

Psychology

General Certificate of Secondary Education

Unit **B543**: Research in Psychology

Mark Scheme for June 2011

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Section A – PLANNING, DOING AND ANALYSING RESEARCH			
The Source			
Question Number	Expected Answer	Marks	Rationale
1	<p>Give the aim of the study in the Source.</p> <p>1 mark for ‘to investigate whether eating breakfast affects reaction time’, or similar response.</p>	Max [1]	<p>Allow ‘catch the ruler’ for reaction time.</p>
2	<p>State a null hypothesis for this study.</p> <p>1 mark for identifying that this hypothesis <i>predicts</i> no difference. 1 mark for the accurate identification of <i>both</i> variables (eg ‘there will be no (significant) difference [1] in the reaction time of participants who have eaten breakfast, and those who have not [1]’, or ‘Eating or not eating breakfast [1], will have no affect on reaction time in the ruler test [1]’, or ‘Eating or not eating breakfast will not affect [1] how quickly the participants could catch the ruler. [1]’)</p>	Max [2]	<p>For full marks it has to be a prediction, not a question/aim or statement.</p> <p>NB: an incorrect hypothesis (i.e. a directional one) with both variables correctly stated can achieve 1 mark.</p> <p>Refer to eating breakfast (or not) and reaction (ruler test) for both variables.</p>
3	<p>The psychologist used a self-selecting sample of volunteers. Name one other sampling method.</p> <p>Most likely answer is opportunity sample or random sample – 1 mark for the accurate identification of one sampling method.</p>	Max [1]	<p>Do not allow definitions or examples of as the question asks for the name of the sampling method.</p> <p>Allow quota, stratified and systematic sampling.</p>

Section A – PLANNING, DOING AND ANALYSING RESEARCH			
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Question Number	Expected Answer	Marks	Rationale
4	<p>Using the diagram below: Identify the independent variable and the dependent variable in the source. Draw a line from each box in the A column to the correct box in the B column.</p> <p style="text-align: center;">A</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; height: 40px; margin-bottom: 10px;">Independent variable</div> <div style="border: 1px solid black; padding: 5px; width: 200px; height: 40px; margin-bottom: 10px;">Participants being tested individually</div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; height: 40px; margin-bottom: 10px;">Dependent variable</div> <div style="border: 1px solid black; padding: 5px; width: 200px; height: 40px; margin-bottom: 10px;">Mean time taken to catch the ruler</div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; width: 150px; height: 40px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; padding: 5px; width: 200px; height: 40px; margin-bottom: 10px;">Eaten or not eaten breakfast</div> </div>	Max [2]	If two lines are drawn from the same response in box in A, that response is uncreditworthy.
5	<p>Name the type of data collected in this study. Tick one box to show your answer</p> <p>Qualitative <input type="checkbox"/> Quantitative <input checked="" type="checkbox"/></p>	Max [1]	

Section A – PLANNING, DOING AND ANALYSING RESEARCH			
The Source			
Question Number	Expected Answer	Marks	Rationale
6	<p>Outline the findings from the study in the source.</p> <p>1 mark for a vague answer that restates the results, (eg 'Reaction time was faster for participants who had eaten breakfast' [1], or 'eating breakfast does affect reaction time' [1].</p> <p>2 marks for an accurate <i>interpretation</i> of the results, (eg 'Eating breakfast does affect reaction time [1] as participants who had eaten it were faster at catching the ruler in the ruler test than participants who had not eaten any food' [1].</p>	Max [2]	For full marks the candidate must go beyond simply restating the results.
7	<p>Explain why each participant was tested individually in this study.</p> <p>1 mark for recognising that this was a form of control 1 mark for elaboration (ie <i>how</i> it acted as a control).</p> <p>For example 'participants were tested on their own as a control [1] so that nothing else like noise affected their reaction time [1]' or 'if the participants were all tested together, they could have been distracted [1], testing them alone meant nothing else affected their reaction time.' [1]</p>	Max [2]	<p>The word 'control' need not be in the response just an understanding of the concept.</p> <p>Any response that refers to making it easier for the psychologist to collect the data = 1 mark.</p> <p>For the second mark, the elaboration of how it acted as a control may or may not come from the source material.</p>

