength is either identified or explained within the context of the investigation. (AO2)		
<b>0 marks:</b> No creditworthy response.		

<b>Q13</b> Suggest how confidentiality could have been dealt with in this investigation. [2]		
<b>Marking Criteria [1+1]</b>	<b>AO/ Marks</b>	<b>Indicative Content</b>
<b>1 mark:</b> Relevant way that confidentiality could have been dealt with is suggested. (AO1)	<b>AO1 x1</b>	<u>Possible suggestions:</u> <ul style="list-style-type: none"> <li>▪ Allowing anonymous responses [1] by asking participants to not write their names on the spelling test. [1] (so it is not possible to personally identify which language ability scores belong to which participant).</li> <li>▪ Assigning each participant a number [1] by which the scores on the language ability / physical coordination tests could be recorded [1] (so it is not possible to personally identify which language ability scores belong to which participant).</li> <li>▪ Any other appropriate suggestion.</li> </ul>
<b>1 mark:</b> The suggested way that confidentiality could have been dealt with is explicitly made in the context of this investigation. (AO2)	<b>AO2 x1</b>	
<b>0 marks:</b> No creditworthy response.		



Q14 Discuss ways the researcher could improve the <b>validity</b> of this correlation investigation if they were to carry it out again. In your answer you should consider the implications of your suggested improvements. [6]			
Level	Marking Criteria	AO/ Marks	Indicative Content
<b>Level 3</b>  <b>(5–6 marks)</b>	Relevant ways that the validity could be improved are identified. (AO1) These are discussed in terms <b>the extent to which</b> they would develop the investigation by considering their implications. The points raised are made clearly and in detail. (AO3)	<b>AO1 x2</b>  <b>AO3 x4</b>	<u>Possible improvements that could be discussed:</u> <ul style="list-style-type: none"><li>Using additional ways to measure language ability such as a reading test as well as a spelling test. (AO1) This would increase construct validity by testing other elements of language ability that aren't measured by a spelling test alone. However, this would be more time consuming, and participants may drop out if they feel that the study is too onerous. (AO3)</li><li>Not telling the participants the aim of the study. (AO1) This would reduce demand characteristics as they can't act in a way they think the researcher wants if they don't know the aim, e.g. they might deliberately misspell words to try and 'help' the researcher. However, even if they aren't directly told the aim, they know they are participating in research so may work it out for themselves anyway. (AO3)</li><li>Using a larger sample size (AO1). This would likely improve the population validity as a larger sample will often be more representative of the target population. However, a larger sample does not always guarantee that it will be representative of all possible participant characteristics, for example the age range may be skewed towards younger people (AO3)</li><li>Any other appropriate point.</li></ul>
<b>Level 2</b>  <b>(3–4 marks)</b>	Relevant way(s) that the validity could be improved are identified. (AO1) The way(s) are discussed in terms of <b>how</b> they would develop the investigation to improve its validity. The point(s) raised are made clearly with some detail. (AO3)		
<b>Level 1</b>  <b>(1–2 marks)</b>	Relevant way(s) that the validity could be improved are identified. The point(s) may lack clarity and detail. (AO1)		
<b>0 marks:</b> No creditworthy response.			

**Q15** Design an experimental study to investigate if there is a difference in the language ability of people when they are carrying out a physical task and when they are not. You **must** refer to the following required features in your answer:

- the experimental design you would use
- how you would operationalise the dependent variable to obtain quantitative data
- how you would attempt to reduce the influence of one extraneous variable.

Justify the decisions you have made for each required feature.

[12]

