GCE A LEVEL MARKING SCHEME

SUMMER 2023

A LEVEL
PSYCHOLOGY – UNIT 4
1290U40-1

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INTRODUCTION

This marking scheme was used by WJEC for the 2023 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.

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WJEC GCE A LEVEL PSYCHOLOGY – UNIT 4

SUMMER 2023 MARK SCHEME

Question	AO1	AO2	AO3	TOTAL
1	4	4	6	14
2	4	12	0	16
3	1	5	4	10
4	1	9	10	20
TOTAL	**10**	**30**	**20**	**60**

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SECTION A – Personal Investigations

You should answer **all** the questions in this section with reference to the personal investigations carried out in your study of psychology.

INVESTIGATION ONE:

A content analysis of antisocial behaviour in the media.

1. (a) Explain how you collected the data for your content analysis. [4]

Marks	AO1
Credit **will** be given for: • Use of behavioural checklists detailing types of antisocial behaviour e.g., hitting, swearing, kicking, vandalism. • Type of media/artefacts used e.g., magazines, video games, films, T.V. • How qualitative data was transferred into quantitative data e.g., through themes, codes, categories. • Any other appropriate content.	
3-4	• Reasonable explanation of how the data was collected for the content analysis. • Appropriate use of terminology.
1-2	• Basic explanation of how the data was collected for the content analysis. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(b) (i) Explain **one** way the validity of your content analysis could be assessed. [2]

Marks	AO2
Exemplar answers: • The validity of the content analysis on antisocial behaviour in the form of negative comments responding to tweets on twitter could be assessed by using content validity. The test could be given to a member of staff, in the psychology department as an expert in the field of research in psychology, to scrutinise to check that the design of the content analysis is fair and measures the aims of the study. This assesses the internal validity of the content analysis. (2 marks) • Predictive validity could be used to predict future anti-social behaviour, such as bullying, in individuals who are exposed to this within interactions with social media. (1 mark) • Any other appropriate content.	
2	• Clear application to the research title. • Reasonable explanation of the way of assessing the validity of the research.
1	• Minimal application to the research title. • Basic explanation of the way of assessing the validity of the research.
0	• Inappropriate answer given. • No response attempted.

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(ii) Explain **one** way the reliability of your content analysis could be assessed. [2]

Marks	**AO2**
Exemplar answers: • The reliability of the content analysis on antisocial behaviour, negative comments responding to tweets on twitter, could be assessed by using inter-rater reliability. Another researcher could use the same coding system and the data collection could be compared. If there is 80% or above agreement then the content analysis will have internal reliability. (2 marks) • Inter-rater reliability as another researcher could collect the data using the same coding system to investigate antisocial behaviour on Twitter and their results could be compared to see if they're consistent. (1 mark) • Any other appropriate content.	
2	• Clear application to the research title. • Reasonable explanation of the way of assessing the reliability of the research.
1	• Minimal application to the research title. • Basic explanation of the way of assessing the reliability of the research.
0	• Inappropriate answer given. • No response attempted.

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(c) Evaluate **one** strength and **one** weakness of using a content analysis when investigating anti-social behaviour in the media. [3+3]

<table>
<tr><th>Marks</th><th>AO3</th></tr>
<tr><td colspan="2">Credit will be given for:

Strengths:
• It is useful to condense qualitative data relating to antisocial behaviour, in the form of negative tweets on twitter, into a quantitative form. This means it can be analysed, and trends and patterns can be identified.
• Easily replicated so the external reliability can be checked if the same media is accessible to everybody such as using open social media platforms, films, TV, magazines, newspapers etc. that are accessible to all. We can then see if antisocial behaviour in the media is consistent over time.

Weaknesses:
• It could be at threat of bias from the researcher as the researcher may choose the content that will support their hypotheses. For example, could choose media platforms that lend itself more to antisocial behaviour such as a form of social media like Twitter.
• Cause-effect relationships cannot be established because the authors of the artefacts, such as anonymous postings on social media, may be unknown and therefore cannot be questioned to how or why the behaviour was explored.

