

**GCE** 

**Psychology** 

H567/01: Research methods

A Level

Mark Scheme for June 2022

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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#### MARKING INSTRUCTIONS

#### PREPARATION FOR MARKING

- 1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: RMAssessor3 assessor Online Training; OCR Essential Guide to Marking.
- 2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are posted on the RM Cambridge Assessment Support Portal <a href="http://www.rm.com/support/ca">http://www.rm.com/support/ca</a>
- 3. Log-in to RMAssessor3 and mark the **required number** of practice responses ("scripts") and the **number of required** standardisation responses.

YOU MUST MARK 10 PRACTICE AND 10 STANDARDISATION RESPONSES BEFORE YOU CAN BE APPROVED TO MARK LIVE SCRIPTS.

#### **MARKING**

- 1. Mark strictly to the mark scheme.
- 2. Marks awarded must relate directly to the marking criteria.
- 3. The schedule of dates is very important. It is essential that you meet the RMAssessor3 50% and 100% (traditional 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
- 4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone or the RMAssessor3 messaging system, or by email.

# 5. 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. Enter a mark for each question answered into RM assessor, which will 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).

When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

# **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 guestion 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.

6. 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.

- 7. 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).

Team Leaders must confirm the correct use of the NR button with their markers before live marking commences and should check this when reviewing scripts.

- 8. The RMAssessor3 **comments box** is used by your team leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.** 
  - If you have any questions or comments for your team leader, use the phone, the RMAssessor3 messaging system, or e-mail.
- Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.
- 10. For answers marked by levels of response: **To determine the level** start at the highest level and work down until you reach the level that matches the answer
  - a. 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   |

# 11 Notations

| Annotation  | Meaning  |
|-------------|--|
| BP          | Blank page   |
| ?           | Meaning unclear  |
| ×           | Incorrect  |
| 3           | Separate part of response                                      |
| ~~~         | Something incorrect/contradictory                              |
| >           | Correct  |
| <b>&gt;</b> | Move up a band or within band                                  |
| ^           | Missing information or Band down                               |
| AE          | Analysis using evidence  |
| CONT        | Development/expansion  |
| NAQ         | Not answering question   |
| RES         | Repeats  |
| SEEN        | Seen (to show content on page has been noted but not credited) |
| BOD         | Benefit of doubt given   |
| IRRL        | Irrelevant   |
| EVAL        | Evaluation   |

# **Section A: Multiple choice**

| Ques | Answer |  |  |  |
|------|--------|--|--|--|
| 1    | С      | introduction   |  |  |
| 2    | С      | p<0.001  |  |  |
| 3    | А      | Mann-Whitney U   |  |  |
| 4    | В      | peer review  |  |  |
| 5    | В      | 6  |  |  |
| 6    | В      | random   |  |  |
| 7    | D      | test-retest  |  |  |
| 8    | В      | nominal  |  |  |
| 9    | С      | 3:2  |  |  |
| 10   | В      | significant negative correlation   |  |  |
| 11   | В      | volume of grey matter in posterior hippocampus and length of time as a taxi driver |  |  |
| 12   | В      | 0.04   |  |  |
| 13   | Α      | concentration  |  |  |
| 14   | В      | Binomial Sign  |  |  |
| 15   | С      | sample size  |  |  |
| 16   | В      | likert   |  |  |
| 17   | С      | induction  |  |  |
| 18   | D      | type 1 error   |  |  |
| 19   | С      | overt  |  |  |
| 20   | D      | positively skewed  |  |  |

# Section B: Research design and response

# Get a grip

Hand shaking is a fairly common greeting between people in some cultures, especially when meeting someone for the first time. However, the way that we shake hands with someone can vary quite a lot, and this might influence what we think of the person whose hand we are shaking. Some research suggests that simply the length of time that the hand is shaken can influence how friendly or not we perceive the person to be. Psychologists want to study this using the experimental method to investigate the effect of a 'short' compared to a 'long' handshake on how friendly a person is thought to be.

