GCE AS MARKING SCHEME

SUMMER 2017

AS (NEW)
PSYCHOLOGY - COMPONENT 2
B290U20-1

INTRODUCTION

This marking scheme was used by WJEC for the 2017 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

AS PSYCHOLOGY - COMPONENT 2

SUMMER 2017 MARK SCHEME

Question	AO1	AO2	AO3	TOTAL
1	2			2
2	6			6
3	4			4
4	8			8
5			10	10
6		16	4	20
7		9	6	15
8		15		15
TOTAL	**20**	**40**	**20**	**80**

MARK SCHEME

SECTION A

1. Explain **one** difference between participant and non-participant observations. **[2]**

Exemplar answers:

- One difference is the degree to which the researcher is participating in the research. In participant observation, the researcher is part of the scenario they are observing, but in non-participant observations the researcher is removed from the scenario they are observing. [2 marks]
- In participant observations the researcher gets more involved than in a non-participant observation. [1 mark]
- Any other appropriate difference.

N.B. Where an answer **only** juxtaposes the definitions of participant and non-participant observation, such as "participant observations mean the researcher observes and is part of the observation, whereas in a non-participant observation the researcher observes but does not participate", maximum mark awarded should be 1 mark.

Marks	AO1
2	• Reasonable explanation of one difference.
1	• Basic explanation of one difference.
0	• Inappropriate answer given. • No response attempted.

2. Describe the format for reporting psychological investigations. **[6]**

Credit **could** be given for:

- Investigations normally being published in a journal (print and/or on-line)
- Identification and description of typical content of various key elements in a psychological investigation such as Title; Abstract; Introduction; Methods/Procedures; Results; Discussion/Conclusions; References.
- Abstract: Brief summary of the research.
- Introduction: brief summary of relevant literature.
- Methodology: design chosen.
- Procedure: steps that were taken by the researcher.
- Findings/result: data gathered and analysed.
- Discussion: of results and conclusion.
- Any other appropriate description.

Marks	AO1
5-6	• Reasonable description of format used to report psychological investigations given. • Good use of appropriate terminology.
3-4	• Basic description of format used to report psychological investigations given. • Some use of appropriate terminology.
1-2	• Superficial description or outline of format used to report psychological investigations given. • Very little use of appropriate terminology.
0	• Inappropriate answer given. • No response attempted.

3. Identify what is being described in the following statements:
(For each of the following questions only the first answer will be assessed).

(a) A type of sampling where one participant recruits other participants to take part in the research. **[1]**

Marks	AO1
1	• Snowball sampling.
0	• Inappropriate answer given. • No response attempted.

(b) The most basic level of measurement. **[1]**

Marks	AO1
1	• Nominal.
0	• Inappropriate answer given. • No response attempted.

(c) A graphical representation that displays the frequency of continuous data. **[1]**

Marks	AO1
1	• Histogram. • Frequency Polygon. • Line graph. • Any other appropriate graphical representation.
0	• Inappropriate answer given. • No response attempted.

(d) An inferential statistical test that can be used when a researcher is looking to investigate a possible difference when using a repeated measures experimental design and the data is at least an ordinal level of measurement. **[1]**

Marks	AO1
1	• Wilcoxon matched pairs signed ranks test or 'Wilcoxon'. • One sample t-test. • Appropriate abbreviation of the above.
0	• Inappropriate answer given. • No response attempted.

4. Describe the methodology **and** sample used by Kohlberg (1968) in his research '*The child as a moral philosopher*.' **[8]**

Credit **could** be given for:

Methodology:

- Longitudinal study which followed the development of the same group of boys for 12 years.
- Use of interviews to assess moral reasoning; including the use of moral dilemmas.
- Cross-cultural comparison.

Sample:

- 75 American boys who started the research between the ages of 10 and 16.
- The boys were 22-28 at the end of the research.
- Additional sample from Great Britain, Canada, Mexico, Turkey and Taiwan were interviewed by Kohlberg or a colleague of Kohlberg.
- Any other appropriate description of the methodology or sample - although it must be cited in the original article.

Marks	**AO1**
7-8	• Accurate and detailed description of **both** the methodology **and** sample.
5-6	• Reasonably accurate and detailed description of **both** the methodology **and** sample.
3-4	• Basic description of **both** the methodology **and** sample. **OR** • Accurate and detailed description of **either** the methodology **or** sample.
1-2	• Superficial description of **both** the methodology **and** sample. **OR** • Basic description of **either** the methodology **or** sample.
0	• Inappropriate answer given. • No response attempted.