Marking Criteria			Indicative Content
	AO2 x 6	AO3 x 6	
Level	The candidate applies knowledge and understanding of scientific ideas, processes, techniques and procedures for the theoretical design of a practical study by:	The candidate analyses, interprets and evaluates scientific information, ideas and evidence to develop and refine practical design through the justification of decisions made by:	
<b>Level 3</b> <b>(5–6 marks)</b>	Addressing <b>all three</b> Required Features (RFs) accurately, in context, and with sufficient clarity and detail to enable replication.	Providing accurate <b>and</b> detailed justification, in context, for <b>all three</b> design decisions.	<p><u>Suggestions for Required Features could include (AO2):</u></p> <p><b>RF1:</b> Independent Measures Design = different participants in the physical/non-physical conditions. Repeated Measures Design = same participants in the physical/non-physical conditions. Matched Participants Design = different participants in the physical/non-physical conditions but matched on a relevant characteristic.</p> <p><b>RF2:</b> Language ability could be operationalised in many different ways, e.g. by scores on a language test (e.g. raw scores or percentage scores), self-reported scores (e.g. a 1–10 scale), external ratings (e.g. an observer rating the language ability on a 1–10 scale whilst the task is being carried out). The method described <u>must</u> explicitly produce quantitative data. Any appropriate response should be credited.</p> <p><b>RF3:</b> There are many extraneous variables that could be controlled, for example the time given to complete the tests (e.g. 1 minute in both conditions), the task given (e.g. the same language test used in both conditions) or if English is the first language of participant, etc. Any appropriate response should be credited.</p>
<b>Level 2</b> <b>(3–4 marks)</b>	Addressing <b>two</b> of the Required Features (RFs) accurately, in context, and with sufficient clarity and detail to enable replication.	Providing accurate justification with reasonable detail, in context, for <b>at least two</b> of the design decisions.	<p><u>Justification for Decisions (AO3):</u></p> <p>The justification provided will depend on the suggestion made. Examples include:</p> <p><b>RF1:</b> If use of an IMD is suggested, this could be justified by the fact that there would be no order effects, or if use of an RMD is suggested, this could be justified by removal of participant variables.</p>
<b>Level 1</b> <b>(1–2 marks)</b>	Addressing <b>one</b> or more of the Required Features (RFs) accurately, in context, and with sufficient clarity and detail to enable replication.	Providing accurate justification for <b>at least one</b> of the design decisions.	<p><b>RF2:</b> If a test score is suggested, this could be justified by the fact that it would be standardised and therefore replicable (to test reliability) across all participants.</p> <p><b>RF3:</b> Many suggestions could be justified by the fact that there would be the same experience for participants in both conditions, increasing internal validity and the likelihood of a causal relationship.</p>
<b>0 marks</b>	No creditworthy response.		For all required features, any appropriate justification should be credited.

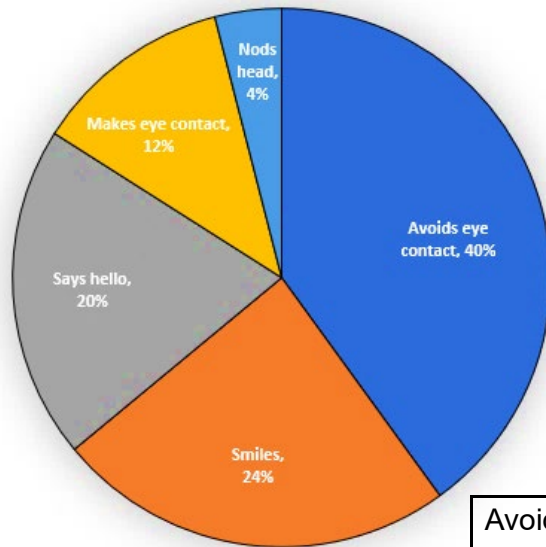
## Section C: Data analysis and interpretation

Q16 State <b>one</b> reason this investigation is an example of a <b>structured</b> observation. Use an example from the scenario to support your answer. [2]		
Marking Criteria [1+1]	AO/ Marks	Indicative Content
<b>1 mark:</b> One reason why the investigation is a structured observation is stated. (AO1)	<b>AO1</b> x1	<p><u>Possible reasons why the investigation is an example of a structured observation:</u></p> <ul style="list-style-type: none"> <li>Use of a coding scheme to record behaviour in different categories [1]. The coding scheme contains 6 different categories including 'smiles' and 'nods'. [1]</li> <li>The data is recorded in an objective manner [1] where the behaviours in a corridor that are being observed are pre-determined. [1]</li> <li>Any other appropriate point.</li> </ul>
<b>1 mark:</b> The stated reason is supported with a relevant example from the scenario. (AO2)	<b>AO2</b> x1	
<b>0 marks:</b> No creditworthy response.		

Q17 State <b>one</b> reason this investigation is an example of a <b>covert</b> observation. Use an example from the scenario to support your answer. <b>[2]</b>		
Marking Criteria [1+1]	AO/ Marks	Indicative Content
<b>1 mark:</b> One reason why the investigation is a covert observation is stated. (AO1)	<b>AO1</b> x1	<p>Possible reasons why the investigation is an example of a covert observation:</p> <ul style="list-style-type: none"> <li>The participants are unaware they are being observed [1]. Their behaviour is being recorded/observed via hidden cameras. [1]</li> <li>Any other appropriate point.</li> </ul>
<b>1 mark:</b> The stated reason is supported with a relevant example from the scenario. (AO2)	<b>AO2</b> x1	
<b>0 marks:</b> No creditworthy response.		

Q18 Identify the level of data that was obtained in this investigation. [1]		
Marking Criteria	AO/ Marks	Indicative Content
1 mark: Stating 'nominal data'.	AO2 x1	Nominal (data). [1]
0 marks: No creditworthy response.		

