



GCE

Psychology

H167/01: Research methods

AS Level

Mark Scheme for June 2024

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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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H167/01

Mark Scheme
MARKING INSTRUCTIONS

June 2024

**PREPARATION FOR MARKING
RM ASSESSOR**

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor 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 <http://www.rm.com/support/ca>
3. Log-in to RM Assessor 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 RM Assessor 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 RM Assessor 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 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.

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 RM Assessor **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 RM Assessor messaging system, or e-mail.

9. *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: Not applicable in F501

- To determine the level** – start at the highest level and work down until you reach the level that matches the answer
- 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. Annotations

Annotation	Meaning
	Correct
	Incorrect
	Unclear
	Context
	Level 1 (RF is basic)
	Level 2 (RF is limited)
	Level 3 (RF is reasonable)
	Level 4 (RF is good)
	Evaluation
	Repetition
	Missing information
	Not answering question
	Benefit of doubt given
	Irrelevant
	Seen (to show content on a page has been noted, but not credited)
	Highlighter tool

12. Subject Specific Marking Instructions

Section A: Multiple choice

Question	Answer	Guidance
1	B	A summary of the research
2	D	Snowball sampling
3	C	Whether the measurement of a variable can predict outcomes for similar behaviour in the future
4	D	22%
5	B	Null hypothesis
6	D	Parametric statistical tests
7	D	All of the above
8	B	Peer-review
9	B	Social desirability
10	C	Skew
11	A	Through local child or general practitioner clinics
12	B	Every 5 seconds for 20 minutes
13	D	Secondary
14	D	29
15	D	Right to withdraw

Section B: Research design and response

Identify one reason why the study might have low population validity. [1]						
Question			Answer	Marks	Guidance	
16	(a)		<u>Answers could include:</u> • Low response rate. • People may be embarrassed and so not want to take part. • People may not complete the self-report. • Only people with certain characteristics might take part. • A small sample size might be collected.	Max 1	Context not needed here, but if used as part of an example provided by the candidate it is ok (context = mental health, grateful, feelings, etc.)	
			One correct reason identified			1
			The candidate has not provided any creditworthy information			0

Write a one-tailed alternative hypothesis for this study. [3]				
Question		Answer		Guidance
16	(b)		3 marks are awarded for correctly citing an appropriate alternative hypothesis for this study with increasing level of detail in terms of reference to the variables studied.	Can be written in future or present tense. Use of the word 'significant' is not necessary for full marks. Award zero for a null hypothesis. For full marks both the variables must be operationalised. Zero marks if cited as two-tailed (must be one-tailed). This may be phrased as an experimental or correlational hypothesis, depending on how the variables are operationalised.
			Example: There will be a significant positive correlation between the number of things people feel grateful for and mental health on a scale of 1-10 (1=poor mental health, 10 = good mental health). There will be a significant increase in mental health on a scale of 1-10 (1=poor mental health, 10 = good mental health), when people write down five or more things that they are grateful for.	
			Correctly cited one-tailed alternative hypothesis with both variables operationalised	
			Correctly cited one-tailed alternative hypothesis with reference to both variables, but only one operationalised	
			Correctly cited one-tailed alternative hypothesis with reference to both variables, but neither operationalised	
			The candidate has not provided any creditworthy information	

Explain how you would use the self-report method to investigate what kind of things make people feel grateful and if this helps improve their mental health. Justify your decisions as part of your explanation. You must refer to:

- the use of a structured interview
- one question that uses a Likert scale
- the sampling method you would use to collect participants.

You should use your own experience of practical activities to inform your response. [12]

Question			Answer	Marks	Guidance
17*				Max 12	Context = mental health, grateful, feelings, etc.

Level of response	Details of required features (RFs) included	Justification of decisions made	Reference to own practical work
Good 10-12 marks	All 3 required features addressed. 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 and <i>some</i> 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 for each required feature. E.g. specific mention of aim or procedural features.
Reasonable 7-9 marks	All 3 required features addressed. Reasonably accurate and detailed knowledge and understanding of each feature. At least two applications of required features in context.	Some appropriate justification of decision related to all three required features (7 marks if only two required features justified). There was a line of reasoning evident with some structure.	For top band (good) 10 marks if just one RF linked, 11 marks if two and 12 if all three.
	If two required features are addressed in detail and justified in context and explicit links made to own practical work award 8 marks.		If there is no explicit clear link between own practical work and <i>any</i> of the 3 required features caps the mark at 9 maximum.
Limited 4-6 marks	Two of the required features addressed.	Attempt to justify decision(s) but weak. Evidence of some structure, but weak.	
	Limited application of required features.		
	OR all required features referred to but in a limited way.		
	If one required feature addressed in detail and justified in context and explicit links made to own practical work award 4 marks.		
Basic 1-3 marks	One of the required features addressed. Weak application of required features.	None , or if present very weak.	
	OR more than one of the required features referred to but in a very brief and/or basic way.		