• Any other appropriate content.</td></tr>
<tr><td>3</td><td>• Reasonable evaluation of the strength/weakness of conducting a content analysis within research.
• Linked to anti-social behaviour in the media.</td></tr>
<tr><td>2</td><td>• Basic evaluation of the strength/weakness of conducting a content analysis within research.
• Linked to anti-social behaviour in the media.
OR
• Reasonable evaluation of the strength/weakness of conducting a content analysis within research.
• No link to anti-social behaviour in the media.</td></tr>
<tr><td>1</td><td>• Strength/weakness of conducting a content analysis stated.
• Linked to antisocial behaviour in the media.
OR
• Basic evaluation of the strength/weakness of conducting a content analysis within research.
• No link to anti-social behaviour in the media.</td></tr>
<tr><td>0</td><td>• Inappropriate answer given.
• No response attempted.</td></tr>
</table>

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INVESTIGATION TWO:

A questionnaire on pet ownership and stress.

2. (a) Using an example from your questionnaire, identify and explain what type of data you collected. [3]

Marks	AO1
Credit **will** be given for: • Qualitative data. • Quantitative data. • Nominal data. • Ordinal data. • Ratio data. • Interval data. • Any other appropriate content.	
3	• Identify type of data. • Example from questionnaire. • Explanation of type of data.
2	• Identify type of data **OR** explanation of type of data. • Example from questionnaire.
1	• Identify type of data. **OR** • Explanation of type of data.
0	• Inappropriate answer given. • No response attempted.

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(b) Describe **one** ethical issue you faced during your questionnaire study and explain how you dealt with it. [4]

Marks	AO2
Exemplar answers: • As the questionnaire was asking the students to record their daily stressors this could trigger anxiety or psychological harm when recalling the stressor. The way this issue was dealt with was through fully debriefing the students after the questionnaire. During the debrief, there were contact numbers given for support within the College should they need it to support them with any stressful life event. (4 marks) • One ethical issue we faced was confidentiality as the participants (students) didn't want their rating of daily stressors to be identifiable to them. This was dealt with by using numbers to refer to the participants and not their names. (3 marks) • One ethical issue was valid consent from the participants. This was dealt with by giving the participants a consent form before the study. The participants were asked to read the details of the questionnaire study on pet ownership and stress. They were made aware that the research could potentially trigger some anxiety when recalling daily stressors and were made aware they could withdraw from the investigation at any time. (2 marks) • One ethical issue was confidentiality of the data as the participant may not want to be identifiable. (1 mark) • Any other appropriate content. N.B. Credit not given for just identifying an ethical issue.	
For each identified ethical issue: • One mark for describing an appropriate ethical issue that is relevant to the personal investigation. • One mark for clearly linking the appropriate ethical issue to this personal investigation. • One mark for explaining an appropriate way of managing the risk posed by ethical issue in this personal investigation. • One mark for clearly linking the appropriate way of managing the risk posed by ethical issue to this personal investigation.	

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(c) (i) Identify **one** descriptive statistic you used to summarise the results of your questionnaire study. [1]

Marks	**AO1**
Credit **will** be given for: • Mean. • Median. • Mode. • Range. • Standard deviation. • Any other appropriate content. N.B. Credit will not be given for graphical representations or inferential statistics.	
1	• Appropriate descriptive statistic identified.
0	• Inappropriate answer given. • No response attempted.

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(ii) Justify why the descriptive statistic identified in (c) (i) was appropriate for your questionnaire study. [2]

Marks	AO2
Exemplar answers: • I chose the mean as the descriptive statistic to summarise my data because there were no outliers within the data set. The average rating for stress and owning a dog was 3 and the scores ranged from 1-5 with no extreme values affecting the results. The mean was the most sensitive measure of central tendency. (2 marks) • I chose the mean to summarise my data as there were no extreme values in the scores on the questionnaire. The scores ranged from 1-5. (1 mark) • I chose the range to summarise my data as there were no outliers within the data set. The average rating for stress and owning a dog was 3 and the scores ranged from 1-5 with no extreme values affecting the results. It was quicker and easier than standard deviation to measure the dispersion of the data. [2 marks] • I chose the range to summarise my data as there were no extreme values in the data collected from the questionnaire. The scores ranged from 1-5, and it was therefore quicker and easier than standard deviation. (1 mark) • Any other appropriate content.	
2	• Reasonable justification of the choice of the descriptive statistic with link to the research. • Appropriate use of terminology.
1	• Basic justification of the choice of the descriptive statistic with link to the research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(d) Justify the level of significance used when analysing the results of your questionnaire. [2]