5. Evaluate Kohlberg's (1968) research '*The child as a moral philosopher*'. **[10]**

Credit **could** be given for:

- Methodological issues: use of interviews.
- Sampling issues: Use of an all-male sample group.
- Validity issues: Use of hypothetical moral dilemmas; investigator bias in interpreting responses.
- Reliability issues: Different hypothetical moral dilemmas used with different participants; different questions used with children of different ages; differences is questions asked to those in Taiwan.
- Alternative evidence: Contradictory or supportive findings relating to moral development.
- Any other appropriate evaluation.

Marks	AO3
9 – 10	• A thorough evaluation of Kohlberg's research. • Structure is logical. • Depth and range included. • An appropriate conclusion is reached based on evidence presented.
6 – 8	• A reasonable evaluation of Kohlberg's research. • Structure is mostly logical. • Depth and range but not in equal measure. • A reasonable conclusion is reached based on evidence presented.
3 – 5	• Basic evaluation of Kohlberg's research. • Structure is reasonable. • Depth or range. • A basic conclusion is reached.
1 – 2	• Superficial evaluation of Kohlberg's research. • Answer lacks structure • No conclusion.
0	• Inappropriate answer given. • No response attempted

SECTION B

*Answer **all** questions*

6. A professor chose to investigate the following hypothesis, '*There will be a difference in the attractiveness ratings of men when they wear aftershave and when they don't wear aftershave'*. The professor conducted his research at a bar. The researcher invited 40 of his female students to attend the event in order to celebrate his 50th birthday.

20 female students were randomly allocated to attend the event at 18.30 and the remaining 20 female students were asked to arrive at 20.00. 25 male students (who were paid by the professor) socialised with the first group of female students, wearing no aftershave. After one hour the first group of female students left. The male students then applied aftershave and socialised with the second group of female students.

As they were leaving, female students were asked to give some feedback using a questionnaire. One of the questions was:

7	Using the following scale, rate the attractiveness of the male students you met at the event.
0	Not attractive at all.
1	Weak levels of attraction.
2	Reasonably attractive. Your rating: _____
3	Very attractive.

The University professor found that the mean 'attractiveness' rating for the male students when they did not wear aftershave was 1.8, whereas the mean 'attractiveness' rating for the male students when they wore aftershave was 2.1.

(a) Describe **one** way the professor behaved unethically when conducting this research. **[2]**

Exemplar answers:
"The professor deceived the female students. They were lied to about the reason for the event, they thought it was for his birthday when really it was for his research. He did not even tell them that they were taking part in a piece of research."[2 marks]

"The female students were deceived as they weren't told the truth". [1 mark]

- Any other appropriate content.

Marks	AO3
2	• Appropriate and reasonable description of a relevant ethical issue.
1	• Appropriate, yet basic description of a relevant ethical issue.
0	• Inappropriate answer given (e.g. sampling issue described) • No response attempted

(b) State a suitable null hypothesis for this research. **[2]**

Credit **could** be given for:

- Any difference in the attractiveness ratings of men when they wear aftershave and when they don't wear aftershave will be due to chance factors. [2 marks]
- There is no significant difference in the attractiveness ratings of men when they wear aftershave and when they don't wear aftershave will be due to chance factors. [2 marks]
- There is no difference in the attractiveness ratings of men when they wear aftershave and when they don't wear aftershave. [1 mark]
- Any difference in the attractiveness of men when wearing aftershave and not wearing aftershave is due to chance. [1 mark]

No credit for directional or non-directional hypotheses.

Marks	AO2
2	• Appropriate null hypothesis, with clearly operationalised IV and DV.
1	• Appropriate, null hypothesis, but not operationalised.
0	• Inappropriate answer given. • No response attempted.

(c) Briefly explain **one** strength and **one** weakness of the professor conducting his research in the field. **[2+2]**

Credit **could** be given for:

Strength:

- More likely to elicit realistic behaviour from the female participants as they are meeting the male students in a bar, which is an everyday place to meet someone, as opposed to a laboratory.

Weakness:

- More difficult to control possible confounding variables, such as the amount of alcohol consumed by female students (which may influence their perception of the attractiveness of the male students).

- Any other appropriate strength or weakness.

Marks	AO2
2	• Appropriate strength/weakness, linked to this research.
1	• Appropriate strength/weakness, not linked to this research.
0	• Inappropriate answer given. • No response attempted.