RF		Details of RF
1	Use of a structured interview.	• Good – A clear understanding of a structured interview with a clear and detailed overview of how the interview will be conducted – this could contain some procedural details • Reasonable – A clear understanding of a structured interview with an overview of how the interview will be conducted • Limited – An attempt at defining a structured interview with an indication that there are pre-determined questions with an attempted overview of how the interview will be conducted • Basic – An attempt at defining a structured interview – maybe some confusion about understanding of what a structured interview is
2	One question that uses a Likert scale.	• Good – A clear question with a scale including all options relevant to a Likert scale • Reasonable – A clear question with a Likert scale but some options within the scale may be missing • Limited – A Likert scale identified and defined • Basic – Some confusion regarding different rating scales
3	The sampling method you would use to collect participants.	• Good – Identified sampling method, possibly defined and clearly explained how this has been carried out in their study. This should include how the sampling method has been enacted/some procedural details • Reasonable – Identified sampling method, possibly defined and attempted to explain how this has been carried out in their study • Limited – Identified sampling method and defined • Basic – Just identified sampling technique or confuses sampling methods

Suggest one open question you could use in this study. [2]					
Question		Answer		Marks	Guidance
18			<u>Example open questions:</u>	Max 2	Context = mental health, grateful, feelings, etc. If any response categories are explicitly given, or implied in the question, then award zero. Doesn't need a question mark.
			<i>Describe the things that make you feel grateful.</i>		
			<i>Why do you think your mental health is sometimes poor?</i>		
			<i>Explain why your mood is sometimes low.</i>		
		Open question in context		2	
Open question, but not in context		OR attempt to suggest open question in context	1		
		The candidate has not provided any creditworthy information		0	

Outline one strength of the use of open questions in this study. [3]				
Question		Answer		Marks
19	(a)	Answers could include: - Can obtain more rich, detailed information regarding what people are grateful for and how/why it influences their mental health and well-being. - Responses are unrestricted about what people are grateful for and can give a more accurate answer about how it influences their mental health and well-being.		Max 3
		Clear outline of strength in context		3
		Attempt to outline strength in context	OR Clear outline of strength but not in context	2
		Brief and/or weak attempt to outline strength (whether in context or not)		1
		The candidate has not provided any creditworthy information		0

Context = mental health, grateful, feelings, etc.

Outline one weakness of the use of open questions in this study. [3]				
Question		Answer		Marks
19	(b)	Answers could include: - Difficult to analyse what people are grateful for and how it influences their mental health and well-being, therefore answers are difficult to compare. - Some people may not be able to express themselves well regarding what they are grateful for and how it influences their mental health and well-being, therefore answers may lack validity.		Max 3
		Clear outline of weakness in context		3
		Attempt to outline weakness in context	OR Clear outline of weakness but not in context	2
		Brief and/or weak attempt to outline weakness (whether in context or not)		1
		The candidate has not provided any creditworthy information		0

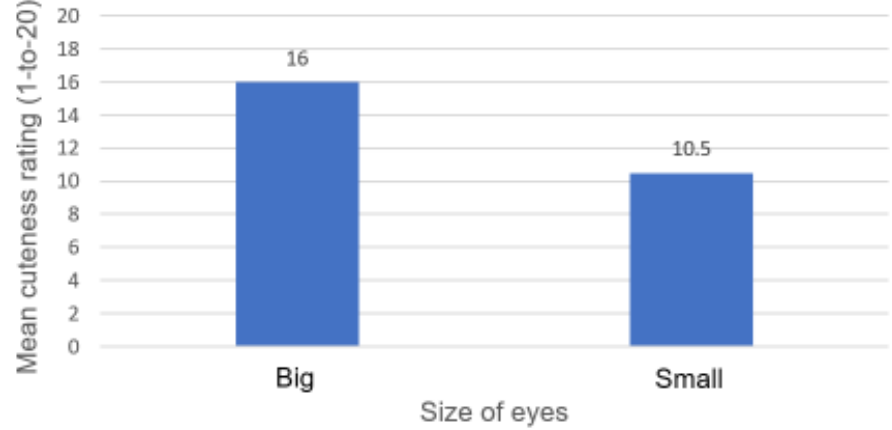
Context = mental health, grateful, feelings, etc.