| 21      | 21 Write an alternative, two-tailed hypothesis for this study   |       |   |
|---------|---|-------|---|
| Questio | n Answer  | Marks | Guidance  |
| 21      | For example There will be a significant difference in how friendly (on a scale of 1-10) a person is thought to be depending on the length of time their hand is shaken ('long' (5 secs) compared to 'short' (2 secs)) | Max 3 | Can be written in future or present tense. Use of the word 'significant' is not necessary for full marks.   |
|         | 3 marks are awarded for correctly citing an appropriate two-tailed alternative hypothesis for this study with increasing level of detail in terms of reference to the variables studied                               |       | For full marks <b>both</b> the variables must be operationalised.  How friendliness is measured (DV) – can be   |
|         | 1 mark for the stem which should predict a different including both the IV and DV, plus 2 further marks for operationalising each variable.   |       | ordinal, nominal or interval data. Rating scale does not need labelling. 'Rating scale' on its own not operationalised.  Length of each handshake (IV) needs to be specified e.g., 6 seconds  Doesn't matter if length of handshake is not suitable e.g., 1 minute  0 marks for null, one-tailed/directional, |
|         | Correctly cited two-tailed alternative hypothesis with both variables operationalised   | 3     |   |
|         | Correctly cited two-tailed alternative hypothesis with reference to both variables, but only one operationalised  | 2     |   |
|         | Correctly cited two-tailed alternative hypothesis with reference to both variables, but neither operationalised.  | 1     |   |
|         | The candidate has not provided any creditworthy information   | 0     | correlational hypothesis.  0 marks if gives both directional and non-directional - When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.  |

- 22\* Explain how you would conduct a study using the laboratory experimental method to investigate if the length of a handshake affects how friendly a person is thought to be. Justify your decisions as part of your explanation. You must refer to:
  - the sampling technique to obtain participants for the study
  - · which experimental design you would use in this study
  - how you would operationalise the dependent variable to obtain quantitative data
  - the control of one extraneous variable

You should use your own experience of practical activities to inform your response.

[15]

The mark scheme is a little different when it comes to this question. What you are being **driven** by is the left-hand column of the grid ('details of the required features (RFs)'. That is always your starting point and 'locator' for the appropriate mark band before considering the other two columns ('justification of decisions made' and 'reference to own practical work').

| Question 22              |  | Max mark = 15  | Context = friendliness, hand-shaking etc.   |
|--------------------------|--|--|---|
| Level of response        | Details of required features (RFs) included  | Justification of decisions made  | Reference to own practical work   |
| Good<br>12-15 marks      | -All 4 required features are good in context  -Accurate and detailed knowledge and understanding of each feature in context  -Good evidence of application of required features in context | -Appropriate justification of all decisions with at least one that is good and some is contextualised -Well developed line of reasoning that is clear and logically structured | -Explicit reference to own practical work and clear links between own work and the planned research, e.g., specific mention of question/scales used or extraneous variables controlled. e.g., specific mention of aim or procedural features  -For top band (good) 12 marks if just one RF explicitly linked, 13 marks if two, 14 marks if three and 15 if all four are linked explicitly.    |
| Reasonable               | -At least 3 required features are reasonable in context  | -Some appropriate justification of decision with at least one that is reasonable of related to required features (if no justification in                                       | -If there is no explicit clear link between own practical work and <i>any</i> of the 4 required features caps the mark at 11 maximum.   |
| 8-11 marks               | -Reasonably accurate and detailed knowledge and understanding of each feature  | context award 8 marks)  -There was a line of reasoning evident with some structure   | Additional Guidance RF 3- Needs to lead to data being quantitative to be addressed and measures friendliness (or something similar e.g., warmth). Context needs to be linked to the DV.   |
| <b>Limited</b> 4-7 marks | -At least <b>two</b> of the required features are limited in context  -Limited application of required features  | -Attempt to justify decision(s) with at least one that is limited but weak -Evidence of some structure, but weak   | Mislabeling 1-10 scale as likert scale will move the response down one level (e.g., fits the good level but has mislabeled 1-10 as likert so achieves reasonable)   |
|                          | OR three or all four required features referred to but in a limited way (in context or not)  |  | Overall, Mark 12-15 marks - 4 RFs in context and they must all be good  |
|                          | If 1 RF addressed in detail and justified in context award 4 marks   | t with explicit links made to own practical work   | 8-11 marks - 3 RFs in context and these three must be at least reasonable   |
| Basic<br>1-3 marks       | -At least one of the required features addressed  -Weak application of required features  OR more than one of the required features referred to but in a very brief and/or basic way       | -None, or if present very weak   | 4-7 marks - 2 RFs in context and these two must be at least limited OR 3-4 RFs which are at least limited (whether in context or not) OR 1 RF addressed in detail, justified in context and explicit links made to own practical work award 4 marks.  1-3 marks - at least 1 RF referred to (whether in context or not)  Maximum 11 marks (reasonable) if clearly done as a field experiment. |