Section A – PLANNING, DOING AND ANALYSING RESEARCH			
The Source			
Question Number	Expected Answer	Marks	Rationale
8 (a)	<p>Describe one strength of using an independent groups design in this study.</p> <p>1 mark for correctly identifying a strength of the experimental design; most likely answers will refer to the absence of order or practice effects or to reduced chance of demand characteristics. 1 mark for elaboration, saying why it is a strength <i>in context of this study</i>.</p> <p>For example ‘one strength of an independent groups design is that no practice effects will occur [1]. In this study everyone only takes part in one condition so that they do not get better at the ruler test second time round [1]’ or ‘one strength of an independent groups design is that demand characteristics are less likely to occur [1] because participants are only taking part in one condition, they shouldn’t be as likely to guess that the experiment is about reaction time. [1]’</p>	Max [2]	To gain full marks, the response must be placed in context of this investigation (for example: relating to reaction time, the ruler test, eating breakfast).
8 (b)	<p>The psychologist used an independent groups design in this study. Name one other experimental design the psychologist could have used.</p> <p>1 mark for the identification of one other experimental method (e.g. repeated measures or matched pairs).</p>	Max [1]	Do not allow definitions or examples of, as the question asks for the name of the experimental design.

Section A – PLANNING, DOING AND ANALYSING RESEARCH			
The Source			
Question Number	Expected Answer	Marks	Rationale
9 (a)	<p>The psychologist used a laboratory experiment. Explain what is meant by a laboratory experiment.</p> <p>1 mark for vague answers or an answer which identifies that an experiment has an independent and dependent variable (note the answer does not need to use the exact terms) 1 mark for identifying that a laboratory experiment takes place in an artificial environment and is highly controlled.</p> <p>For example, ‘a laboratory experiment is a controlled experiment [1] where the researcher tests one or more variables to see the effect on another [1]’ or, ‘a laboratory experiment is where the researcher tests the effects of variables [1] in an artificially controlled environment. [1]’</p>	Max [2]	<p>Note: 0 marks for answers that repeat the question, for example ‘...is a study done in a laboratory’</p> <p>Responses referencing ‘artificial environment’ with the absence of control = 0 marks</p> <p>Credit is given for artificiality is given in 9b, as it is evaluative.</p>
9 (b)	<p>Describe one disadvantage of using a laboratory experiment for this study.</p> <p>1 mark for identifying a disadvantage of the laboratory experiment as a method in psychology. 1 mark for placing the disadvantage in context of this study,</p> <p>For example, ‘a disadvantage of the laboratory experiment is that it is carried out in an artificial environment [1]. In this experiment, the participant’s reaction time was measured using a ruler test, this is not the sort of thing that happens in normal life’ [1] or ‘one disadvantage is that they are low in ecological validity [1], a ruler test is not a realistic test of reaction time’ [1].</p>	Max [2]	<p>To gain full marks, the response must be placed in context of this investigation. For example a response which states ‘a disadvantage of the laboratory experiment is that it is low in ecological validity and so the results are not true to life’ would achieve 1 mark as it is not contextualised to the source material.</p>

Section A – PLANNING, DOING AND ANALYSING RESEARCH The Source			
Question Number	Expected Answer	Marks	Rationale
10 (a)	<p>State one extraneous variable that could have occurred in this study.</p> <p>1 mark for the identification of any feasible extraneous variable that pertains to this study. Most likely answers will include: no control for the amount of breakfast eaten, they may have eaten more or less than the others in their group. No way of checking whether the participants who were not supposed to eat breakfast had actually eaten breakfast. No control for the type of food eaten for breakfast; some may have eaten a cooked breakfast, others just cereals. Other factors may have affected reaction time other than the IV, for example amount of caffeine if they had drunk coffee or tea in the morning, individual differences between the participants, the amount of sleep the participant had etc.</p>	Max [1]	Answers referring to how fast the psychologists drop the ruler = 0 marks
10 (b)	<p>Outline one way in which the psychologist could have controlled for an extraneous variable in this study.</p> <p>1 mark for identifying a reasonable solution to any possible extraneous variable in this study (candidate is most likely to use the one stated in their answer to 10a).</p> <p>1 mark for illustrating an understanding of how it controls for the extraneous variable they have identified.</p> <p>For example ‘one thing the psychologist could have done would have been to get everyone to her laboratory earlier and then given half breakfast rather than relying on them eating before they arrived [1] that way she could have controlled what they ate and how much [1]’ or ‘one way she could have controlled for individual differences would have been to test their reaction time first before anyone had eaten to see what it was like first [1] and then split them into their groups and half eat breakfast and half don’t and then measure their reaction time again [1]’.</p>	Max [2]	<p>NB: Question 10 (a) and 10(b) are independent and should therefore be marked as such.</p> <p>By its nature this question requires a contextualised response.</p> <p>Do not allow ‘participants being tested individually’ as this is stated in the source and remains in question 7.</p>