(d) Briefly explain **one** strength and **one** weakness of using the mean score in this research. **[2+2]**

Credit **could** be given for:

Strength:

- The mean score would be necessary if the professor wanted to calculate the standard deviation of the attractiveness rating of the two groups of female students.

Weakness:

- Attractiveness rating system has a narrow range, however, an anomalous result could affect the mean.
- Any other appropriate strength or weakness.

Marks	AO2
2	• Appropriate strength/weakness, linked to this research.
1	• Appropriate strength/weakness, not linked to this research.
0	• Inappropriate answer given. • No response attempted.

(e) The professor used a Mann-Whitney U test. Justify why this test is appropriate for analysing the data collected in his research. **[4]**

Credit **could** be given for:

- Test of difference: Looking for a difference in attractiveness ratings from female students who were exposed to male students wearing aftershave and to male students not wearing aftershave.
- Independent data: The attractiveness scores are from participants who were either a exposed to male students wearing aftershave or participants who were exposed to male students not wearing aftershave, so is only part of one condition.
- Data is at least ordinal or data is ratio: the attractiveness rating is at least ordinal data or above.

Marks	AO2
4	• Answer contains all three elements to justify the use of a Mann Whitney U test and is linked to the data collected in this research.
3	• Answer contains two of the three elements to justify the use of a Mann Whitney U test and is linked to the data collected in this research.
2	• Answer contains one of the three elements to justify the use of a Mann Whitney U test and is linked to the data collected in this research.
1	• Answer contains all of the three elements to justify the use of a Mann Whitney U test but there is no link to the data collected in this research.
0	• Inappropriate answer given. • No response.

(f) Using the critical values table below, select a suitable critical value that the professor should use in his analysis and explain your selection. **[2]**

Table of Critical Values of U (p=0.05), for a two-tailed test.

		N_1		
		18	**19**	**20**
N_2	**18**	99	106	112
	19	106	113	119
	20	112	119	127

The observed (calculated) value must be equal to or less than the critical value in this table for the result to be significant at the given level.

Exemplar answers:
- 127 as the number of participants in each group of female students was 20 and this value intersects the N1 and N2 at 20. [2 marks]
- 127 as NI and N2 are both 20. [2 marks]
- 127. [1 mark]

- Any other appropriate content.

Marks	AO2
2	• Correct critical value (127) identified and explained.
1	• Correct critical value (127) identified and not explained.
0	• Inappropriate answer given. • No response attempted.

(g) The professor found the calculated (observed value) was 123. Explain if the professor should accept or reject his null hypothesis. **[2]**

Exemplar answers:
- The professor can reject his null hypothesis as the observed value 123 is less than the critical value of 127, which mean the difference is significant at p=0.05. [2 marks]
- He can reject the null. [1 mark]

- Any other appropriate content.

Marks	AO3
2	• Correctly identified that the null hypothesis can be rejected and explained why with reference to both observed and critical values.
1	• Correctly identified that the null hypothesis can be rejected but has not explained why with reference to both observed and critical values.
0	• Inappropriate answer given. • No response attempted.

7. A positive psychologist wanted to investigate if happiness increased in relation to annual income. She decided to collect the data using a questionnaire that she posted on-line. She collected information about the participants using questions such as:

9. In £, estimate your total annual income.	£
10. In £, estimate your total annual outgoings.	£

The psychologist then asked all of the participants to answer questions that measured their happiness level. The psychologist decided to correlate the total score obtained from the happiness questions with the participant's total annual income.

(a) Briefly explain **one** issue of internal reliability that may arise in this research. **[2]**

Credit **could** be given for:

Issues of internal reliability, such as:
- Different participants using different ways of estimating annual income.
- Posted online so may include some participants from other countries who do not use the British £ but may use Egyptian or Lebanese £.
- Any other issue of internal reliability.

Marks	**AO2**
2	• Reasonable explanation of an issue internal reliability clearly linked to this research.
1	• Reasonable explanation of an issue internal reliability not clearly linked to this research.
0	• Inappropriate answer given. • No response attempted.

(b) Would question 9 in the on-line questionnaire (noted above) produce qualitative data? **[1]**

Credit **could** be given for:
- No. [1 mark]
- No it would not produce qualitative data as it is leading the participant to a numerical response. [1 mark]
- Any other appropriate content.

Marks	**AO2**
1	• Appropriate identification of question 9 not producing qualitative data.
0	• Inappropriate answer given. • No response attempted.