| RF |  | Details of RF   |
|----|--|---|
| 1  | Sampling<br>technique                    | <ul> <li>Good – Identified the sampling method and clearly explained how this has been carried out in their study. Details of how is the sampling method is enacted/procedural details.</li> <li>Reasonable – Identified the sampling method, possibly defined and attempted to explain how this has been carried out in their study,</li> <li>Limited – sampling method identified and defined,</li> <li>Basic – Just identifying the sampling technique or confuses sampling methods</li> </ul>   |
| 2  | Experimental design                      | <ul> <li>Good – Design identified and conditions labelled with how the participants would be assigned to each condition. If RMD which condition is first/is it counter-balanced.</li> <li>Reasonable – Design identified and conditions labelled and brief or somewhat muddled outline of how the participants would be assigned to each condition.</li> <li>Limited – Design identified and conditions labelled.</li> <li>Basic – Design identified or described or confuses experimental designs (e.g., identifies RMD and outlines IMD).</li> </ul>  |
| 3  | Operationalising<br>DV                   | <ul> <li>Good – if a rating scale is suggested - clear numerical scale with ends of rating scale labelled. Semantic differential scales can be creditworthy and are considered reasonable (good if the numerical scale is given or an explanation of how the data will be made ordinal).</li> <li>Reasonable – rating scale given but lacks clarity (e.g., Ends of rating scale not labelled). Indicates a number of questions will be asked but does not explain how the final score for each participant will be calculated.</li> <li>Limited – way DV is operationalised could be considered to be quantitative but not explicit.</li> <li>Basic – vague indication of how DV would be measured e.g., Likert scale.</li> </ul> |
| 4  | Control of one<br>Extraneous<br>variable | <ul> <li>Good – Clear and somewhat detailed of how EV can be controlled,</li> <li>Reasonable – outline of how EV can be controlled,</li> <li>Limited explanation of the EV is unclear,</li> <li>Basic – identifies how EV can be controlled or is muddled.</li> </ul>   |

| 23 ( | a)     | Suggest one closed question you could use to obtain some additional information for this study. |   |       | ation for this study.  |  |
|------|--------|---|---|-------|--|--|
| Que  | stion  | Answer  |   | Marks | Guidance   |  |
| 23   | 23 (a) |   | Accept any appropriate closed question (e.g., what influences your impression of how friendly a person is (a) personality, (b) appearance or (c) sense of humour) |       | Context - friendliness, hand-shaking, short/long, greet, personality (e.g., extrovert)   |  |
|      |        | Clear suggestion of an appropriate  | closed question in context  | 3     | Allow any appropriate context.   |  |
|      |        | Suggestion of an appropriate closed question in context where the fixed responses lack clarity  | Appropriate closed question but not in context  | 2     | Fixed choice responses must be provided for full marks or stated within the question.  |  |
|      |        | Attempt to suggest appropriate closed question (whether in context or not)                      |   | 1     | Must label rating scales e.g., 1-10 where 10 is very friendly.   |  |
|      |        | The candidate has not provided any creditworthy information                                     |   | 0     | For 2 marks – Answer categories implied and in context.  Attempt – answer choices not provided where a closed answer could be provided (e.g., Did you enjoy having your hand shaken? Do you think appearance affects whether you think someone is friendly? How much did you enjoy having your hand shaken?)  zero marks if the only way to answer the question is qualitative (e.g., Describe |  |