Section A – PLANNING, DOING AND ANALYSING RESEARCH			
The Source			
Question Number	Expected Answer	Marks	Rationale
11	<p>Explain what is meant by validity.</p> <p>1 mark for a response that refers to ecological validity only, (eg 'validity means how true to life something is [1]').</p> <p>1 mark for an accurate definition of validity; (eg 'whether something is measuring what it says it is [1]').</p>	Max [2]	<p>A maximum of 1 mark can be awarded to responses just referring to ecological validity.</p> <p>Responses that refer to external validity, such as population validity can achieve 1 mark.</p>
12	<p>After this experiment, the psychologist planned to investigate whether there is a correlation between how much coffee people had drunk at breakfast and their reaction time. Outline how the psychologist would use a correlation study to investigate this.</p> <p>1 mark for recognising a correlation is a test of relationship between variables</p> <p>1 mark for showing a prediction of the correlation between the variables</p> <p>(eg 'the psychologist may predict that there will be a positive [1] correlation between the amount of coffee people had drunk at breakfast and their reaction time, this would show a relationship between them' [1] or, 'a correlation predicts there will be a relationship [1] between reaction time and the amount of coffee a person had drunk, in this case, he could predict a negative correlation' [1], or 'a correlation shows a relationship [1] between variables, the psychologist could predict that as the amount of coffee drunk increases, so will their reaction time' [1]).</p>	Max [2]	<p>Allow looking for a 'trend' or 'link' between two variables.</p> <p>Allow 1 mark for giving an additional piece of information, such as how the variable(s) would be measured in the correlation.</p> <p>Reference to plotting the data onto a scattergraph = 1 mark</p>
	Section A Total	[25]	

Section B – Planning an Investigation			
Question Number	Expected Answer	Marks	Rationale
	<p>You have been asked to carry out a questionnaire to investigate the effects of the weather on mood. The theory is that people's mood (e.g. how happy, sad, anxious etc they are) will vary with changes in the weather.</p>		<p>The whole of section B (Q13) MUST be marked TOGETHER due to the nature of contextualisation throughout. Contextualisation comes from the candidate's method.</p>
13 (a)	<p>State a hypothesis for your investigation.</p> <p>Hypotheses can be directional, non-directional, null or alternate and can predict difference or correlation.</p> <p>1 mark for an unclear or general statement (for example 'the weather affects people mood [1]', 2 marks for a clear, specific statement encompassing <i>both</i> variables (for example 'There will be a difference in people's moods [1] depending on how nice the weather is [1]' or 'people will report feeling in a better mood [1] when the weather is nice than when it is raining or cold [1]' or 'how sunny or cold it is will affect [1] how happy or sad people feel [1]'.)</p>	<p>Max [2]</p>	<p>To gain full marks, the response must be a prediction, not a question/aim or statement.</p> <p>NB: Both variables must be clear for 2 marks.</p>

Question Number	Expected Answer	Marks	Rationale
13 (b) (i)	<p>Describe the sampling method you would use to select your participants for your investigation.</p> <p>1 mark for providing a definition or description of the chosen sampling method demonstrating their understanding of it. 1 mark for describing the sampling method in context of this investigation.</p> <p>For example 'the sampling method I would use is opportunity sampling, like members of my family or my friends at school [1]' or, 'I would just use whoever was available at the time [1] like my teachers and friends at school [1]'.)</p>	<p>Max [2]</p>	<p>For full marks the response must go beyond giving a definition of the sampling method.</p> <p>Contextualisation may take the form of identifying participants (or groups of) or to the questionnaire method.</p> <p>Just naming a sampling method is uncreditworthy as it would be a repetition of section A, question 3. If the candidate writes a description of an appropriate sampling method but then names it incorrectly, (eg describes opportunity sampling but calls it random sampling), credit can still be awarded for the accurate description.</p>