(c) Identify **one** method of graphical representation that could be used by the psychologist to display the data relating income to happiness level. **[1]**

Credit **could** be given for: • Scatter graph. [1 mark] • Scattergram. [1 mark] • Any other appropriate content N.B. question specifically says graphical representation, so no credit for an inferential test.	
Marks	**AO2**
1	• Identification of appropriate graphical representation.
0	• Inappropriate answer given. • No response attempted.

(d) (i) Identify an inferential statistical test that could be used to analyse if there is a correlation between income and happiness scores of the participants. **[1]**

Credit **could** be given for: • Spearman's rank order correlation coefficient. • Spearman's Test. • Any other appropriate content. N.B. Credit could be given for an appropriate inferential test that is not on the specification, such as Pearson's Product Moment.	
Marks	**AO2**
1	• Identification of appropriate statistical test.
0	• Inappropriate answer given. • No response attempted.

(ii) Explain **two** reasons why your choice of test for this research is appropriate. **[2+2]**

Credit **could** be given for: • Related data: the happiness scores and the annual incomes are coming from the same people; each participant submits both annual income and happiness rating. • 'Data is at least ordinal' or 'data is ratio: the annual income in £ would be ratio data, the happiness scores would be at least ordinal. • Test of Correlation: The researcher is aiming assess the nature and strength of any relationship between happiness and annual income. • Any other appropriate content.	
Marks	**AO2**
2	• Explanation is appropriate and linked to the data collected to this research.
1	• Explanation is appropriate and but not linked to the data collected in this research.
0	• Inappropriate answer given. • No response attempted

(e) (i) A colleague of the psychologist was concerned about the ethics of this research, most notably the possible risk to the participants' values, beliefs, relationships, status or privacy. Explain why this ethical issue might be relevant to this research. **[3]**

Credit **could** be given for:

- Participants' personal details including their annual income are being submitted online where responses are stored may not be secure.
- Participants who are assessed as having low happiness level or low annual income may think their status has been lessened.
- If a positive correlation is found, some participants may change their values thinking that they could increase their happiness by increasing their income and that may not be the case.
- Any other appropriate content.

N.B. Discussion of ethical issues other than that specified in the question is not credited.

Marks	**AO2**
3	• Reasonable explanation of the specified ethical issue with clear links to the research.
2	• Reasonable explanation of the specified ethical issue with a link to the research. **OR** • Basic explanation of the specified ethical issue with links to the research.
1	• Basic explanation of the specified ethical issue with a link to the research. **OR** Reasonable explanation of the specified ethical issue with no link to the research.
0	• Inappropriate answer given. • No response attempted.

(ii) What advice could the colleague offer to manage the risk to the participants' values, beliefs, relationships, status or privacy in this research. **[3]**

Credit **could** be given for:
- Explanation that offers more general advice on managing ethical issues (i.e. follow guidelines, submit to ethics committee for approval).
- Explanation that is specifically focused and an appropriate way to manage the specified ethical issue.

Exemplar answers:
- Researcher should ensure the participant wouldn't lose status or privacy as if the information about annual income was submitted online, it would mean it could be done in a reasonably anonymous manner (i.e. no names included in the questionnaire; researcher doesn't meet participant face to face) and that the information stored about the participants income and happiness was done so in a secure way (i.e. password protected on secure servers). [3 marks].

- The colleague could tell the researcher to make sure that they followed BPS ethical guideline and also not to do the research without approval from an ethics committee.

- Any other appropriate content.

N.B. Advice offered might focus on one aspect of this issue or it may focus on more than one aspect; either approach is creditable. Learners are not expected to address every aspect of this ethical issue to achieve full marks.

Marks	**AO2**
3	• Reasonable explanation of how the specified ethical issue could be managed with clear links to the research.
2	• Reasonable explanation of how the specified ethical issue could be managed with a link to the research. **OR** • Basic explanation of the specified ethical issue with links to the research.
1	• Basic explanation of how the specified ethical issue could be managed with a link to the research. **OR** Reasonable explanation of how the specified ethical issue could be managed with no link to the research.
0	• Inappropriate answer given. • No response attempted.

8. A developmental psychologist was concerned about the amount time young people seem to spend using social media. She decided to conduct a semi-structured interview with a group of 10-14 year olds. She initially asked her 12 year old neighbour to participate. She then asked the neighbour to recruit two other participants. Each of these participants then also recruited another two participants each. By the end of the research, the psychologist had conducted seven semi-structured interviews. One question the developmental psychologist asks each participant was '*How many hours have you spent using social media in the last week*?' The results for this question are displayed in the table below:

Participant number	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Number of hours spent using social media in the last week.	14	10	15	35	14	15	13

(a) Briefly explain **one** strength and **one** weakness of using a semi-structured interview in this research. **[2+2]**

Credit **could** be given for:

Strength:
- Allows the researcher more flexibility in their interview than a structured interview; the researcher can ask follow-up questions if the participant says something interesting.
- Researcher is still able to ensure that all participants are asked some questions which are all the same, which may not be the case with an unstructured interview.

