Practice Paper 1 – Set 1

A Level Psychology
H567/01 Research methods

MARK SCHEME

Duration: 2 hours

MAXIMUM MARK 90

Final
Last updated: 22/04/2016

This document consists of 16 pages

LEVELS OF RESPONSE – LEVEL DESCRIPTORS

	AO1	AO2	AO3
Good	Response demonstrates good relevant knowledge and understanding. Accurate and detailed description.	Response demonstrates good application of psychological knowledge and understanding. Application will be mainly explicit, accurate and relevant.	Response demonstrates good analysis, interpretation and/or evaluation that is mainly relevant to the demand of the question. Valid conclusions that effectively summarise issues and argument is highly skilled and shows good understanding.
Reasonable	Response demonstrates reasonable relevant knowledge and understanding. Generally accurate description lacking some detail.	Response demonstrates reasonable application of psychological knowledge and understanding. Application will be partially explicit, accurate and relevant.	Response demonstrates reasonable analysis, interpretation and/or evaluation that is partially relevant to the demand of the question. Valid conclusions that effectively summarise issues and argument are competent and understanding is reasonable.
Limited	Response demonstrates limited relevant knowledge and understanding. Limited description lacking in detail.	Response demonstrates limited application of psychological knowledge and understanding. Application may be related to the general topic area rather than the specific question.	Response demonstrates limited analysis, interpretation and/or evaluation that may be related to topic area. Some valid conclusions that summarise issues and arguments.
Basic	Response demonstrates basic knowledge and understanding that is only partially relevant. Basic description with no detail.	Response demonstrates basic application of psychological knowledge and understanding. Responses will be generalised lacking focus on the question.	Response demonstrates basic analysis, interpretation and/or evaluation that is not related to the question. Basic or no valid conclusions that attempt to summarise issues. No evidence of arguments.

Question			Answer	Marks	Guidance
SECTION A: Multiple Choice					
1			A	**1**	
2			D	**1**	
3			B	**1**	
4			B	**1**	
5			B	**1**	
6			D	**1**	
7			C	**1**	
8			C	**1**	
9			D	**1**	
10			A	**1**	
11			B	**1**	
12			B	**1**	
13			B	**1**	
14			D	**1**	
15			C	**1**	
16			A	**1**	
17			B	**1**	
18			A	**1**	
19			D	**1**	
20			A	**1**	

Question			Answer	Marks	Guidance
SECTION B: Research design and response Memory can be influenced by many different things, including the appearance of what it is we are trying to remember. For example, green is a natural colour that features a lot in our environment, so may help improve how we learn and remember things we see in this colour. To investigate this psychologists want to use the laboratory experiment method to investigate if presenting words in green ink compared to black helps improve memory.					
21	**(a)**		**What type of sampling technique is this?** Self-selected sampling	**1**	
	(b)		**Describe ONE strength and ONE weakness of using this sampling technique in this study.** Strengths could include: relatively easy to obtain a potentially diverse group of participants; cost effective; can include specific details of type of participants desired. Weaknesses could include: prone to (volunteer) bias; limited to those shopping in the chosen supermarket at the time. **2 marks:** Strength/weakness clearly described in context **1 mark:** Strength/weakness clearly described but not in context **OR** attempt to describe strength/weakness in context **0 marks**: No creditworthy response.	**4**	-2 marks for strength, 2 marks for weakness -Context = ‘supermarket’, ‘shopping’, ‘memory’, ‘colour of words’, ‘green’ For both the strength and weakness: • 2 x AO3 marks for analysis / evaluation of the strengths / weaknesses of the use of self-selected sampling in this study • 2 x AO2marks for the application of knowledge relating to self-selected sampling in this study

