



**GCE**

**Psychology**

Unit **G541**: Psychological Investigations

Advanced Subsidiary GCE

**Mark Scheme for June 2016**

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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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## 1. Annotations

Annotation	Meaning
	Unclear
	Attempts evaluation
	Benefit of doubt
	Context
	Cross
	Evaluation
	Extendable horizontal line
	Extendable horizontal wavy line
	Significant amount of material which doesn't answer the question
	Not answered question
	Good use of resources
	Tick
	Development of point
	Omission mark

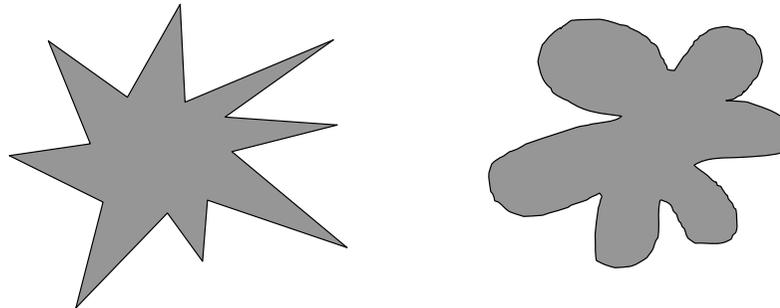
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## Section A

A psychologist wants to investigate how symbols influence the way we think. Using the self report method, participants will be shown the two shapes below and asked which one they think is called “ziki” and which one “soso”.



<b>1. Explain the difference between open and closed questions in this study. [4]</b>		
An open question is one in which individuals can respond in any way they like and are not restricted discussing the symbols in any way. A closed question is one in which individuals select their response from a choice of predetermined options about shapes.		
<b>Marks</b>	<b>Answer</b>	<b>Additional Guidance</b>
2 marks for strength, 2 marks for weakness		
<b>2 marks</b>	Clear description of what is meant by an open/closed question in context	-Context = shapes, think/thinking, symbols, ziki, soso
<b>1 mark</b>	Clear description of what is meant by the open/closed question but not in context <b>OR</b> Description of what is meant by an open/closed question in context but lacking clarity.	
<b>0 marks</b>	The candidate has not provided any creditworthy information	

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2. Outline <b>one</b> strength and <b>one</b> weakness of using closed questions in this study. [4]		
Strengths include: easier to analyse; easier to present data; easier to make comparisons across participants about the shapes. Weaknesses include: lack of qualitative data; lack of insight about why people have named the shapes as they have; there may not be an appropriate option (e.g. 'other')		
Marks	Answer	Additional Guidance
2 marks for strength, 2 marks for weakness		
2 marks	Clear outline of the strength/weakness in context	-Context = shapes, think/thinking, symbols, ziki, soso
1 mark	Clear outline of strength/weakness but not in context <b>OR</b> attempt to outline strength/weakness in context	
0 marks	The candidate has not provided any creditworthy information	

3(a) Identify how qualitative data could be obtained in this study. [3]		
Qualitative data could be obtained by asking open questions, for example about the reasons why the shapes were given the names that they were.		
Marks	Answer	Additional Guidance
3 marks	Clear identification of how qualitative data could be obtained in context	-Context = shapes, think/thinking, symbols, ziki, soso
2 marks	Clear identification of how qualitative data could be obtained but not in context <b>OR</b> attempt to identify how qualitative data could be obtained in context but lacks clarity	
1 mark	Attempt to identify how qualitative data could be obtained but lacks detail	
0 marks	The candidate has not provided any creditworthy information	

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3(b) Outline <b>one</b> strength and <b>one</b> weakness of having qualitative data in this study. [6]		
<b>Strengths</b> include: In-depth data obtained; greater insight (e.g. into the reasons why people attribute certain names to some shapes and not others)		
<b>Weaknesses</b> include: difficult to classify responses; difficult to interpret/understand responses to questions about symbols		
Marks	Answer	Additional Guidance
3 marks for strength, 3 marks for weakness		
3 marks	Strength/weakness clearly outlined in detail and in the context of the research outlined in the source material	-Context = shapes, think/thinking, symbols, ziki, soso
2 marks	Strength/weakness clearly outlined but not in the context of the research outlined in the source material	
	<b>OR</b> Clear, brief outline of strength/weakness in the context of the research outlined in the source material	
1 mark	Attempt to outline strength/weakness (whether in the context or not)	
0 marks	The candidate has not provided any creditworthy information	

