GCE

Psychology

Unit **G541**: Psychological Investigations

Advanced Subsidiary GCE

Mark Scheme for June 2017

These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Annotation	Meaning
?	Unclear
AE	Attempts evaluation
BOD	Benefit of doubt
CONT	Context
✖	Cross
EVAL	Evaluation
▭	Extendable horizontal line
∿	Extendable horizontal wavy line
IRRL	Significant amount of material which doesn't answer the question
NAQ	Not answered question
RES	Good use of resources
✔	Tick
✔+	Development of point
^	Omission mark

Section A

Eye love you. Psychologists investigated if people are perceived as more attractive if the pupil of their eye is dilated (large) compared to constricted (small). To do this they asked male participants to rate a photograph of a female on a scale of 1 (not attractive at all) to 12 (extremely attractive). In one condition the pupils of the eyes of the female were dilated, whereas in the other condition the pupils (of the same female) were constricted. Two different groups of 16 males participated in each condition.

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

2. Outline **one** strength and **one** weakness of using a laboratory experiment in this study. **[6]**

Strengths include: control (e.g. same photo of female used in each condition, accurate manipulation of pupil size, same viewing conditions of photograph of the female shown etc). Easy to monitor and record the DV (e.g. ratings of attractiveness), shows cause and effect (effect of IV – pupil size on DV – ratings of attractiveness, etc.

Weaknesses include: Lack of ecological validity; generalization of findings to real life difficult; possible demand characteristics; etc

Marks	Answer		Additional Guidance
3 marks for strength, 3 marks for weakness			
3 marks	Strength/weakness clearly outlined but in the context of the research outlined in the source material.		-Context = attractiveness, eyes, pupils, photographs of female, dilated, constricted, etc
2 marks	Strength/weakness clearly outlined but not in the context of the research outlined in the source material.	**OR** attempt to outline strength/weakness in the context of the research outlined in the source material.	
1 mark	Attempt to outline strength/weakness but in general, not in the context of the research outlined in the source material.		
0 marks	The candidate has not provided any creditworthy information		

3. Identify the independent variable (IV) and dependent variable (DV) in this study. **[2]**

The IV is the size of the pupil of the eye (operationalized as dilated or constricted), and the DV is how attractive the female is perceived to be(operationalized as a rating scale 1 (not attractive at all) to 12 (extremely attractive).

Marks	Answer	Additional Guidance
2 marks	Both variables correctly identified	-Context = attractiveness, eyes, pupils, photographs of female, dilated, constricted, etc.
1 mark	One variable correctly identified	
0 marks	The candidate has not provided any creditworthy information	-Zero if IV and DV not labelled/differentiated, or referred to incorrectly
		-Operational detail not required for full marks

4. Suggest an appropriate one-tailed alternate hypothesis that could have been used in this study. **[4]**

For example … *the woman in the photograph with dilated pupils will be perceived as more attractive than the woman in the photograph with constricted pupils*

Marks	Answer		Additional Guidance
4 marks	The candidate has written a clearly stated appropriate one-tailed alternate hypothesis referring to both variables		-Context = attractiveness, eyes, pupils, photographs of female, dilated, constricted, etc
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	**OR** both variables clearly referred to but a general lack of clarity of the way the hypothesis is stated	-Two-tailed hypotheses (however well cited) = zero
2 marks	The candidate has written an appropriate one-tailed alternate hypothesis but has only referred to one variable		-If both a one-tailed alternate and null hypothesis is presented and it is not made clear which is which then = zero
1 mark	The candidate has written a one-tailed alternate hypothesis without reference to either variable (e.g. has simply stated something like … 'one condition will be rated differently to the other').		-The variables do not have to be *fully* operationalized for maximum marks
0 marks	The candidate has not provided any creditworthy information		

5(a) Explain what is meant by the descriptive statistic called the mean. **[2]**

The mean is the arithmetic average that indicates the typical score in a data set.

Marks	Answer	Additional Guidance
2 marks	Clear explanation of what the mean is	-Example of 'attempt but unclear' = where a candidate just says 'the average'. Also accept a description of how to calculate the mean
1 mark	Attempt to explain what the mean is but unclear	
0 marks	The candidate has not provided any creditworthy information	

5(b) Explain how the mean would be calculated for each condition of 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. Ratings out of 12 for the woman in the photograph with dilated pupils will be added up and divided by 16, and then the ratings out of 12 for the woman in the photograph with constricted pupils will be added up and divided by 16.