Question			Answer	Marks	Guidance
22			**Write a one-tailed alternative hypothesis for this study.** *eg* • *There will be a significant difference in the number of words correctly remembered with more words printed in green ink being remembered than those printed in black ink* • *More words presented for learning printed in green ink will be remembered than words presented in black ink.* **3 marks**: correctly cited one-tailed alternative hypothesis with both variables operationalised **2 marks**: correctly cited one-tailed alternative hypothesis with reference to both variables, but only one operationalised **1 mark**: correctly cited one-tailed alternative hypothesis with reference to both variables, but neither operationalised **0 marks**: No creditworthy response.	**3**	-Can be written in future or present tense. -Use of the word 'significant' is not necessary for full marks. 3 x AO2 marks are awarded for correctly citing an appropriate one-tailed alternative hypothesis for this study with increasing level of detail in terms of reference to the variables studied. 1 mark for the stem, which should predict a difference plus 1 mark for the inclusion of each of the variables, plus a further mark if both variables are fully operationalised.

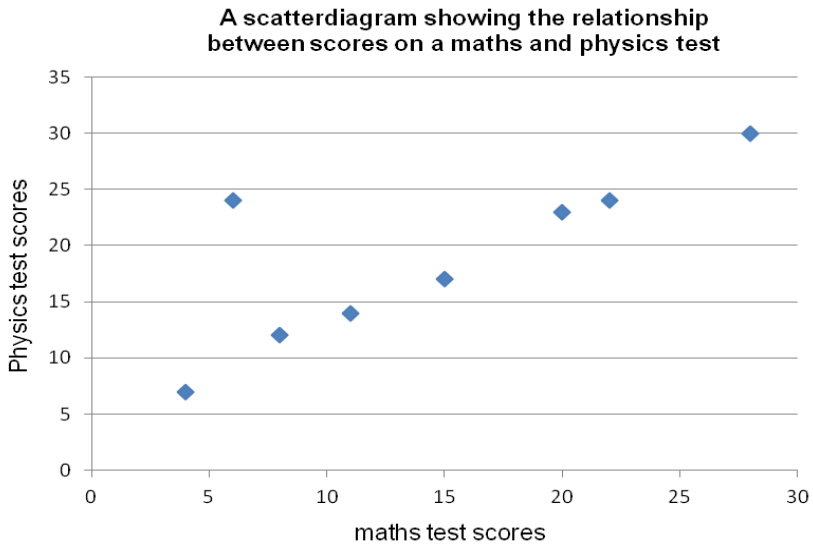
Question			Answer	Marks	Guidance
23		*	**Explain how you would conduct a study using the laboratory experiment method to investigate the effect of colour on memory for a list of words. Justify your decisions as part of your explanation. You must refer to:** **-the use of independent measures design or repeated measures design** **-how the variables are operationalised** **-at least two control features** **-level of data collected** **Level 4: 12–15 marks** **-Good** knowledge and understanding of experimental method **-Good** application of knowledge and understanding of experimental method **-Good** justification of planning choices **All** of the required features are addressed and the candidate demonstrates accurate knowledge of each. There is **good** evidence of application in the description of features showing high levels of understanding. There is appropriate justification of **all or most** decisions and some of this is contextualised with reference to the investigation brief. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. The response **explicitly** draws on the candidates own experience and there are clear links between the planned investigation and the practical activity carried out.	15	**AO1 (3 marks)** Candidates should demonstrate knowledge and understanding of the following required features of the method that could be used in this study: • the use of independent measures design or repeated measures design • how the variables are operationalised • at least two control features • level of data collected **AO2 (5 marks)** • Application of knowledge of the use of independent or repeated measures design • Application of knowledge of how to operationalize variables • Application of knowledge of at least two control features • Application of knowledge of levels of data **AO3 (7 marks)** Broad discussion of decisions concerning the method described to conduct the research.