4. Outline how participants could be recruited for this study using self selected sampling. [3]		
Self selected sampling is any technique in which participants come forward themselves to take part in the research on shapes. This could be in response to a poster displayed in a public place or an advert placed in a newspaper.		
Marks	Answer	Additional Guidance
3 marks	Clear and detailed outline of how participants could be obtained using self-selected sampling in context	-Context = shapes, think/thinking, symbols, ziki, soso
2 marks	Clear outline of how participants could be obtained using self-selected sampling but not in context	
	<b>OR</b> Clear, brief outline of how participants could be obtained using self-selected sampling in context	
1 mark	Attempt to outline how participants could be obtained using self-selected sampling (whether in context or not)	
0 marks	The candidate has not provided any creditworthy information	

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## Section B

A psychologist investigated selective attention using a laboratory experiment. Participants wore headphones through which a different nursery rhyme was played to each ear at the same time. Afterwards the participants were asked 15 true or false questions relating to the content of the nursery rhymes. The psychologist was interested in the difference in how men and women performed in this task.

5. Identify the experimental design used in this study. [2]		
The experimental design used is independent measures design		
Marks	Answer	Additional Guidance
2 marks	Experimental design clearly identified	-The experimental design used is an 'independent measures design' (IMD). -Also accept the term 'between subjects design'. -Stating 'lab expt = zero -Stating 'different subjects design' = 1 -Simply stating IMD = 1
1 mark	Attempt to identify the experimental design (e.g. simply saying 'independent')	
0 marks	The candidate has not provided any creditworthy information	

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6. Outline <b>one</b> strength and <b>one</b> weakness of using a laboratory experiment in this study. [6]		
<p><b>Strengths</b> include: control (e.g. same nursery rhymes used for each participant, heard in the same way through headphones etc); standardisation (e.g. of the environment and way tested etc); easy to monitor and record the DV (e.g. how well the nursery rhyme from each ear was comprehended) etc</p> <p><b>Weaknesses</b> include: Lack of ecological validity as we do not usually listen to nursery rhymes played through headphones; generalisation of findings to real life difficult; possible demand characteristics; etc</p>		
Marks	Answer	Additional Guidance
3 marks for strength, 3 marks for weakness		
3 marks	Strength/weakness clearly outlined in detail and in context	- Context = attention, nursery rhyme(s), headphones, 'true or false questions' ('questions' not sufficient for context)
2 marks	Strength/weakness clearly outlined in detail but not in context <b>OR</b> Clear, brief outline of strength/weakness in context	
1 mark	Attempt to outline strength/weakness (whether in the context or not)	
0 marks	The candidate has not provided any creditworthy information	

7. Identify the independent variable (IV) and dependent variable (DV) in this study. [2]		
The IV is sex/gender of the participant (male or female) and the DV is attention (also accept 'concentration', and operational detail of the DV - memory for details of nursery rhymes heard or score on the 15 true or false questions)		
Marks	Answer	Additional Guidance
2 marks	Both variables correctly identified	-Zero if IV and DV not labelled/differentiated, or referred to incorrectly.  -There must be clarity in what is IV and what is DV (e.g. 'scores for males and females out of 15' is NOT creditworthy)
1 mark	One variable correctly identified	
0 marks	The candidate has not provided any creditworthy information	

