

Advanced Subsidiary GCE
GCE PSYCHOLOGY

G541 QP

Unit G541: Psychological Investigations

Specimen Paper

Morning/Afternoon

Time: 1 hour

Additional Materials: Answer Booklet (...pages)



INSTRUCTIONS TO CANDIDATES

- Answer **all** the questions.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part of question.
- The total number of marks for this paper is **60**.

ADVICE TO CANDIDATES

- Read each question carefully and make sure you know what you have to do before starting your answer.

Quality of written communication is assessed throughout this paper.

Candidates should;

- ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear;
- select and use a form and style of writing appropriate to purpose and to complex subject matter
- organise information clearly and coherently, using specialist vocabulary when appropriate

This document consists of **5** printed pages.

Section A

Answer **all** questions.

A researcher has conducted an experiment to see if people recall more words from a list of ten words when they learn and recall in the same room rather than if they learn in one room and recall in a different room. This was an independent measures design.

The results were as follows:

	Recall in same room	Recall in different room
No of words recalled	9	2
	8	6
	8	8
	7	6
	7	7
	8	9

- 1 (a) Suggest an appropriate null hypothesis for this experiment [4]
- (b) Identify the independent variable and the dependent variable in this experiment. [2]
- 2 (a) What is meant by an 'independent measures' design? [2]
- (b) What is meant by a 'repeated measures' design? [2]
- (c) Outline **one** strength and **one** weakness of using an independent measures design for this experiment. [6]
- 3 Outline **two** findings that might be drawn from this data. [4]

Section A Total [20]

Section B

Answer **all** questions.

A researcher wishes to conduct an observation of students' use of their free time in college.

- 4 Describe and evaluate a suitable procedure for this observation. [10]
- 5 Describe **one** ethical issue that the researcher needs to consider when conducting this observation and suggest how this could be dealt with. [4]
- 6 (a) Explain what is meant by inter-rater reliability. [2]
- (b) Suggest how the researcher could ensure that this observation has inter-rater reliability. [4]

Section B Total [20]

SPECIMEN

Section C

Answer **all** questions.

A researcher has conducted a correlational study to investigate the relationship between how good people think their memory is and how well they do on a memory test. The first variable was 'self rating of memory' and was measured by asking people to rate their memory on a 10 point scale (where 1 = very poor and 10 = excellent). The second variable was 'actual memory' and this was measured by showing them a video of a minor road accident and asking them a series of 10 eye-witness questions.

Results were as follows:

Participant no	Self rating of memory	Score on Memory test
1	3	5
2	4	6
3	5	4
4	8	8
5	9	7
6	10	9
7	7	6
8	7	8
9	5	6
10	6	7

- 7 (a) Sketch an appropriately labelled scattergraph displaying the results. [4]
 (b) Outline **one** conclusion that can be drawn from this scattergraph [3]
- 8 Suggest **one** problem with the way 'self rating of memory' has been measured in this investigation. [3]
- 9 Describe and evaluate **two** other ways in which 'actual memory' might be measured. [10]

Section C Total [20]

Paper Total [60]

SPECIMEN

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The maximum mark for this paper is **60**.

SPECIMEN

Section A		
Question Number	Answer	Marks
1	<p>A researcher has conducted an experiment to see if people recall more words from a list of ten words when they learn and recall in the same room rather than if they learn in one room and recall in a different room. This was an independent measures design.</p>	
1(a)	<p>Suggest an appropriate null hypothesis for this experiment An appropriate null hypothesis should read as follows: ‘There will be no difference between the number of words recalled when participants learn and recall in the same room and when participants learn and recall in different rooms’; The style of null hypotheses will vary between candidates (for example the use of the word ‘significant’ or the inclusion of the phrase ‘any difference is due to chance’. The marking should not penalise style but a null should be non-directional (two-tailed).</p> <p>0 marks – the candidate has not provided any creditworthy information or has written an alternate hypothesis or a null stating no relationship rather than no difference. 1 mark – the candidate has written a null hypothesis but has simply stated ‘there will be no difference’ and there is no indication of the variables. 2 marks – the candidate has written a null hypothesis but has only included one variable, e.g. there will be no difference between recall in the two conditions’. 3 marks – the candidate has written a null hypothesis including both variables but there is a lack of clarity either specifically relating to one variable (for example, stating memory rather than ‘no of words recalled’ or the null hypothesis as a whole is poorly worded and lacks clarity. 4 marks – the candidate has written a clearly stated null hypothesis.</p>	[4]
1(b)	<p>Identify the independent variable and the dependent variable in this experiment Candidates should state that the independent variable is whether participants learn and recall in the same room or in different rooms, and that the dependent variable is the number of words recalled. Candidate’s answers should state clearly which variable is which rather than simply writing down the two variables with no indication of which is the IV and which is the DV.</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – the candidate has correctly identified one variable. 2 marks – the candidate has correctly identified both variables.</p>	[2]