			Level 3: 8 – 11 marks **-Good** knowledge and understanding of experimental method **-Reasonable** application of knowledge and understanding of experimental method **-Reasonable** justification of planning choices **Most if not all** of the required features are addressed and the candidate demonstrates **reasonably accurate** knowledge of each. There is **some** evidence of application in the description of features showing a level of understanding. There is likely to be some appropriate justification of decisions and, at points, this is contextualised with reference to the investigation brief. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. The response draws on the candidates own experience and there are some links between the planned investigation and the practical activity carried out. **Level 2: 4 – 7 marks** **-Reasonable** knowledge and understanding of experimental method **-Limited** application of knowledge and understanding of experimental method **-Limited** justification of planning choices **At least some** of the required features are addressed and the candidate demonstrates knowledge of these. There is limited evidence of application in the description of features showing basic understanding. There may be an attempt to justify decisions but it is likely to be weak. There is a line of reasoning presented with some structure. The information has some relevance and is presented with limited structure. The information is supported by limited evidence. The		

			response makes reference to the candidates own experience and there are vague links between the planned investigation and the practical activity carried out. **Level 1: 1 – 3 marks** **-Reasonable** knowledge and understanding of experimental method **-Basic** application of knowledge and understanding of experimental method **-Basic** justification of planning choices **At least one** of the required features is addressed and the candidate demonstrates knowledge here. There may be weak application of the chosen technique(s). There is unlikely to be any justification of decisions, and if so it will be weak. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear. The response may make some reference to the candidates own experience and there are weak or tenuous links between the planned investigation and the practical activity carried out. **0 marks**: No creditworthy response.		
24			**Evaluate the use of matched participants design if it had been used in this study**. Possible responses could include: enables individual differences to be controlled in terms of existing levels of memory; pre-testing/matching can be time consuming; deciding what to match can be problematic **Level 3: 5-6 marks:** Good evaluation demonstrating good understanding of the use of matched participants design in this study.	**6**	-Context = ‘supermarket’, ‘shopping’, ‘memory’, ‘colour of words’, ‘green’ -Evaluation points can be positive or negative, good or bad Up to 2 x AO2 marks are awarded for the application of knowledge of matched participants design in this study. Up to 4 x AO3 marks are awarded for evaluation points related to the use of matched participants design in this study.

			Level 2: 3-4 marks: Reasonable evaluation demonstrating reasonable understanding of the use of matched participants design in this study. **Level 1: 1-2 marks:** Limited/basic evaluation, whether in context or not. **0 marks**: No creditworthy response.		
25	**(a)**		**Psychologists want to conduct a follow-up study using the self-report method to investigate other things that may influence memory. Suggest one open question that could be used in this study.** eg. *Explain what kind of things case you the most problems with your memory?* **2 marks***:* Clear suggestion of an open question in context **1 mark:** Attempt to suggest an open question **0 marks**: No creditworthy response.	**2**	-Context = 'memory', 'colour of words', 'green' 1 x AO1 mark for demonstrating knowledge and understanding of what an open question is. 1 x AO2 mark for the application of knowledge and understanding of what an open question is.
	(b)		**Suggest one closed question that could be used in this study.** eg: *Which of the following cause you problems with your memory?* *❑ dates ❑ names ❑ facts ❑ figures ❑ events* **2 marks:** Clear suggestion of a closed question in context **1 mark:** Attempt to suggest a closed question **0 marks**: No creditworthy response.	**2**	-Context = 'memory', 'colour of words', 'green' 1 x AO1 mark for demonstrating knowledge and understanding of what a closed question is. 1 x AO2 mark for the application of knowledge and understanding of what a closed question is.
	(c)		**Suggest one question using a rating scale that could be used in this study.** eg: *Indicate on a scale of 1 (not very good at all) to 10 (excellent) how good is your memory for names?*	**2**	-Context = 'memory', 'colour of words', 'green' 1 x AO1 mark for demonstrating knowledge and understanding of what a rating scale question is.