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8. Suggest an appropriate one-tailed alternate hypothesis that could have been used in this study. [4]				
For example ... <i>males will have better attention for two nursery rhymes played simultaneously in each ear than females</i>				
Marks	Answer	Additional Guidance		
4 marks	The candidate has written a clearly stated appropriate one-tailed alternate hypothesis referring to both variables	- Context = attention, nursery rhyme(s), 'true or false questions' ('questions' not sufficient for context)  -If two-tailed hypotheses or null hypotheses given anywhere in the response (unless <b>clearly</b> labelled) = zero  -The variables do not have to be fully operationalized for maximum marks		
3 marks	The candidate has written an appropriate one-tailed alternate hypothesis referring to both variables, but there is a lack of clarity about one of the variables or both			
2 marks	The candidate has written an appropriate one-tailed alternate hypothesis but has only referred to one variable			
1 mark	<table border="1"> <tr> <td>The candidate has written a one-tailed alternate hypothesis without reference to either variable (e.g. has simply stated something like ... 'one group will perform better (or worse) than the other').</td> <td><b>OR</b> both variables clearly referred to but a general lack of clarity of the way the hypothesis is stated</td> </tr> </table>		The candidate has written a one-tailed alternate hypothesis without reference to either variable (e.g. has simply stated something like ... 'one group will perform better (or worse) than the other').	<b>OR</b> both variables clearly referred to but a general lack of clarity of the way the hypothesis is stated
The candidate has written a one-tailed alternate hypothesis without reference to either variable (e.g. has simply stated something like ... 'one group will perform better (or worse) than the other').	<b>OR</b> both variables clearly referred to but a general lack of clarity of the way the hypothesis is stated			
0 marks	The candidate has not provided any creditworthy information			

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9(a) Explain what is meant by the descriptive statistic called the mean. [2]		
The mean is the arithmetic average that indicates the calculated central score in a data set.		
Marks	Answer	Additional Guidance
2 marks	Clear explanation of what the mean is	-A detailed description of how to calculate the mean = 2 marks  -average/central tendency =1 mark
1 mark	Attempt to explain what the mean is but unclear	
0 marks	The candidate has not provided any creditworthy information	

9(b) Explain how the mean would be calculated for the men and women in this study. [4]		
The mean is obtained by summing all the scores in a data set and dividing by the number of entries constituting the data set. Scores out of 15 for details of the nursery rhymes for males added up and divided by the number of males who participated provides the mean for males, and scores out of 15 for details of the nursery rhymes for females added up and divided by the number of females who participated provides the mean for the females.		
Marks	Answer	Additional Guidance
4 marks	Clear explanation of how the mean would have been calculated for both the males and females in context	- Context = attention (accept concentration), nursery rhyme(s), 'true or false questions' ('questions' not sufficient for context)  Explanation of how to calculate the <b>overall</b> mean for males and females <b>together</b> = max 3 marks
3 marks	Explanation of how the mean would have been calculated for both the males and females in context but lacks some clarity (e.g. clear for males but not for females)	
2 marks	Explanation of how the mean would have been calculated with reference to the study (e.g. gender, males/females, men/women, questions, out of 15)	
1 mark	General explanation of how the mean is calculated	
0 marks	The candidate has not provided any creditworthy information	
		<b>OR</b> Attempt to explain how the mean would have been calculated with reference to the study (e.g. gender, males/females, men/women, questions, out of 15)

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## Section C

Emotions are strange. Sometimes people enjoy feeling sad! To investigate this a psychologist conducted a correlation study assessing how people felt after watching a sad film. Each person was asked to rate on a 20-point scale how much they enjoyed the film (1 = not very much, 20 = very much) and how sad it made them feel (1 = not very sad, 20 = very sad). The findings from the study are presented in the table (10.1) below.

Participant	Rating of how much the film was enjoyed	Rating of how sad the film made the participant feel
1	16	18
2	5	6
3	10	12
4	12	10
5	2	2
6	13	15
7	4	19
8	6	8
9	9	9
10	7	3