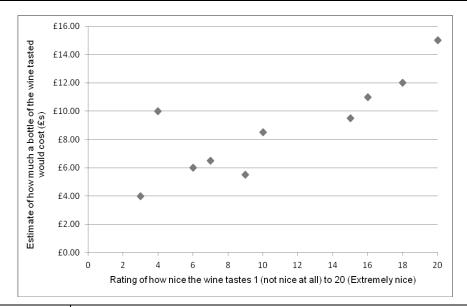| Marks	Answer		Additional Guidance
3-4 marks	Clear explanation of how the mean would have been calculated for each condition of the study		-Context = attractiveness, eyes, pupils, photographs of female, dilated, constricted, etc. *Note: candidates who have answered 5(a) as 5(b) cannot be credited again if they have just given a general explanation of how to calculate the mean
2 marks	Clear, but general explanation of how the mean is calculated	**OR** attempt to explain how the mean would have been calculated in this study, but lacks some clarity	
1 marks	Attempt to explain how the mean would have been calculated, but not in context of the information in the source material		
0 marks	The candidate has not provided any creditworthy information		

Section B

Expensive tastes? Psychologists conducted a study to investigate if there was a correlation between how much a bottle of wine costs and how nice it tastes. Each participant was first given a small glass of wine and asked to rate how nice it tasted on a scale 1 (not nice at all) to 20 (extremely nice). Then they were asked to suggest how much they would have to pay for a bottle of the wine. The findings from the study are presented in the table below.

6. Outline two findings from the data in this table. [4]		
Findings could include: in general, the nicer the wine was rated to taste the more expensive the price was estimated to be; there is an anomaly in that someone only rated the wine as 4, but suggested it cost quite a lot (£10). (participant 3) The highest rating was 20 for how nice it tastes with the highest price for the bottle of wine (£15). (participant 4) The lowest rating was 3 for how nice the wine will taste with the lowest price for the bottle of wine (£4)		
Marks	**Answer**	**Additional Guidance**
2 marks for each finding		
2 marks	Finding clearly identified in context	-Context = price of a bottle of wine and or how nice the wine tastes
1 mark	Finding identified, but could be clearer	
0 marks	The candidate has not provided any creditworthy information	-Possible descriptive statistics to accept as findings ... Mean taste rating = 10.8, median = 9.5 Mean estimated price of wine = £8.80, median = £9.00

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

Participant	Rating of how nice the wine tasted	Estimate of how much the bottle of wine cost
1	18	£12.00
2	7	£6.50
3	20	£15.00
4	3	£4.00
5	6	£6.00
6	9	£5.50
7	16	£11.00
8	10	£8.50
9	4	£10.00
10	15	£9.50

Marks	Answer	Additional Guidance
4 marks	Appropriate graph with clear labelling on both axes	-Context = price of a bottle of wine and or how nice the wine tastes
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)	-Note scales on axes do not have to start at zero (given the data plotted it may be preferable to commence a scale
2 marks	Appropriate graph but incomplete, inaccurate in more than one way or unclear labelling in more than one way	commensurate to the data obtained). However, it is acceptable to commence scales at zero, providing all the
1 mark	Appropriate graph, but no labelling	necessary data is plotted
0 marks	The candidate has not provided any creditworthy information	-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 (equally, a title can help clarify otherwise unclear labelling of axes)

8. Evaluate the reliability and validity of the way that the psychologist measured how nice the wine tasted. **[10]**

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 wine to taste by each participant.

Comments about validity could include: potential dishonesty of participants when selecting a number; demand characteristics (picking a number much higher, or lower than they really think the wine tastes like to go against what they think the researchers are predicting etc); the numerical scale allows the extent of participants perceptions about the taste of the wine to be assessed; difficult to express taste preference just in a quantitative way.

Marks	Answer			Additional guidance
9-10 marks	Clear evaluation of both the reliability and validity of how taste was measured in the context of the information provided in the source material			-Context = price of a bottle of wine and or how nice the wine tastes, not nice and extremely nice.
7-8 marks	Clear evaluation of the reliability of how taste was measured in the context of the information in the source material and an attempt at evaluation of the validity	**OR** clear evaluation of the validity of how taste was measured in the context of the information in the source material and an attempt at evaluation of the reliability		
5-6 marks	Clear evaluation of the reliability of how taste was measured in the context of the information in the source material	**OR** clear evaluation of the validity of how taste was measured in the context of the information in the source material	**OR** attempt to evaluate both reliability and validity of how taste has been measured in context (only one in context is awarded 5)	
3-4 marks	General attempt to evaluate both the reliability and validity of how taste was measured	**OR** attempt to evaluate reliability or validity of how taste was measured in context of the information in the source material.		
1-2 marks	General attempt to evaluate the reliability of how taste was measured	**OR** general attempt to evaluate the validity of how taste was measured		
0 marks	The candidate has not provided any creditworthy information			

9. Explain what is meant by no correlation. **[2]**		
No correlation is where there is no relationship between either of the two variables		

Marks	Answer	Additional Guidance
2 marks	Clear explanation of what no correlation is	-Accept for one mark an appropriate sketch of no correlation
1 mark	Attempt to explain what no correlation is, but lacks clarity	
0 marks	The candidate has not provided any creditworthy information	-Merely a reference to no relationship gains only one mark
		-Any reference to DV = not creditworthy
		-Any reference to *effect / affect* of one variable on another = not creditworthy
		-Use of word 'link'/'association' lacks clarity.