			2 marks: Clear suggestion of a rating scale in context **1 mark:** Attempt to suggest a rating scale question **0 marks**: No creditworthy response.		1 x AO2 mark for the application of knowledge and understanding of a rating scale question is.

Section C: Data analysis and interpretation					
Question			**Answer**	**Marks**	**Guidance**
26			**Identify two findings from the data presented in this table.** For example: overall test scores higher in physics test; highest overall score was 30 in physics test; lowest score was 4 in maths test; larger range of scores in maths test (4 to 28); mode is 24 for physics scores etc **3-4 marks:** Clear identification of two findings **1-2 marks:** Attempt to identify two findings OR clear identification of one finding **0 marks**: No creditworthy response.	**4**	-Context = GCSE, maths, physics Max 2 x AO2 marks for each finding identified
27			**Draw a scatter diagram displaying the results of this study.**  1 mark is awarded for correctly plotting the data 1 mark is awarded for including units of measurement on both axes	**4**	

			1 mark is awarded for clear labelling of each axis 1 mark is awarded for a clear and appropriate title **4 marks:** All features identified **3 marks**: 3 features identified **2 marks**: 2 features identified **1 mark:** 1 feature identified **0 marks**: No creditworthy response.		
28	**(a)**		**Calculate the range for each test taken.** Maths test: 28 - 4 = 24 OR (28 - 4) + 1 = 25 Physics test: 30 - 7 = 23 OR (30 - 7) + 1 = 24 **2 marks**: correct calculation of range for both the maths and physics tests data **1 mark:** correct calculation of the range for either the maths test or physics test data **0 marks**: No creditworthy response.	**2**	-Accept either pure range calculation (highest value minus lowest), or the measurement error calculation (highest value – lowest value + 1) 1 x AO1 mark for knowledge and understanding of what the range is and how to calculate it 1 x AO2 mark for calculation of the range with data presented
	(b)		**What conclusion can be reached by interpreting the range for each test?** Possible answers could include: The range for both the maths and physics tests are very similar (24 and 23) indicating that the variation in individual performances in the tests is very similar for both the maths and physics test (suggesting people who are good at maths are also good at physics and vice versa); the range for the maths scores is quite large (24) indicating there is a big variation in individuals maths ability, with some scoring very high and others very low on the test; the range for the physics scores is quite large (23) indicating there is a big variation in individuals maths ability, with some scoring very high and others very low on the test. **3-4 marks:** Clear conclusion in context	**4**	-Context = GCSE, maths, physics 2 x AO2 marks for evaluation of what range indicates in this study 2 x AO3 marks for application of what the range is in this study

			1-2 marks: Clear conclusion but not in context OR attempted conclusion in context **0 marks**: No creditworthy response.		
	(c)		**Suggest one advantage of using standard deviation instead of the range to analyse the data from each test.** Advantages include: more accurate as involves all individual scores, unlike the range that only considers the highest and lowest values; less affected by extreme values; more likely to produce a more representative figure. **3 marks**: Clear and detailed outline of advantage in context **2 marks:** Clear brief outline of advantage, but in context **OR** clear and detailed outline of advantage, but not in context **1 mark:** Attempt to outline advantage, but lacks clarity/detail (whether in context or not) **0 marks**: No creditworthy response.	**3**	-Context = GCSE, maths, physics 1 x AO1 mark for knowledge and understanding of what standard deviation is 2 x AO3 marks for evaluating the use of standard deviation in this study