| 23 ( | (b)   | Outline one strength of the use o   | Outline one strength of the use of closed questions in this study |         |   |
|------|---|---|---|---------|---|
| 23   | (b)   | Likely answers: easy to analyse; ea etc.  | y to compare across participants                                  | Max 3   | Context = friendliness, hand-shaking etc.   |
|      |   | Clear outline of strength in context  |   | 3       | Quick - open Qs take longer to gather   |
|      |   | Clear outline of strength but not in context  | Attempted outline of strength in context                          | 2       | data and/or data is quicker to analyse.   |
|      |   | Brief and/or weak attempt at an outl  | line (whether in context or not)                                  | 1       | <ul> <li>The strength must be specific to closed<br/>questions and not self-reports generally.</li> </ul> |
|      |   | The candidate has not provided any  | r creditworthy information  | 0       |   |
| 24   | Outline one weakness of conducting this study as a laboratory exp |   | ing this study as a laboratory exper                              | riment. |   |
| 24   |   | Likely answers:  The artificiality of the setting may produce unnatural behaviour that does not reflect real life, i.e., low ecological validity. This means it would not be possible to generalise the findings to a real-life setting. Demand characteristics or experimenter effects may bias the results and become confounding variables |   | Max 3   | Context = friendliness, hand-shaking etc.   |
|      |   | Clear outline of weakness in context  |   | 3       |   |
|      |   | Clear outline but not in context  | Attempted outline in context                                      | 2       |   |
|      |   | Brief and/or weak attempt (whether  | in context or not)  | 1       |   |
|      |   | The candidate has not provided any  | The candidate has not provided any creditworthy information       |         |   |

| 25       |  | Outline one way to help reduce demand characteristics in this study                           |   |                |  |  |
|----------|--|---|---|----------------|--|--|
| Question |  | Answer  Possible examples Disguising aim of study Asking additional, unrelated questions etc. |   | Marks<br>Max 2 | Guidance  Context = friendliness, hand-shaking etc.  Experimenter isn't in room when study is                  |  |
| 25       |  |   |   |                |  |  |
|          |  | One way to reduce demand characteristics clearly presented in context                         |   | 2              | taking place Independent measures (attempt unless  |  |
|          |  | One way to reduce demand characteristics clearly presented but not in context                 | OR attempted way to reduce demand characteristics (whether in context or not) | 1              | explained) Experimenter keeps a neutral expression (attempt unless explained) Ensuring anonymity of responses. |  |
|          |  | The candidate has not provided ar   | ny creditworthy information   | 0              |  |  |

| 26 | Outline two ways that you have designed this study which support the view the                  |   |       | at psychology is a science.   |
|----|--|---|-------|---|
| 26 | Likely answers: use of standardised procedures; controls; collection of quantifiable data etc. |   | Max 6 | Context = friendliness, hand-shaking etc. Reliable/replicable (due to standardisation) Controlling for extraneous variables Hypothesis testing  |
|    | 3 marks for each way outlined  | 3 marks for each way outlined                         |       |   |
|    | Clear outline in context   |   | 3     |   |
|    | Clear outline but not in context   | Attempted outline in context                          | 2     | Manipulation of variables (IV)/operationalizing variables  Cause and effect   |
|    | Brief and/or weak attempt (whether   | Brief and/or weak attempt (whether in context or not) |       | Falsification Objectivity – data free from misinterpretation Induction/deduction Quantitative/quantifiable Use of lab experiments 1 mark for identifying a feature of science. If two ways are given that cover the same point, credit the best one only. |
|    | The candidate has not provided any creditworthy information                                    |   | 0     |   |

# Section C: Data analysis and interpretation

#### Mobile mobile

Most people have a mobile phone so making or receiving a call while out and about is very easy. However, there may be differences in people's behaviour when talking on the phone. To study this a psychologist conducted an observation study to investigate if there are differences in how much men and women gesture (e.g. move hands or head) while talking on the phone. To do this they sat on a bench on a busy high street for two hours one Saturday afternoon and recorded the number of times people made gestures of any kind or not while talking on the phone. The data is presented in the table below.

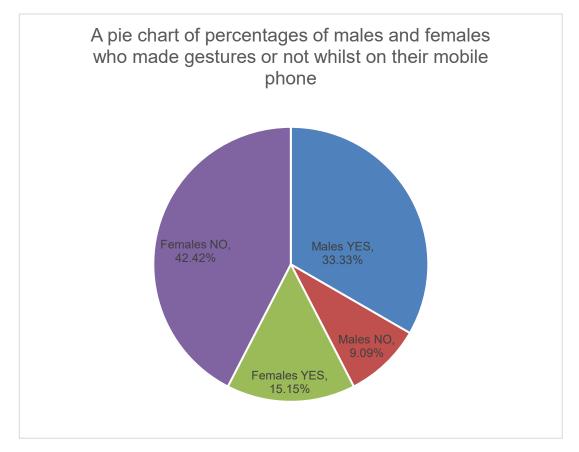
| females who made gestures or not while making or receiving a mobile phone call |           |           |  |  |  |
|--|-----------|-----------|--|--|--|
| Use of gestures  | Males     | Females   |  |  |  |
| Yes  | (a)<br>11 | (b) 5     |  |  |  |
| No   | (c) 3     | (d)<br>14 |  |  |  |