Weakness:
- Research has lower internal reliability as different participants will have different questions and overall experiences in the research.
- Participants answers will be more varied, which would make it more difficult to analyse.

- Any other appropriate strength or weakness.

Marks	**AO2**
2	• Appropriate strength/weakness and linked to this research.
1	• Appropriate strength/weakness not linked to this research.
0	• Inappropriate answer given. • No response attempted.

(b) Suggest **one** question that could be used in this interview that could produce qualitative data. **[2]**

Credit **could** be given for:
- Appropriately phrased question that would produce qualitative data in the response given by the participant.

Exemplar answers:
- Please explain why you like to use social media. [2 marks]
- Explain why you think teenagers are using social media more today than ever before. [2 marks]

- Any other appropriate content.

N.B. 'Questions' do not need to have a ? to receive credit.

Marks	**AO2**
2	• Appropriate question that would produce qualitative data and clearly links to this research.
1	• Appropriate question that would produce qualitative data with no link to this research.
0	• Inappropriate answer given. • No response attempted.

(c) Explain why the question ''*How many hours have you spent using social media in the last week*?" should produce quantitative data. **[2]**

Credit **could** be given for:
- Identification of key words such as "hours" or phrases such as "how many" suggest the question is eliciting a numerical response, ergo the content of the answer should be producing quantitative data.
- The question is quite 'closed'; so is more likely to produce quantitative data.

- Any other appropriate content.

Marks	**AO2**
2	• Reasonable explanation clearly linked to this research.
1	• Reasonable explanation not clearly linked to this research. **OR** • Basic identification of an appropriate explanation that has been linked to this research.
0	• Inappropriate answer given. • No response attempted.

(d) Explain why the mean may not be an appropriate measure of central tendency for describing the number of hours spent using social media in the last week. **[3]**

Credit **could** be given for: • Most scores given by the 10-14 year olds are similar, apart from one anomalous result (participant 4) and this may result in the mean score for the number of hours spent using social media is actually higher than most values in the data set. • Creates a value that was not attained by any of the young people. • Any other appropriate content.	
Marks	**AO2**
3	• Reasonable explanation is appropriate and clearly linked to the research.
2	• Basic explanation and clearly linked to this research. **OR** • Reasonable explanation not linked to this research.
1	• Superficial explanation linked to this research. **OR** • Basic explanation not linked to this research.
0	• Inappropriate answer given. • No response attempted.

(e) Identify the sampling technique used by the developmental psychologist in this research. **[1]**

Credit **could** be given for: • Snowball sampling (as initial participant recruited other participants). • Opportunity (as the initial participant was a neighbour). • Any other appropriate content. N.B. Only identification required to achieve credit.	
Marks	**AO2**
1	• Appropriate identification of an appropriate sampling technique.
0	• Inappropriate answer given. • No response attempted.

(f) The psychologist decided that she wanted to complete a case study with one of the 10-14 year olds. Explain how the psychologist could complete this case study. **[3]**

Credit **could** be given for:

- Explanation that offers a more general explanation on how to complete a case study.
- Explanation that is specifically focused and offers a more step-by-step approach to completing a case study (see below).

Exemplar answer:

1. The researcher should select an individual, or a small group of individuals, from the 10-14 age range who use social media.
2. Interview these individuals, using a mixture of questions, but are more probably 'open questions' about social media usage.
3. Sort through the information found in the initial interviews; identify if additional interviews need to be conducted addressing specific aspects of social media usage.
4. Interview the parents, teachers, friends, etc. of the case study and ask them about their perspective of the case study's social media usage.
5. Collect data from other sources, possibly even measure exactly how much time and when students use social media.
6. Analyse all of the collated information about social media usage and write–up the case study. [3 marks]

- Any other appropriate content.

Marks	AO2
3	• Reasonable explanation is appropriate and clearly linked to the research.
2	• Basic explanation and clearly linked to this research. **OR** • Reasonable explanation not linked to this research.
1	• Superficial explanation linked to this research. **OR** • Basic explanation not linked to this research.
0	• Inappropriate answer given. • No response attempted.