Question			Answer	Marks	Guidance
29	(a)		**Suggest two strengths of using correlation in this study.** Strengths include: able to show relationship between maths and physics scores (especially on a scatter diagram which is easy to assimilate); can use existing data (maths and physics test scores); provides information for further research about the skills / qualities used/needed to do well in maths and physics; etc. 2 marks for each strength as follows: **2 marks**: Clear strength outlined in context **1 mark:** Clear strength outlined but not in context OR attempt to outline strength in context **0 marks**: No creditworthy response.	4	-Context = GCSE, maths, physics 2 x AO2 marks for demonstrating knowledge and application of the correlation technique in this study 2 x AO3 marks for evaluation of the strengths of using correlation in this study
	(b)		**Suggest two weaknesses of using correlation in this study.** weaknesses include: does not show cause-and-effect between the ability to perform well in maths and physics; relationships could occur by chance; extraneous variables may be responsible for performance in maths and physics (e.g. completing puzzles etc.); only deals with quantitative data so unable to know *why* those who perform well in maths also perform well in physics (or vice versa) 2 marks for each weakness as follows: **2 marks**: Clear weakness outlined in context **1 mark:** Clear weakness outlined but not in context OR attempt to outline weakness in context **0 marks**: No creditworthy response.	4	-Context = GCSE, maths, physics 2 x AO2 marks for demonstrating knowledge and application of the correlation technique in this study 2 x AO3 marks for evaluation of the weakness of using correlation in this study

30	(a)		**The psychologist used the Spearman's ranked correlation coefficient test to analyse the data from this study. Explain why this was an appropriate test to use.** Rationale for use of the test could include: because it is a test of correlation and the researchers were investigating the relationship between scores in a maths test and physics test; because ordinal level data (maths and physics test scores) was obtained and the Spearman's test requires this level of data **2 marks:** Clear explanation of why the Spearman's ranked correlation coefficient test was appropriate **1 mark:** Attempt to explain why the Spearman's ranked correlation coefficient test was appropriate **0 marks**: No creditworthy response.	**2**	-Context = GCSE, maths, physics 1 x AO1 mark for knowledge and understanding of what the Spearman's ranked correlation coefficient test is 1 x AO2 mark for application of knowledge about the criteria for using the Spearman's ranked correlation coefficient test
	(b)		**Explain how the data would be ranked for use in this test.** Test scores would be assigned a number, using rank 1 for the lowest score, rank 2 for the next score and so on for both the maths test and the physics test (but each set of scores ranked separately to each other). **2 marks:** Clear explanation of how to rank the data **1 mark:** Attempt to explain how to rank the data **0 marks**: No creditworthy response.	**2**	-Context = GCSE, maths, physics 1 x AO1 mark for knowledge and understanding of what ranking data involves 1 x AO2 mark for application of knowledge of how to rank the data in this study for use in the Spearman's ranked correlation coefficient test NB Rank 1 can be assigned to the highest value score rather than the lowest providing the rest of the ranks are assigned consistently with this 9i.e. the second highest score is assign rank 2 and so on
	(c)		**The inferential test result produced a calculated value of +0.7083. Explain what this means.** The + sign indicates it is a positive correlation meaning that the higher the maths scores the higher the physics scores. The value of +0.7083 indicates a strong positive correlation between the maths and physics scores	**3**	-Context = GCSE, maths, physics 1 x AO1 mark for knowledge of what a positive correlation is 2 x AO2 marks for application of knowledge and understanding of what a strong positive correlation is in this study

			3 marks: Clear and detailed explanation in context **2 marks:** Clear and detailed explanation but not in context **1 mark**: Attempted explanation whether in context or not **0 marks**: No creditworthy response.		
31	**(a)**		**What does the term 'critical value' refer to?** A critical value is a figure in a table of critical values that the answer from an inferential statistical test is compared with to check if the findings are statistically significant or not at a given level of probability **1 mark:** Critical value defined correctly **0 marks**: No creditworthy response.	**1**	
	(b)		**How would the critical value be obtained in this study?** By using a table of critical values for the Spearman's ranked correlation coefficient test and using the number of participants that data from each test (maths and physics) was obtained from (8) to look up and locate the correct critical value **2 marks:** Clear explanation of how the critical value would be obtained **1 mark:** Attempt to explain how the critical value would be obtained **0 marks**: No creditworthy response.	**2**	-Context = GCSE, maths, physics