Q19 Calculate the ratio of the number of times people avoided eye contact to the number of times people smiled. Express your answer in its simplest form. [1]		
Marking Criteria	AO/ Marks	Indicative Content
1 mark: Accurate ratio identified <b>and</b> simplified (5:3).	AO2 x1	5:3 [1]  <b>NB.</b> The ratio must be presented the correct way round to be credited, e.g. 5:3 is correct, but 3:5 is not.
0 marks: No creditworthy response.		

Q20 Sketch a fully labelled pie chart showing the data collected in this investigation. [3]												
Marking Criteria [1+1+1]	AO/ Marks	Indicative Content										
1 mark: For correctly calculating percentages/fractions for each sector.	AO2 x3	<p>Pie chart showing the percentage of behaviours observed as two people approach each other along a corridor:</p>  <table data-bbox="1729 968 2110 1171"><tr><td>Avoids eye contact</td><td>40%</td></tr><tr><td>Smiles</td><td>24%</td></tr><tr><td>Says hello</td><td>20%</td></tr><tr><td>Makes eye contact</td><td>12%</td></tr><tr><td>Nods head</td><td>4%</td></tr></table> <p><b>NB.</b> Sectors of the pie chart only need to be approximate sizes. There is no need to check with a protractor or overlay.</p> <p>Calculations could be percentages or fractions displayed within the sector of the pie chart or to the side.</p>	Avoids eye contact	40%	Smiles	24%	Says hello	20%	Makes eye contact	12%	Nods head	4%
Avoids eye contact			40%									
Smiles			24%									
Says hello			20%									
Makes eye contact	12%											
Nods head	4%											
1 mark: For drawing the sectors in proportional size to the data displayed.												
1 mark: For including appropriate labels for the sectors of the pie chart.												
0 marks: No creditworthy response.												

<b>Q21</b> Analyse the data to reach a conclusion that could be made in this investigation. <b>[3]</b>		
<b>Marking Criteria [1+1+1]</b>	<b>AO/ Marks</b>	<b>Indicative Content</b>
<b>1 mark:</b> Relevant conclusion stated.	<b>AO3 x3</b>	<p><u>Example 3 mark answer:</u></p> <p>The most frequent behaviour was to avoid eye-contact, occurring 40% of the time [1] which suggests people do not like to acknowledge each other in a corridor [1]. This might be because there are a lot of different staff working in the building that they do not know. [1]</p> <ul style="list-style-type: none"> <li>Any other appropriate conclusion.</li> </ul>
<b>1 mark:</b> Stated conclusion is supported by reference to relevant findings.		
<b>1 mark:</b> A plausible explanation is given for the conclusion.		
<b>0 marks:</b> No creditworthy response.		

Q22 (a) Calculate the percentage number of times the behaviour recorded in this follow-up investigations was categorised as 'avoids eye contact. Show your working. Write your answer to 2 significant figures. [2]		
Marking Criteria [1+1]	AO/ Marks	Indicative Content
<b>1 mark:</b> Accurate percentage calculated and presented to 2 significant figures (40%).	<b>AO2 x2</b>	$125 \div 310 = 0.4032$ $0.4032 \times 100 = 40.323$ [1] Answer to 2 sig fig = <b>40%</b> [1]
<b>1 mark:</b> Some workings shown (it is not necessary for every step in the indicative content to be shown to achieve this mark).		
<b>0 marks:</b> No creditworthy response.		

Q22 (b) Tick (✓) the box below that represents the type of data collected in this study. [1]								
Marking Criteria [1+1]		AO/ Marks	Indicative Content					
1 mark: For placing a tick (✓) in the correct box.		AO2 x1	<table><tr><td>Primary, quantitative data <div><input checked="" type="checkbox"/></div></td><td>Primary, qualitative data <div><input type="checkbox"/></div></td><td>Secondary, quantitative data <div><input type="checkbox"/></div></td><td>Secondary, qualitative data <div><input type="checkbox"/></div></td></tr></table>		Primary, quantitative data <div><input checked="" type="checkbox"/></div>	Primary, qualitative data <div><input type="checkbox"/></div>	Secondary, quantitative data <div><input type="checkbox"/></div>	Secondary, qualitative data <div><input type="checkbox"/></div>
Primary, quantitative data <div><input checked="" type="checkbox"/></div>	Primary, qualitative data <div><input type="checkbox"/></div>		Secondary, quantitative data <div><input type="checkbox"/></div>	Secondary, qualitative data <div><input type="checkbox"/></div>				
0 marks: No creditworthy response.		[1]						

[1]



Q23 (a) State <b>one</b> reason why the Spearman's Rho is the most appropriate non-parametric inferential statistical test to data. [1]		
Marking Criteria	AO/ Marks	Indicative Content
<b>1 mark:</b> A reason that the Spearman's Rho is the most appropriate test to use for this investigation is clearly stated in the context of this study.	<b>AO2 x1</b>	<u>Possible reasons for using a Spearman's Rho:</u> <ul style="list-style-type: none"> <li>▪ The friendliness ratings were ordinal level data. [1]</li> <li>▪ OR The study was testing a relationship / aiming to see if there was a relationship between how friendly a person rated themselves and how friendly they were rated by others. [1]</li> <li>▪ Any other appropriate point.</li> </ul>
<b>0 marks:</b> No creditworthy response.		