Section A		
Question Number	Answer	Marks
2(a)	<p>What is meant by an ‘independent measures’ design? An independent measures design is where different participants are tested in each condition.</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – some creditworthy content (for example simply stating ‘different participants’ or ‘different groups of participants’) but some lack of clarity. 2 marks – a clear description of an independent measures design.</p>	[2]
2(b)	<p>What is meant by a ‘repeated measures’ design? A repeated measures design is where the same participants are tested in each condition.</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – some creditworthy content (for example simply stating ‘same participants’ or ‘same groups of participants’) but some lack of clarity. 2 marks – a clear description of a repeated measures design.</p>	[2]
2(c)	<p>Outline one strength and one weakness of using an independent measures design for this experiment. The candidate must relate their answer to the material given in the source material to be awarded full marks. Strengths of independent measures include the lack of order effects when participants are only involved in one condition and the fact that participants are less likely to figure out the aims of the research. The most likely weakness will be subject variability – difficult to compare results when the groups are made up of different participants (a very strong answer may pick up on the fact that this is a particular problem when group sizes are very small as they are here)</p> <p>3 marks should be awarded for the strength and 3 marks for the weakness as follows: 0 marks – the candidate has not provided any creditworthy information. 1 mark – an appropriate strength/weakness has been identified but there is no elaboration and no link to the research described in the source material (for example the candidate simply states ‘no order effects’. 2 marks – an appropriate strength/weakness has been outlined clearly but this has not been done in the context of the research described in the source material. 3 marks – an appropriate strength/weakness has been outlined clearly and in the context of the research described in the source.</p>	[6]

Section A		
Question Number	Answer	Marks
3	<p>Outline two findings that might be drawn from this data.</p> <p>Most likely answers include: stating that the mean score (or the modal score) is higher for participants who recall in the same room, that the scores for the participants who recall in a different room are more spread out (greater variance) or they may comment on 'rogue' scores such as 2 and 9 in the 'recall in different room' condition and the effect that these may have on the results.</p> <p>2 marks for each finding as follows: 0 marks – the candidate has not provided any creditworthy information. 1 mark – the candidate has stated a finding but this lacks clarity or has not been stated in the context of the research described in the source material. 2 marks – the candidate has stated a clear finding and this has been done in the context of the research described in the source material.</p>	[4]
Section A Total		[20]

Section B		
Question Number	Answer	Marks
4	<p>A researcher wishes to conduct an observation of students' use of their free time in college.</p> <p>Describe and evaluate a suitable procedure for this observation</p> <p>0 marks – No or irrelevant answer.</p> <p>1-4 marks – There may be some strengths and weaknesses which are peripheral to the question, or there may be an imbalance between the two. Discussion is limited with some understanding though expression may be poor or limited. Description is basic sometimes and argument just discernable. Sparse or no use of supporting examples. The answer has lacks structure and organisation. Answer lacks grammatical structure and contains many spelling errors.</p> <p>5-7 marks – There may be a range of strengths (2) and weaknesses (2) which are appropriate to the question, there may be some imbalance between the two. Discussion is good with some understanding and good expression. Description is reasonably effective and argument informed but limited. Some use of supporting examples. The answer has good structure and organisation. The answer is mostly grammatically correct with few spelling errors. Maximum mark of 7 for strengths or weaknesses only.</p> <p>8-10 marks – There is a good range of strengths (2 or more) and weaknesses (2 or more) which are appropriate to the question. There is a good balance between the two. Discussion is detailed with good understanding and clear expression. Description is effective and argument well informed. Appropriate use of supporting examples. The answer is competently structured and organised. Answer is mostly grammatically correct with occasional spelling errors.</p>	[10]