Marks	AO2
Exemplar answers: • The level of significance I analysed my data with at was $p \leq 0.05$. I didn't want to make the probability too lenient or too stringent. The $p \leq 0.05$ level was a good indication of the result being significant as it only leaves a 5% margin for error or chance within the stress scores achieved by the dog owner and the non-dog owners. (2 marks) • I used the $p \leq 0.05$ level of significance as this is generally accepted in psychology. Therefore there was only a 5% chance that my results were not a result of my IV (dog owner or not). (2 marks) • The level of significance I analysed my data at was $p \leq 0.01$ as I wanted to be sure that the stress score was significant with only 1% risk of chance/error. (1 mark) • Any other appropriate content.	
2	• Reasonable justification of the choice of the level of significance with link to the research. • Appropriate use of terminology.
1	• Basic justification of the choice of the level of significance with link to the research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(e) With reference to the inferential statistic you used, justify which hypothesis was accepted and which hypothesis was rejected. [4]

Marks	AO2
Exemplar answers: • I used a Chi-Square to analyse the data and the observed value (2.84) was less than the critical value for a two-tailed test (3.84) set at $p \leq 0.05$. This led to the null hypothesis being accepted and the alternative hypothesis being rejected. The result was, therefore, not significant and there was no difference in owning a dog or not in the amount of daily uplifts reported. (4 marks) • As the observed value was less than the critical value for my questionnaire on owning a dog and stress, I rejected the alternative hypothesis and accepted the null hypothesis using a Chi-Square test to analyse the data. (2 marks) • Any other appropriate content.	
3-4	• Reasonable justification of whether the results of the questionnaire allowed the alternative hypothesis to be accepted or rejected. • Clear link to the questionnaire study. • Appropriate use of terminology.
1-2	• Basic justification of whether the results of the questionnaire allowed the alternative hypothesis to be accepted or rejected. • Minimal link to the questionnaire study. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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SECTION B – Application of research methods to novel scenarios

Answer **all** questions.

3. A woman, known as M.T., had an accident and suffered a brain injury which resulted in her suffering from memory and speech problems. Whilst receiving treatment for her injuries, a researcher conducted a case study on M.T. One method used to investigate the extent of M.T.'s brain injury was a brain scan.

(a) (i) Identify **one** type of brain scan. [1]

Marks	**AO1**
Credit **will** be given for: • Computed Axial Tomography (CAT) scan. • Magnetic Resonance Imaging (MRI) scan. • Positron Emission Tomography (PET) scan. • Electroencephalogram (EEG). • Any other appropriate content.	
1	• Appropriate brain scan identified.
0	• Inappropriate answer given. • No response attempted.

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(ii) Evaluate **one** strength and **one** weakness of using the brain scan you identified in (a)(i). [2+2]

Marks	AO3
Credit **will** be given for: **Strengths:** **CAT:** • Useful at revealing abnormal brain structures such as tumours or structural damage. • The quality of the images is much higher than traditional x-rays. **MRI:** • MRI scans give more detailed images of the soft tissue in the brain compared to other scans such as CAT scans. • MRI scans are best suited when a patient is to undergo examination several times in a short period of time because, unlike CAT scans, it doesn't expose the patient to hazardous radiation. **PET:** • PET scans reveal chemical information that is not available with other imaging techniques. • Useful for research as they look at more active brain areas so could see which part of the brain has been affected by the accident. **EEG:** • They are an extremely quick and relatively cheap way of checking the functioning of different areas of the brain. **Weaknesses:** **CAT:** • CAT scans require much more radiation than x–rays and the more detailed and complex the CAT scan is, the more radiation exposure the patient receives. • CAT scans only provide a researcher with the structure of the brain, not the electrical activity of the brain. **MRI:** • MRI scans take a long time and can be uncomfortable for patients. **PET:** • It is an extremely costly technique and, as a result, not easily available for research. • Less precise than some other brain scans such as MRI scans. **EEG:** • They are not useful for pin-pointing the exact source of brain activity. • Any other appropriate content.	
2	• Reasonable evaluation of the strength/weakness of using the brain scan to investigate behaviour.
1	• Basic evaluation of the strength/weakness of using the brain scan to investigate behaviour.
0	• Inappropriate answer given. • No response attempted.