Outline how you would address <u>two</u> ethical considerations in the design of this study. [6]						
Question			Answer	Marks	Guidance	
20			<u>Answers could include:</u> • Respect (consent, withdrawal and confidentiality) • Competence (having a researcher trained in mental health conduct the interview) • Responsibility (protection from harm and debrief) • Integrity (maintain high standards and no use of deception).	Max 6 [3+3]	Context = mental health, grateful, feelings, etc. Candidates do not need to use the headings Respect, Competence, Responsibility, Integrity.	
			3 marks for each way to address an ethical consideration:			
			Clear outline in context		3	Candidates must outline two separate ethical considerations.
			Attempted outline in context	OR Clear outline but not in context	2	
			Brief and/or weak outline (whether in context or not)		1	
			The candidate has not provided any creditworthy information		0	

Outline one strength of using an interview rather than a written questionnaire in this study. [3]						
Question		Answer		Marks	Guidance	
21			<u>Answers could include:</u> - As an interview is face to face, the interviewer can clarify what questions mean/respondent can ask for clarification which is more difficult to do with a questionnaire as the researcher is not always present. - As an interview is face to face, the interviewer can respond better to how participants are reacting to the questions which isn't always possible to do with a questionnaire. - As an interview is a conversation, the interviewer can reassure participants if needed at any stage which isn't always possible with a questionnaire.		Max 3	Context = mental health, grateful, feelings, etc. Don't accept responses related to data types as both qualitative and quantitative data can be collected in an interview or a questionnaire. For a 'clear outline', candidates must indicate within the answer why this is a strength of an interview in comparison to a questionnaire.
			Clear outline of strength in context		3	
			Attempt to outline strength in context	OR Clear outline of strength but not in context	2	
			Brief and/or weak attempt to outline strength (whether in context or not)		1	
			The candidate has not provided any creditworthy information		0	

Suggest two variables that could be correlated in this study to investigate the relationship between feeling grateful and mental health/well-being. [2]					
Question			Answer	Marks	Guidance
22			Answers could include: • Ratings of how grateful people feel (1-10) and self-ratings of mental well-being (1-10). • Number of things people report feeling grateful for and self-ratings of mental well-being (1-10).	Max 2 [1+1]	Context = mental health, grateful, feelings, etc.
			Suggestion of a clearly quantified variable in context	1	Must be clear how the variables are/can be quantified for use in a correlation analysis.
			The candidate has not provided any creditworthy information	0	Must be indicative of ordinal data.

Section C: Data analysis and interpretation

Draw a fully labelled bar chart displaying the mean rating for how cute the puppy was perceived to be in each condition for this study. [4]										
Question		Answer	Marks	Guidance						
23		Bar chart showing mean rating of how cute a puppy dog is perceived to be with big compared to small eyes  <table><tr><th>Size of eyes</th><th>Mean cuteness rating (1-to-20)</th></tr><tr><td>Big</td><td>16</td></tr><tr><td>Small</td><td>10.5</td></tr></table>	Size of eyes	Mean cuteness rating (1-to-20)	Big	16	Small	10.5	Max 4 [1+1+1+1]	If a clearly contextualised title has been included, this could make up for any shortfall of labelling on an x and y axis. Candidates must make clear in the title that this bar chart is showing the 'mean'.
	Size of eyes	Mean cuteness rating (1-to-20)								
	Big	16								
	Small	10.5								
		1 mark is awarded for correctly calculating then presenting by value each bar representing the mean rating of how cute the puppy dog is perceived to be in each condition	1							
	1 mark is awarded for named categories/clear labelling of the x axis	1								
	1 mark is awarded for clear labelling of the y axis (must be contextualised to 'cuteness')	1								
	1 mark is awarded for a clearly contextualised title	1								

Outline one strength and one weakness of the use of quantitative data in this study. [6]						
Question		Answer		Marks	Guidance	
25		<u>Strengths could include:</u> - Allows participants to be more precise about level of cuteness as the scale (1 – 20) is quite broad and has verbal labels at each end (not very cute and extremely cute). - Easy to analyse and compare findings on ratings of cuteness of puppy. - Easy to present findings and plot visually (e.g., in a bar chart displaying mean cuteness rating across each condition) therefore easier to compare. <u>Weaknesses could include:</u> - Numbers in the ratings lack detail therefore don't indicate why participants thought the puppy was cute or not. - Some participants may interpret the scale differently to others (e.g. one person's idea of what 7 on the scale is, might be different to another person's idea of what 7 indicates in terms of cuteness).		Max 6 [3+3]	Context = puppy, dog, cute, etc.	
		For each strength/weakness:				
		Clear outline of strength/weakness in context				3
		Attempted outline of strength/weakness in context	OR Clear outline of strength/weakness, but not in context			2
		Brief and/or weak attempt to outline strength/weakness (whether in context or not)				1
		The candidate has not provided any creditworthy information				0