Section B		
Question Number	Answer	Marks
5	<p>Describe one ethical issue that the researcher needs to consider when conducting this observation and suggest how this could be dealt with.</p> <p>For full marks the issue needs to be discussed in the context of this observation rather than in general terms. Most likely answers will be lack of consent, invasion of privacy, confidentiality. Solutions are likely to be observing in a public place, asking for consent, avoiding recording personal details</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – an ethical issue has been identified but this has not been discussed in relation to this observation and there is no discussion of how the issue might be dealt with. 2 marks – an ethical issue has been identified and discussed in relation to this observation but there is no discussion of how the issue might be dealt with. Alternatively the candidate may have identified an issue and a solution but neither are discussed in relation to this observation (for example, simply stating lack of consent so ask for consent). 3 marks – an ethical issue has been identified and discussed in relation to this observation and there is some discussion of how this might be dealt with. This discussion is very brief and lacks detail. 4 marks – an ethical issue has been identified and discussed in relation to this observation. The way in which this issue might be dealt with is also discussed clearly.</p>	[4]
6(a)	<p>Explain what is meant by inter-rater reliability.</p> <p>Reliability means consistency. In terms of observational research, inter-rater reliability means that a number of observers observing the same things will code (or rate) them in the same way. Note: answers attempting to define reliability as 'how reliable something is' will not be awarded any marks.</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – reliability is defined but the answer is more general than inter-rater reliability, for example the candidate simply states that reliability means consistency. 2 marks – inter-rater reliability is defined clearly.</p>	[2]

Section B		
Question Number	Answer	Marks
6(b)	<p>Suggest how the researcher could ensure that this observation has inter-rater reliability.</p> <p>Most likely answers: use of more than one observer, training in use of coding scheme, clarification of categories, pilot study to test for agreement between observers.</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – A brief suggestion has been made but this is lacking in detail or clarity. There is no link to this observation. 2 marks - The suggestion is appropriate, clear and detailed but there is no link to this observation. 3 marks – The suggestion is appropriate, clear and detailed and the candidate has made some attempt to link this to this observation. Alternatively the suggestion may lack detail or clarity although the link to this observation has been made clear. 4 marks – The suggestion is appropriate, clear and detailed and there is a clear link this observation.</p>	[4]
Section B Total		[20]

Section C																								
Question Number	Answer	Marks																						
7(a)	<p>A researcher has conducted a correlational study to investigate the relationship between how good people think their memory is and how well they do on a memory test. The first variable was 'self rating of memory' and was measured by asking people to rate their memory on a 10 point scale (where 1 = very poor and 10 = excellent). The second variable was 'actual memory' and this was measured by showing them a video of a minor road accident and asking them a series of 10 eye-witness questions.</p> <p>Sketch an appropriately labelled scattergraph displaying the results. Scattergraph should look something like this:</p> <div data-bbox="459 698 1158 1227" data-label="Figure"> <p style="text-align: center;">A scattergraph to show the relationship between self rating of memory and actual memory</p> <table border="1"> <caption>Data points from the scattergraph</caption> <thead> <tr> <th>Self rating of memory</th> <th>Actual memory scores (10 max)</th> </tr> </thead> <tbody> <tr><td>3</td><td>5</td></tr> <tr><td>4</td><td>6</td></tr> <tr><td>5</td><td>4</td></tr> <tr><td>5</td><td>6</td></tr> <tr><td>6</td><td>7</td></tr> <tr><td>7</td><td>6</td></tr> <tr><td>7</td><td>8</td></tr> <tr><td>8</td><td>8</td></tr> <tr><td>9</td><td>7</td></tr> <tr><td>10</td><td>9</td></tr> </tbody> </table> </div> <p>0 marks – the candidate has not provided any creditworthy information or has drawn an inappropriate graph. 1 mark – appropriate scattergraph but no labelling. 2 marks – appropriate scattergraph but incomplete or unclear labelling. 3 marks – appropriate scattergraph but a slight lack of clarity, for example one label/scale missing or unclear. 4 marks – clear scattergraph with scales and both axes clearly labelled.</p>	Self rating of memory	Actual memory scores (10 max)	3	5	4	6	5	4	5	6	6	7	7	6	7	8	8	8	9	7	10	9	[4]
Self rating of memory	Actual memory scores (10 max)																							
3	5																							
4	6																							
5	4																							
5	6																							
6	7																							
7	6																							
7	8																							
8	8																							
9	7																							
10	9																							
7(b)	<p>Outline one conclusion that can be drawn from this scattergraph.</p> <p>The most obvious conclusion to draw from this scattergraph is that there is a positive correlation between people's self rating of memory and their actual score on a memory test.</p> <p>0 marks – the candidate has not provided any creditworthy information for example stating the conclusion in terms of cause and effect. 1 mark – some creditworthy material, but limited and/or lacking in clarity for example the candidate simply states that 'there is a positive correlation'. 2 marks – appropriate conclusion but lacking in clarity. 3 marks – appropriate clearly stated conclusion.</p>	[3]																						