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(b) Justify the use of a case study as the methodology of this research. [2]

Marks	AO2
Exemplar answers: • A case study would be appropriate to investigate the memory and speech problems of M.T. allowing for an in-depth study of how the accident has affected memory and speech enabling the production of quantitative and qualitative data through a variety of methods such as brain scans, experimental methods, interviews, and observations allowing for both qualitative and quantitative data. (2 marks) • A case study would be appropriate to investigate the memory problems of M.T. as it provides in depth data on how memory and speech has been affected. (1 mark) • Any other appropriate content.	
2	• Reasonable justification of the use of a case study to investigate behaviour with link to the research. • Appropriate use of terminology.
1	• Basic justification of the use of a case study to investigate behaviour with link to the research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(c) Apart from a brain scan, briefly explain how **one** other methodology could be used to investigate the effect of M.T.'s brain injury. [3]

Marks	AO2
Exemplar answers: • A laboratory experiment could be used to investigate the affect the brain injury has upon M.T.'s speech and memory problems. M.T. could be shown 7 objects and then asked to recall the items after 15 seconds. This could be repeated 3 months after treatment using a different 7 objects to assess whether memory has improved with treatment. (3 marks) • An observation could be used to investigate the affect the brain injury has upon M.T.'s speech as could be observed having a conversation with someone to assess the speech pattern. (2 marks) • An interview could be used to see how she responds to questions when speaking. (1 mark) • Any other appropriate content.	
3	• Thorough explanation of how another research method could be used within the case study. • Clear link to the research. • Appropriate use of terminology.
2	• Reasonable explanation of how another research method could be used within the case study. • Reasonable link to the research. • Reasonable use of terminology.
1	• Superficial explanation of how another research method could be used within the case study. • Superficial link to the research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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4. A psychologist conducted an experiment on whether familiarity with the teacher affects students' obedience within a classroom. The psychologist used an opportunity sample of 10 male and 20 female students from one GCSE class. In their Monday morning lesson, their usual teacher taught the lesson. On Wednesday afternoon, a teacher not known to the students taught the lesson. Both lessons were secretly filmed, and independent reviewers noted down how many students obeyed (completed the task) or disobeyed (did not complete the task) the teacher. A table of results can be seen below.

	Number of students	
	Obeyed	Disobeyed
Familiar teacher	22	8
Unfamiliar teacher	17	13

(a) (i) Fully explain how the independent variable was operationalised in this research. [2]

Marks	AO2
Exemplar answers: • The IV (familiarity) was clearly operationalised within the experiment by either using the students' usual teacher (familiar) or an unknown teacher (unfamiliar) to test the level of obedience. (2 marks) • The IV was operationalised by having a familiar or unfamiliar teacher. (1 mark) • Any other appropriate content.	
2	• Reasonable explanation of how the IV is operationalised with link to the research. • Appropriate use of terminology.
1	• Basic explanation of how the IV is operationalised with link to the research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(ii) Fully explain how the dependent variable was operationalised in this research. [2]

Marks	AO2
Exemplar answers: • The DV (level of obedience) was clearly operationalised by having independent reviewers counting how many students obeyed the familiar and unfamiliar teacher through completion of the task. (2 marks) • The DV was operationalised by counting how many students obeyed the familiar and unfamiliar teacher. (1 mark) • Any other appropriate content.	
2	• Reasonable explanation of how the DV is operationalised with link to the research. • Appropriate use of terminology.
1	• Basic explanation of how the DV is operationalised with link to the research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

(b) Explain how **one** confounding variable could affect this research. [2]

Marks	AO2
Exemplar answers: • One of the student's may have had a poor night sleep on the Tuesday evening and be too tired to complete the task set by the unknown teacher in the lesson on Wednesday afternoon. This could affect the internal validity as the behaviour is different from the other condition but not due to the IV. (2 marks) • Some of the students have had a hard test on the Wednesday morning and be in a bad mood by the afternoon and not want to complete the task. (1 mark) • Any other appropriate content. NOTE: Confounding variables are those that affect some participants but not others, having negative consequences for reliability/validity of results.	
2	• Reasonable explanation of how the confounding variable affects this research. • Appropriate use of terminology.
1	• Basic explanation of how the confounding variable affects this research. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(c) (i) Identify the inferential statistical test the researcher would need to use to analyse his data. [1]

Marks	AO1
Credit **will** be given for: • Sign Test • Any other appropriate content.	
1	• Appropriate inferential statistical test identified.
0	• Inappropriate answer given. • No response attempted.