Table showing the number of males and

| 27       | Outline one conclusion that can be obtained from this study from the data presented in this table   |  |       |  |  |
|----------|---|--|-------|--|--|
| Question | Answer  |  | Marks | Guidance   |  |
| 27       | Conclusions could include: males gare less self-conscious than female how they think and this is reflected on the phone with other people ma  Accept any other appropriate conclusion | in conversations they have whilst king them more animated etc. | 3     | Context = mobile, phone, gestures etc.  Must be an interpretation of findings (not simply presentation of finding).  1 mark for finding, 2 marks for explanation. Example of a finding - 'Males gesture more than females' (1) |  |
|          | Clear, detailed conclusion in context   |  | 3     | Zana manda Winak daka ia minan   |  |
|          | Clear, detailed conclusion but not in context   | OR attempt in context  | 2     | Zero marks if just data is given.  |  |
|          | Brief and/or weak attempt (whether in context or not)   | OR simply stating a finding                                    | 1     |  |  |
|          | The candidate has not provided an   | y creditworthy information                                     | 0     |  |  |

| 28       | Draw a fully labelled pie chart showing the percentage of males compared to females who made gestures whilst on the phone  |       |   |  |  |  |
|----------|--|-------|---|--|--|--|
| Question | Answer   | Marks | Guidance  |  |  |  |
| 28       | A pie chart showing the proportion of males compared to females who made gestures whilst on their mobile phone  females 31%  Males 69%   | Max 4 | 1 mark for proportions 1 mark – male/female labelled (or key) 1 mark title  Males 11/16 x 100 = 68.75% accept 69 Females 5 / 16 x 100 = 31.25% accept 31  Title should refer to males and females and gestures. If no reference is made to percentage/proportion in title there must be % |  |  |  |
|          | Each feature can be awarded one mark as follows  1 mark is awarded for correctly calculating what % of the circle should represent the males and females who made gestures.  1 mark is awarded for drawing the sectors in correct proportion to data 1 mark is awarded for clear labelling of each sector of the pie chart 1 mark is awarded for a clear and appropriate title |       | within the pie chart to be creditworthy. Reference to number of males/females is not creditworthy.  If all data included – can be awarded full marks (see pie chart below) the candidate may alter the percentage slightly for one of the categories                                      |  |  |  |
|          | 4 features included  | 4     | to show the pie chart adds up to 100% (43% below illustrates this) which is still creditworthy.   |  |  |  |
|          | 3 features included  | 3     | Credit the whole numbers (15%, 42/43%, 9%   |  |  |  |
|          | 2 features included  | 2     | and 33%) regardless of what is written after the decimal point.   |  |  |  |
|          | 1 feature included   | 1     | Yes Female – 15% ( <mark>15.2</mark> )<br>No Female – 42% (42.4)/43%  |  |  |  |
|          | The candidate has not provided any creditworthy information  |       | No Male – 42% (42.4)/43%  No Male – 9% (9.1)  Yes Male – 33% (33.3)   |  |  |  |

| OR drawing 2 pie charts – one for males (21.4%, 78.6% or 21%,79%) and one for females (26.3%, 73.7% or 26%, 74%) also can be awarded 4 marks. |
|---|
| Drawing a pie chart where the total for males (79%) and total for females (26%) is not creditworthy.  |
| Be generous with drawing of the circle and indication of the proportions e.g., for the 31% need to be over a quarter of the circle.           |



|          |  | he psychologist used the Chi-square test to analyse the data from this study. Give one reason why this would be the opropriate non-parametric inferential test to use in this study. |       |  |  |  |
|----------|--|--|-------|--|--|--|
| Question |  | Answer   | Marks | Guidance   |  |  |
| 29       |  | Any one reason in context from: nominal/categorical data obtained; looking for a difference; independent/unrelated groups  | Max 2 | Nominal data/categories – whether the participant makes a gesture or not OR yes/no |  |  |
|          |  | One appropriate reason in appropriate context  | 2     | _<br>_ Independent measures – male/female  |  |  |
|          |  | One appropriate reason but not in context  | 1     | - maependent measures - male/lemale  |  |  |