Section C		
Question Number	Answer	Marks
8	<p>Suggest one problem with the way ‘self rating of memory’ has been measured in this investigation.</p> <p>There are a number of problems that could be identified: participants may interpret 1-10 scales differently, people may overestimate or underestimate their memory abilities for various reasons, ‘memory’ may be too broad a concept to assess like this (memory for faces, facts etc).</p> <p>0 marks – the candidate has not provided any creditworthy information. 1 mark – the candidate has identified an appropriate problem but there is a lack of detail and /or clarity. For example the candidate has simply stated ‘people may lie’. 2 marks – the candidate has suggested one problem with the way ‘self rating of memory’ has been measured and this has been clearly stated but not in relation to this investigation. 3 marks - the candidate has suggested one problem with the way ‘self-rating of memory’ has been measured and this has been clearly stated in relation to this investigation.</p>	[3]
9	<p>Describe and evaluate two other ways in which ‘actual memory’ might be measured</p> <p>0 marks – No or irrelevant answer. 1-4 marks – There may be some strengths and weaknesses which are peripheral to the question, or there may be an imbalance between the two. Discussion is limited with some understanding though expression may be poor or limited. Description is basic sometimes and argument just discernable. Sparse or no use of supporting examples. The answer has lacks structure and organisation. Answer lacks grammatical structure and contains many spelling errors. 5-7 marks – There may be a range of strengths (2) and weaknesses (2) which are appropriate to the question, there may be some imbalance between the two. Discussion is good with some understanding and good expression. Description is reasonably effective and argument informed but limited. Some use of supporting examples. The answer has good structure and organisation. The answer is mostly grammatically correct with few spelling errors. Maximum mark of 7 for strengths or weaknesses only. 8-10 marks – There is a good range of strengths (2 or more) and weaknesses (2 or more) which are appropriate to the question. There is a good balance between the two. Discussion is detailed with good understanding and clear expression. Description is effective and argument well informed. Appropriate use of supporting examples. The answer is competently structured and organised. Answer is mostly grammatically correct with occasional spelling errors.</p>	[10]
	Section C Total	[20]
	Paper Total	[60]

Assessment Objectives Grid (includes QWC)

Section A

Question	AO1	AO2	AO3	Total
1(a)	2		2	4
1(b)		2		2
2(a)			2	2
2(b)			2	2
2(c)	2		4	6
3			4	4
Total	4	2	14	20

Section B

Question	AO1	AO2	AO3	Total
4	2	2	6	10
5			4	4
6(a)	1		1	2
6(b)		1	3	4
Total	3	3	14	20

Section C

Question	AO1	AO2	AO3	Total
7(a)		1	3	4
7(b)	1	2		3
8			3	3
9	2	2	6	10
Totals	3	5	12	20