Section C

Happy hour. Psychologists want to use the self report method to investigate what time of a person's life they have felt the happiest and why. For some people this may be when they were young, for others when they were older. It may also depend on what type of job the person had at the time etc.

10. Explain the difference between open and closed questions in this study. **[4]**		
An open question is one in which individuals can respond in any way they like and are not restricted in any way. A closed question is one in which individuals select their response from a choice of predetermined options.		
Marks	**Answer**	**Additional Guidance**
4 marks	Clear explanation of the difference with clear distinction between open and closed questions in context	-Context = happy / happiness, younger and older (or age), type of job and time-of-life
3 marks	Clear explanation of the difference with clear distinction between open and closed questions but only open questions in context	**OR** clear explanation of the difference with clear distinction between open and closed questions but only closed questions in context
2 marks	Clear explanation of the difference with clear distinction between open and closed questions but not in context	Some credit can be given for examples but not if just examples are given on their own to achieve above 1 mark.
1 mark	Attempt to explain the difference between open and closed questions but lacks some clarity	
0 marks	The candidate has not provided any creditworthy information	

11. Outline **one** strength and **one** weakness of using questions involving a rating scale in this study. **[4]**

Strengths include: obtain a quantitative measure of happiness; can assess extent of happiness; make comparisons across other people more easily; quick and easy way of gathering data on happiness

Weaknesses include: lack of qualitative data; lack of insight about why people experienced happiness, middle answer bias etc

Marks	Answer		Additional Guidance
2 marks for strength, 2 marks for weakness			
2 marks	Clear outline of the strength/weakness in context		- Context = happy / happiness, younger and older (or age), type of job and time-of-life
1 mark	Clear outline of strength/weakness but not in context	**OR** attempt to outline strength/weakness in context	
0 marks	The candidate has not provided any creditworthy information		

12(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 people felt happy at different times of their life.

Marks	Answer		Additional Guidance
3 marks	Clear identification of how qualitative data could be obtained in context		- Context = happy / happiness, younger and older (or age), type of job and time-of-life
2 marks	Clear identification of how qualitative data could be obtained but not in context	**OR** attempt to identify how qualitative data could be obtained in context but lacks detail	
1 mark	Attempt to identify how qualitative data could be obtained but lacks detail		
0 marks	The candidate has not provided any creditworthy information		

12(b) Outline **one** strength and **one** weakness of having qualitative data in this study. **[6]**		
Strengths include: more in depth data to assess; greater insight (e.g. into the reasons why people felt happy at different times of their lives)		
Weaknesses include: difficult to classify responses; difficult to interpret / understand responses		
Marks	**Answer**	**Additional Guidance**
3 marks for strength, 3 marks for weakness		
3 marks	Strength/weakness clearly outlined but in the context of the research outlined in the source material.	- Context = happy / happiness, younger and older (or age), type of job and time-of-life
2 marks	Strength/weakness clearly outlined but not in the context of the research outlined in the source material.	**OR** attempt to outline strength/weakness in the context of the research outlined in the source material.	
1 mark	Attempt to outline strength/weakness but in general, not in the context of the research outlined in the source material.	
0 marks	The candidate has not provided any creditworthy information	

13. Outline how participants could be obtained for this study using opportunity sampling. **[3]**		
Opportunity sampling is making use of people who are freely and readily available. This could simply be asking a number of family members, and/or friends, or work colleagues etc. It could also involve going to a public place, such as a shopping mall and asking whoever happens to be there at that particular time etc		
Marks	**Answer**	**Additional Guidance**
3 marks	Clear outline of how participants could be obtained using opportunity sampling in context	- Context = happy / happiness, younger and older (or age), type of job and time-of-life
2 marks	Clear outline of how participants could be obtained using opportunity sampling but not in context	**OR** attempt to outline of how participants could be obtained using opportunity sampling in context	
1 mark	Attempt to outline how participants could be obtained using opportunity sampling but lacks clarity / detail	-For full marks the technique used to obtain an opportunity sample needs to be clearly described (it is not sufficient just to say something like ..."people around at the time"
0 marks	The candidate has not provided any creditworthy information	

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