|  | The candidate has not provided any creditworthy information | 0 | Looking for a difference – between males and females OR difference between the number of gestures made between males and females. |
|--|---|---|---|
|  |   |   | Reason and context must be linked.  |
|  |   |   |   |
|  |   |   |   |
|  |   |   |   |
|  |   |   |   |
|  |   |   |   |
|  |   |   |   |

| 30 (     | a)  | Calculate the expected frequency for cell D. Present your answer to two decimal places and show your workings. |   |       |   |  |
|----------|-----|--|---|-------|---|--|
| Question |     | Answer   |   | Marks | Guidance  |  |
| 30       | (a) | 9.79  Row total (17) x column total (19) /   | overall total (33) = 9.78787878   | Max 3 | 17 x 19 = 9.79 Award 3 marks  14-4.21 = 9.79 Award 3 marks  33-23.21 = 9.79 Award 3 marks  Many candidates are putting workings out for 30(b) in the answer to this question. If possible, ignore these workings out for this question.  9.79 in correct column in table (regardless of what else is written) = 1 |  |
|          |     | 9.79 with workings shown   |   | 3     |   |  |
|          |     | 9.78787878 with workings (not to 2 dps)  | OR 9.79 without workings  | 2     |   |  |
|          |     | 9.78787878 without workings (not a presented   | 9.787878 without workings (not to 2 dps) OR correct workings only presented |       |   |  |
|          |     | The candidate has not provided an  | y creditworthy information  | 0     |   |  |

| 30 (b) |        | Calculate the overall value of Chi-  | Calculate the overall value of Chi-square. Show your workings                                      |                              |   |   |  |
|--------|--------|--|--|------------------------------|---|---|--|
| Que    | estion | Answer Marks   |  | Marks                        | Guidance  |   |  |
| 30     | (b)    | $X^2 = 8.8$  |  |                              | Max 3   | Can credit cell calculations in the table |  |
|        |        | Workings Cell (d) O - E - 14 - 9.79 = 4.21 (O - E) <sup>2</sup> = 4.21 x 4.21 = 17.72 (O - E) <sup>2</sup> / E = 17.72 / 9.79 = 1.81  So, the sum of $(O-E)^2$ / E = 2.61 + 1.  Correct calculation of overall chi squ |  |                              | 17.72 / 9.79 = 1.81 (1) – on its own  2.61 + 1.92 + 2.46 + <b>1.81</b> = 8.8 award 3 marks  If incorrect frequency worked out in 30(a) will mean that the calculation will be incorrect = 0 |   |  |
|        |        | Correct calculation with some workings shown   |  |                              | 2   |   |  |
|        |        |  | All workings<br>shown correctly<br>but no<br>calculation<br>given (or<br>incorrect<br>calculation) | Cell D calculated correctly. | 1   |   |  |
|        |        | The candidate has not provided any   | creditworthy info  | rmation                      | 0   |   |  |

| 30 ( | c)     | Calculate the degrees of freedom for use with the Chi-square test in this study. Show your workings. |                             |                  |   |  |
|------|--------|--|-----------------------------|------------------|---|--|
| Que  | estion | Answer   |                             | Marks            | Guidance  |  |
| 30   | (c)    | df = 1<br>Workings<br>(2-1) x (2-1) = 1  |                             | Max 2            | No marks for just formula.<br>(R-1) x (C-1)   |  |
|      |        | Correct answer with workings   |                             | 2                |   |  |
|      |        | Correct answer but not workings (or workings incomplete or unclear)                                  | Workings but no answer      | 1                |   |  |
|      |        | The candidate has not provided ar  | ny creditworthy information | 0                |   |  |
| 30 ( | d)     | Using the extract from the table square test in this study at the 1                                  |                             | low, what is the | critical value for use with the Chi-  |  |
| 30   | (d)    | 6.635  |                             | Max 1            | Award 1 mark if candidate has circled (or otherwise correctly indicated) correct answer in table. |  |
|      |        | Correct answer provided  |                             | 1                |   |  |
|      |        | The candidate has not provided ar  | ny creditworthy information | 0                |   |  |