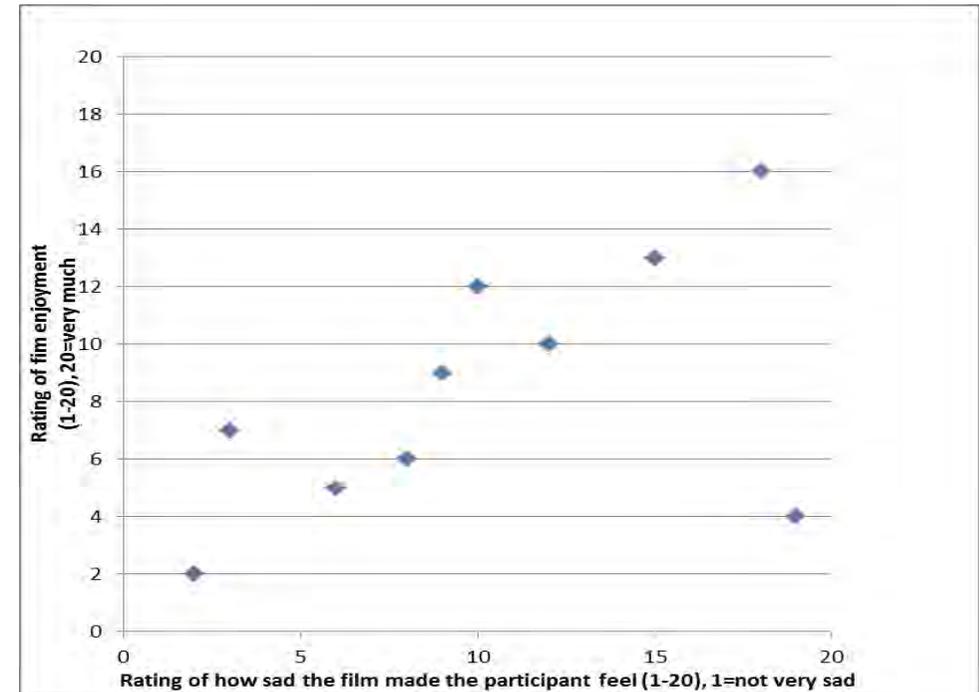
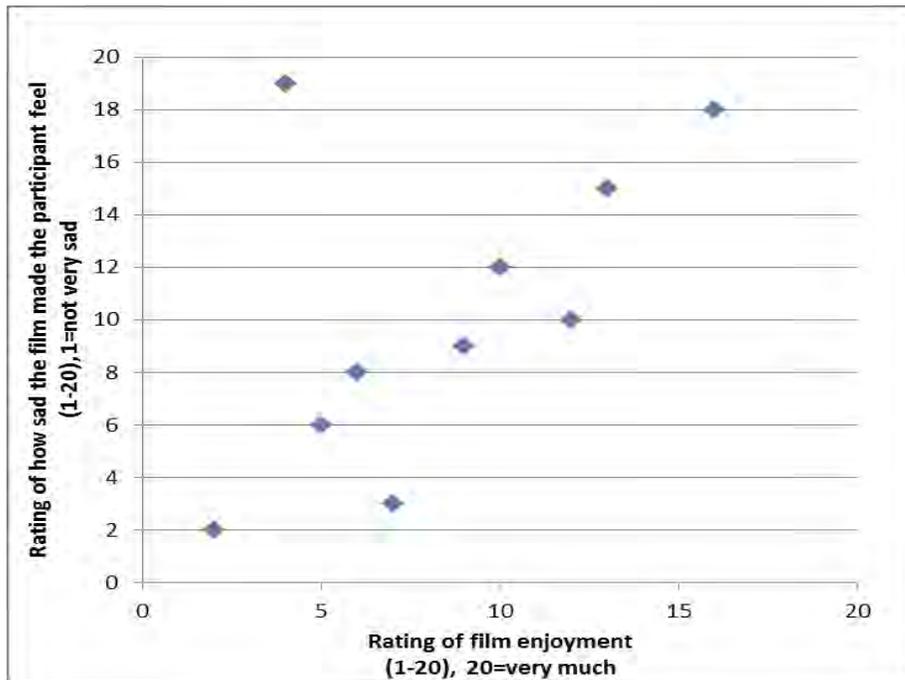
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<b>10. Outline two findings from the data in Table 10.1. [4]</b>		
Findings could include: ratings of how much people enjoyed the film ranged from 2-16; Ratings of how sad the film made people feel ranged from 2-19; The highest rating for enjoying the film was 16; highest rating for how sad the film made someone feel was 19, lowest rating for sadness is 2, lowest rating for enjoyment is 2, participant 7's result was anomalous/outlier (sadness rated as 19 but enjoyment as 4), positive correlation between sadness and enjoyment.		
<b>Marks</b>	<b>Answer</b>	<b>Additional Guidance</b>
2 marks for each finding		
<b>2 marks</b>	Finding clearly identified in context	-Context = sad (sadness), film, movie, enjoy (enjoyment), emotion
<b>1 mark</b>	Finding identified, but could be clearer	
<b>0 marks</b>	The candidate has not provided any creditworthy information	-Possible descriptive statistics to accept Variable 1 (how sad film made people feel) Total ratings = 102, Mean = 10.2, Median = 9.5, Mode N/A  Variable 2 (how much people enjoyed film) Total ratings = 84, Mean = 8.4, Median = 8, Mode N/A