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(ii) Fully justify why the inferential statistical test identified in (c) (i) would be appropriate for the researcher to use when analysing the data in this research. [3]

Marks	AO2
Exemplar answers: • The Sign test would be an appropriate choice as the experiment is a test of a difference investigating whether there is a difference in the levels of obedience to the known teacher and unknown teacher. The data was related as the students were tested on a Monday morning and then the same students tested on a Wednesday afternoon. The data was nominal as the independent reviewers categorised them into number of students who completed the task and number who didn't complete the task. (3 marks) • The Sign test would be an appropriate choice as the experiment is a test of a difference investigating whether there is a difference in the levels of obedience to a known teacher and unknown teacher. The data was related as the students were tested on a Monday morning and then the same students tested on a Wednesday afternoon. The data was nominal. (2 marks) • The Sign test would be an appropriate choice as the experiment is a test of a difference investigating whether there is a difference in the levels of obedience to a known teacher and unknown teacher. The data was related. The data was nominal. (1 mark) • Any other appropriate content. N.B. (i) Use of a repeated measures design could be used as an alternative to related data. (ii) If the incorrect statistic has been identified in (c) (i), candidates can still receive credit for each correctly explained and linked condition.	
3	**All** the following conditions included in the justification: • Test of a difference noted and linked to research. • Level of measurement noted and linked to research. • Related data noted and linked to research.
2	**Two** of the following conditions included in the justification: • Test of a difference noted and linked to research. • Level of measurement noted and linked to research. • Related data noted and linked to research.
1	**One** of the following conditions included in the justification: • Test of a difference noted and linked to research. • Level of measurement noted and linked to research. • Related data noted and linked to research.
0	• Inappropriate answer given. • No response attempted.

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(d) Evaluate **one** strength and **one** weakness of opportunity sampling. [2+2]

Marks	AO3
Credit **will** be given for: **Strengths:** • Quicker and easier than another named sampling method. • The sample is readily available to the researcher. **Weaknesses:** • Biased – lacks population validity. • Ethics (valid consent) if P's feel obliged to take part due to being asked. • Any other appropriate content.	
2	• Reasonable evaluation of a strength/weakness of using an opportunity sample.
1	• Basic evaluation of a strength/weakness of using an opportunity sample.
0	• Inappropriate answer given. • No response attempted.

(e) The experimental design used in this research was repeated measures. Evaluate the repeated measures experimental design. [3]

Marks	AO3
Credit **will** be given for: • Increased chance of order effects which could threaten the internal validity if counterbalancing has not been conducted. • Increased chance of demand characteristics which could threaten the internal validity. • No participant variables as participants are the same in both conditions which increases the validity. • Less participants are needed as all participants take part in both conditions making it more efficient to recruit participants. • Any other appropriate content.	
3	• Thorough evaluation of a repeated measures design. • Appropriate use of terminology.
2	• Reasonable evaluation of a repeated measures design. • Reasonable use of terminology.
1	• Superficial evaluation of a repeated measures design. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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(f) Discuss **one** way in which this research improves on Milgram's (1963) '*Behavioral Study of Obedience*'. [3]

Marks	**AO3**
Credit **will** be given for: A discussion of the following that make the experiment better than Milgram's study: • Ethics. • Validity. • Reliability. • Sample. • Methodology. • Any other appropriate content.	
3	• Thorough discussion of how the experiment improves upon Milgram's study. • Appropriate use of terminology.
2	• Reasonable discussion of how the experiment improves upon Milgram's study. • Reasonable use of terminology.
1	• Superficial discussion of how the experiment improves upon Milgram's study. • Limited use of terminology.
0	• Inappropriate answer given. • No response attempted.

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