Section B – Planning an Investigation			
Question Number	Expected Answer	Marks	Rationale
13 (b) (ii)	<p>Outline one strength of the sampling method you have chosen for your investigation</p> <p>1 mark for accurately identifying an appropriate strength of their chosen sampling method. 1 mark for placing the strength in context of their investigation.</p> <p>(eg ‘one strength of using an opportunity sampling method is that it is convenient to do [1], so I wouldn’t have to spend a long time choosing my participants I could just choose people who were easily available to me like my teachers[1]’</p>	Max [2]	Be mindful of definitions/descriptions of a sampling method rather than a strength of it.
13 (c)	<p>Explain how you would measure one of the variables in your investigation.</p> <p>1 mark for the identification of how the variable could be measured. 1 mark for elaboration showing how the measurement could work for this investigation.</p> <p>(eg ‘I would measure people’s mood by asking them rating questions [1] where they circle how happy, sad, anxious, upset they are on a scale of 1-5, 1 being not at all and 5 being very [1]’, or ‘I would measure weather by asking people to rate on a scale [1] the average temperature of the weather of specific days or times of year by using symbols such as a sun, or a cloud [1]’)</p>	Max [2]	The measure must pertain to the use of a questionnaire method to collect the data.

Section B – Planning an Investigation			
Question Number	Expected Answer	Marks	Rationale
13 (d)	<p>Briefly outline how you would carry out the questionnaire to investigate the effects of the weather on mood.</p> <p>1 mark for an attempt to describe how the investigation would be done (for example, ‘I would write some questions asking people how happy and sad they are when the weather is good and bad [1]’</p> <p>2 marks for describing a reasonably feasible procedure (for example, ‘I would write a questionnaire that asks people to describe how they feel at various times of the year [1] to see if their mood changes when the weather changes, like from summer to winter [1]’</p> <p>3 marks for describing in some detail within the time constraints, a feasible procedure (for example, ‘I would identify a variety of weather types – hot, cold, sunny, raining, windy, etc and then identify a variety of moods – happy, sad, anxious, depressed etc [1]. I would then write a questionnaire that asks participants to identify on a scale of 1-10 how happy or sad etc they are when the weather changes [1]. I would then look to see if people’s mood changes with the weather [1]’</p>	Max [3]	<p>Question 13c must be considered when marking this response. No credit can be awarded for repetitions to the response in question 13c as it will have been credited previously.</p> <p>Likewise no credit can be awarded here for responses describing their chosen sample or sampling method as credit has been awarded in question 13bi and 13bii.</p> <p>When marking look for: Pilot study What When Where The other variable not illustrated in 13c Data analysis relating to question type</p>

Section B – Planning an Investigation			
Question Number	Expected Answer	Marks	Rationale
13 (e)	<p>Describe one ethical issue you will have to deal with when investigating the effect of the weather on mood.</p> <p>1 mark for the accurate identification of an ethical issue or for a definition / description of it that demonstrates their understanding. 1 mark for describing why the ethical issue is relevant to this investigation</p> <p>(for example, ‘one ethical issue is confidentiality [1] as participants may not want other people to see their moods as they are very private’ [1]) or, ‘one ethical issue would be to not ask any questions which may upset participants [1] as people may feel uncomfortable discussing their moods. [1]’</p>	Max [2]	<p>NB: 1 mark can be awarded for the identification of any ethical issue.</p> <p>For full marks the answer must make it clear why the ethical issue is relevant to this investigation.</p>
13 (f)	<p>Describe one strength of using a questionnaire in this investigation.</p> <p>1 mark for the identification of a strength of the questionnaire as a method of investigation. 1 mark for placing the strength in context of this study/explaining <i>why</i> it is a strength with reference to this study.</p> <p>For example ‘one strength of the questionnaire method is that it is a good way of finding out the attitudes and thoughts of a large group of people [1] for example lots of people can be asked about their moods all at once [1]’ or ‘using closed questions will give quantitative data [1] which means that scoring people’s mood will make it easier to analyse [1]’ or ‘using open questions will allow people to describe their moods [1] which will give lots of detail [1]’.</p>		<p>NB: By explaining <i>why</i> it is a strength, the response should be contextualised to the nature of the investigation.</p>
	Section B Total	[15]	

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