Q23 (b) Identify the critical value at the 0.05 significance level for this investigation. [1]		
Marking Criteria [1+1]	AO/ Marks	Indicative Content
<b>1 mark:</b> For correctly stating 0.446.	<b>AO2 x1</b>	0.446 [1]
<b>0 marks:</b> No creditworthy response.		

Q23(c) Discuss <b>one</b> way the researcher could improve the way ‘friendliness’ was measured if they were to carry out the investigation out again. In your answer you should consider the implications of your suggested improvement. [3]			
Level	Marking Criteria	AO/ Marks	Indicative Content
<b>Level 3</b>  <b>(3 marks)</b>	Relevant way that the measurement of ‘friendliness’ could be improved is identified. (AO1) This is discussed in terms <b>the extent to which</b> it would develop the investigation by considering the implications. The point raised is made clearly and in detail. (AO3)	<b>AO1</b> <b>x1</b>  <b>AO3</b> <b>x2</b>	<u>Possible improvements that could be discussed:</u> <ul style="list-style-type: none"><li>▪ Increase the span of the rating scale to 1-100. (AO1) This means there are more intermediate numbers available for an individual to pick a friendliness rating scale that most closely represents themselves/their work colleague (and so is more valid), but a wide range of numbers might mean that one person interprets a number, say 56, in a completely different way to another participant (reducing reliability). (AO3)</li><li>▪ Reduce the span of the rating scale to an odd number such as 1-5. (AO1) This means there is a clear middle option, which is more valid as it doesn't force people to rate more on the friendly/unfriendly side. However, people would often choose the middle option to avoid appearing extreme (due to central tendency bias). (AO3)</li><li>▪ Use a Likert scale instead of a numerical rating scale. (AO1) Participants may find it easier to answer a question with qualitative descriptors (such as ‘I am friendly. Strongly agree, agree’, etc.) than a numerical scale where it isn't clear what level of friendliness each number refers to. However, there would still be the issue of participants interpreting the qualitative descriptors differently to others (reducing reliability). (AO3)</li><li>▪ Any other appropriate point.</li></ul>
<b>Level 2</b>  <b>(2 marks)</b>	Relevant way that the measurement of ‘friendliness’ could be improved is identified. (AO1) This is discussed in terms of <b>how</b> it would develop the investigation. The point raised is made clearly with some detail. (AO3)		
<b>Level 1</b>  <b>(1 mark)</b>	Relevant way that the measurement of ‘friendliness’ could be improved is identified. The point may lack clarity and detail. (AO1)		
<b>0 marks:</b> No creditworthy response.			

## H169/01 Assessment Objectives Grid

Q	Assessment Objectives														Total mark	Maths	Maths Skill	Recall
	AO1		AO2								AO3							
	AO1. 1a	AO1.1 b	AO2. 1a	AO2. 1b	AO2. 1c	AO2. 1d	AO2. 1e	AO2. 1f	AO2. 1g	AO2. 1h	AO3.1 a	AO3. 1b	AO3. 2a	AO3. 2b				
1	1														1			1
2								1							1	1	D.1.13	
3		1													1			
4				1											1	1	D.0.2	
5	1														1			
6								1							1	1	D.0.3	
7		1													1			
8		1													1			1
9							1								1			
10	1														1			
11a	1														1	1	D.1.15	1
11b						1									1	1	D.1.15	
11c	1														1			1
12		2							1						3			
13		1							1						2			
14		2											2	2	6			
15									4	2			3	3	12			
16	1				1										2			
17	1				1										2			
18						1									1	1	D.1.10	
19										1					1	1	D.0.2	
20										3					3			
21											2	1			3			
22a										2					2	2	D.0.2/ D.1.1	
22b										1					1	1	D.1.15/ D.1.16	
23a						1									1	1	D.1.12	
23b						1									1	1	D.1.13	
23c		1											1	1	3	14		
	7	9	0	1	2	4	1	2	6	9	2	1	6	6	56	14	-	4
	16		25								15				56	14	-	4