| 30 ( | e)    | What conclusions can be reached from the calculation of Chi-square   | s can be reached from the calculation of Chi-square in this study? |  |  |
|------|-------|--|--|--|--|
| Que  | stion | Answer   | Marks  | Marks Guidance                         |  |
| 30   | (e)   | <ul> <li>Any three from the following statements.</li> <li>There is a statistically significant difference between the number of males and females who made gestures whilst on the phone</li> <li>The probability of there being no difference between the number of males and females who made gestures whilst on the phone is less than 1%</li> <li>Males are more likely to make gestures whilst on the phone compared to females</li> <li>Because calculated is higher than the critical (a significant difference has been found).</li> <li>Null hypothesis can be rejected/alternative hypothesis can be accepted.</li> <li>any probability level other than 0.001 (e.g., p ≤ 0.01)</li> </ul> | Max 3  | Context = mobile, phone, gestures etc. |  |
|      |       | 3 correct statement – with at least 1 in context   | 3  |  |  |
|      |       | 2 correct statements   | 2  |  |  |
|      |       | 1 correct statement  | 1  |  |  |
|      |       | The candidate has not provided any creditworthy information  | 0  |  |  |

| 31 ( | a)  | Outline one strength of the use of  | f the quantitative data collected in     | this study. | •  |  |
|------|-----|---|--|-------------|--|--|
| 31   | (a) | Answers could include: easier data analysis and comparison across groups (males and females); easier to record data; easier to interpret, no researcher bias to interpret, etc.         |  | Max 3       | Context = mobile, phone, gestures, male/female etc.                        |  |
|      |     | Clear outline of strength in context  |  | 3           | No credit for reference to being able to calculate the mean as this is not |  |
|      |     | Clear outline of strength but not in context  | Attempted outline of strength in context | 2           | relevant for this data.  |  |
|      |     | Brief and/or weak attempt at an out or not)   | line of strength (whether in context     | 1           |  |  |
|      |     | The candidate has not provided any  | y creditworthy information               | 0           |  |  |
| 31 ( | b)  | Outline one weakness of the use   | of the quantitative data collected i     | n this stud | y.   |  |
| 31   | (b) | Answers could include: doesn't inform us about reasons why there is a difference in amount of gesturing made whilst on phone between males and females, mean cannot be calculated, etc. |  | Max 3       | Context = mobile, phone, gestures, male/female etc.                        |  |
|      |     | Clear outline of weakness in context  |  | 3           |  |  |
|      |     | Clear outline of weakness but not in context  | Attempted outline of weakness in context | 2           |  |  |
|      |     | Brief and/or weak attempt at an out context or not)   | line of weakness (whether in             | 1           |  |  |
|      |     | The candidate has not provided any  | y creditworthy information               | 0           |  |  |

| 32       | Outline two ways in which the naturalistic observation method used in this study could affect the validity of the data collected.   |   |       |  |  |
|----------|---|---|-------|--|--|
| Question | Answer  |   | Marks | Guidance   |  |
| 32       | Evaluation points could include: higher validity as participants unlikely to know they are being observed; higher ecological validity as in natural setting of high street; low validity due to possibly missing/misinterpreting some use of gesturing if high street busy, lower validity due to more extraneous variables in the natural environment, etc.  Accept any other appropriate conclusions here.  3 marks for each evaluation point |   |       | Context = mobile, phone, gestures, male/female, high street, bench etc.  Full credit can be given for two positive effects on validity, two negative effects or one of each.  Lacks external validity - from a busy high street to different locations is creditworthy |  |
|          | Clear, detailed evaluation in contex  | ct  | 3     |  |  |
|          | Clear, detailed evaluation but not in context   | OR attempted evaluation in context                                  | 2     | Do not credit population validity.  Do not credit references to reliability.   |  |
|          | Brief and/or weak attempt at evalua   | Brief and/or weak attempt at evaluation (whether in context or not) |       |  |  |
|          | The candidate has not provided an   | y creditworthy information  | 0     |  |  |

| Question Answer Marks Guid |  |  |   | Guidance |                             |  |
|----------------------------|--|--|---|----------|-----------------------------|--|
| 31 (a                      | Which section of the write-up of a practical report for this research would each of the following appear in?  (a) raw data |  |   |          | of the following appear in? |  |
| 33                         | (a)  |  | appendices  | 1        |                             |  |
| 31 (                       | 31 (b)   |  | (b) calculations for statistical analyses performed |          |                             |  |
|                            | (b)  |  | appendices  | 1        |                             |  |

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