11. Sketch an appropriately labelled scattergraph displaying the results of this study. [4]



Marks	Answer	Additional Guidance
4 marks	Appropriate graph with clear labelling on both axes	-Context = sad (sadness), film, movie, enjoy (enjoyment), emotion
3 marks	Appropriate graph, but a slight lack of clarity (e.g. labelling on one axis is inaccurate or unclear but OK on the other)	-A title is not necessary for full marks, providing there is sufficient clarity in the labelling of the axes to convey what the study is about.
2 marks	Appropriate graph but incomplete, inaccurate in more than one way or unclear labelling in more than one way	-For full marks <b>both</b> axes must be labelled to indicate what ends of scale mean e.g. 20= very sad
1 marks	Appropriate graph, but no labelling	-if no points are plotted = zero
0 marks	The candidate has not provided any creditworthy information	-If the points have been joined (dot-to-dot) then zero marks. -Best fit line not required

12. Evaluate the reliability and validity of the way in which the psychologist measured how sad the film made people feel. [10]				
<p>For both reliability and validity positive and/or negative evaluation issues are acceptable.  Comments about reliability could include use of the same scale (1 to 20) with clearly defined ends so should be easy to use in the same way by each participant; possible differences in the way each number on the scale is interpreted by participants; use of the same film.  Comments about validity could include: potential dishonesty of participants when selecting a number; demand characteristics (picking a number to please/upset the researcher/not appear sad/appear more sad than they actually are etc); the numerical scale allows the extent of participants sadness to be assessed; difficult to express sadness just in a quantitative way.</p>				
Marks	Answer		Additional guidance	
9-10 marks	Clear evaluation of <b>both</b> the reliability and validity in context. <b>Note:</b> For 10 marks all evaluation points discussed must be correctly labelled with no confusion between the two.		- Context = sad (sadness), film, movie	
7-8 marks	Clear evaluation of the reliability in context and an attempt at evaluation of the validity (just 7 if attempt not in context)	<b>OR</b> Clear evaluation of the validity in context and an attempt at evaluation of the reliability (just 7 if attempt not in context)	NB. Reference to anything other than the sadness rating is not creditworthy	
5-6 marks	Clear evaluation of reliability <b>or</b> validity in context	<b>OR</b> Clear evaluation of <b>both</b> reliability and validity, but not in context (if only one clear = 5 marks)		<b>OR</b> attempt to evaluate <b>both</b> reliability and validity in context (only one in context is awarded 5)
3-4 marks	General attempt to evaluate both reliability and validity	<b>OR</b> attempt to evaluate reliability or validity in context		
1-2 marks	General attempt to evaluate reliability	<b>OR</b> General attempt to evaluate validity		
0 marks	The candidate has not provided any creditworthy information			

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13. Explain what a positive correlation is in this study. [2]		
A positive correlation is where the values of both variables (sadness and enjoyment) increase at the same time, although not necessarily at the same rate		
Marks	Answer	Additional Guidance
2 marks	Clear explanation of what a positive correlation is in context	-Context = sad (sadness), film, movie, enjoy (enjoyment), emotion
1 mark	Attempt to explain what a positive correlation is, but lacks clarity (whether in context or not)	
0 marks	The candidate has not provided any creditworthy information	-Accept for one mark an appropriate sketch of a positive correlation presented on it's own.  -Any reference to DV = zero  -Any reference to effect/affect of one variable on another = zero

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