The inferential statistical test used to analyse the data collected in this study is the Wilcoxon Signed Ranks test. Explain how data is ranked for this test in this study. [3]						
Question			Answer		Marks	Guidance
26	(a)		Ranking involves assigning data values that denote their position in an ordered sequence (i.e. putting the values in order from lowest to highest). For the data in this study, this involves ranking the difference between the ratings of cuteness for each condition (i.e. not ranking the scores/ratings themselves).		Max 3	Context = puppy, dog, cute, etc. Convention is that the lowest score is assigned rank one and then proceed on this basis (but can be done vice versa (highest score is assigned rank 1)).
			Clear explanation in context of what ranking involves and how it is done using the Wilcoxon test for the data in context.		3	
			Explanation of what ranking in general involves and explanation of how ranking is done using the Wilcoxon test, not in context.		2	
			OR Explanation of what ranking in general involves in context.			
			OR Explanation of how ranking is done using the Wilcoxon test in context			
			Explanation of what ranking in general involves	OR Explanation of how ranking is done using the Wilcoxon test	1	
			The candidate has not provided any creditworthy information		0	

Using the Wilcoxon Signed Ranks test, calculate the value of T for the data collected in this study by completing the table below. [3]

Formula / process: T = the sum of the ranks of the differences with the least frequent sign

Question		Answer	Marks	Guidance																																												
26	(b)	<table><tr><th colspan="6">Ratings of how cute a puppy dog is with big eyes compared to small eyes (1 = 'not very cute', 20 = 'extremely cute')</th></tr><tr><th>Participant</th><th>Condition (a) with big eyes</th><th>Condition (b) with small eyes</th><th>Difference (a) – (b)</th><th>Ranks of differences</th><th>T value (sum of the ranks of the differences with the least frequent sign)</th></tr><tr><td>a</td><td>18</td><td>7</td><td>11</td><td>5.5</td><td rowspan="5">1 + 2 = 3 T = 3</td></tr><tr><td>b</td><td>14</td><td>3</td><td>11</td><td>5.5</td></tr><tr><td>c</td><td>12</td><td>14</td><td>-2</td><td>1</td></tr><tr><td>d</td><td>17</td><td>20</td><td>-3</td><td>2</td></tr><tr><td>e</td><td>19</td><td>9</td><td>10</td><td>4</td></tr><tr><td>f</td><td>16</td><td>10</td><td>6</td><td>3</td><td></td></tr></table>	Ratings of how cute a puppy dog is with big eyes compared to small eyes (1 = 'not very cute', 20 = 'extremely cute')						Participant	Condition (a) with big eyes	Condition (b) with small eyes	Difference (a) – (b)	Ranks of differences	T value (sum of the ranks of the differences with the least frequent sign)	a	18	7	11	5.5	1 + 2 = 3 T = 3	b	14	3	11	5.5	c	12	14	-2	1	d	17	20	-3	2	e	19	9	10	4	f	16	10	6	3		Max 3 1+1+1	If candidate has the correct answer but not shown any workings, award 1 mark.
		Ratings of how cute a puppy dog is with big eyes compared to small eyes (1 = 'not very cute', 20 = 'extremely cute')																																														
		Participant	Condition (a) with big eyes	Condition (b) with small eyes	Difference (a) – (b)	Ranks of differences	T value (sum of the ranks of the differences with the least frequent sign)																																									
		a	18	7	11	5.5	1 + 2 = 3 T = 3																																									
		b	14	3	11	5.5																																										
		c	12	14	-2	1																																										
d	17	20	-3	2																																												
e	19	9	10	4																																												
f	16	10	6	3																																												
1 mark for the correct answer (T=3)	1																																															
1 mark for Ranks of differences	1																																															
1 mark for working out the Difference (a) – (b)	1																																															
The candidate has not provided any creditworthy information	0																																															

Outline one reason why the reliability of the data collected in this study could be low. [3]						
Question			Answer	Marks	Guidance	
27			Answers could include: - Some participants interpreting the rating scale for cuteness differently to others. - If a different type/breed of dog was used in the photo with big eyes compared to the photo with small eyes. - Type of people used in the sample (if dog owners or not) because they might interpret the photos differently.	Max 3	Context = puppy, dog, cute, etc. To score above 1 mark, the candidate must show an understanding of the concept of reliability (not just giving a generic example that could also affect the validity). No credit for reference to population validity or generalisability.	
			Clear outline in context		3	
			Clear outline, but not in context	An attempt in context	2	
			Brief and/or weak outline, whether in context or not		1	
			The candidate has not provided any creditworthy information		0	

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