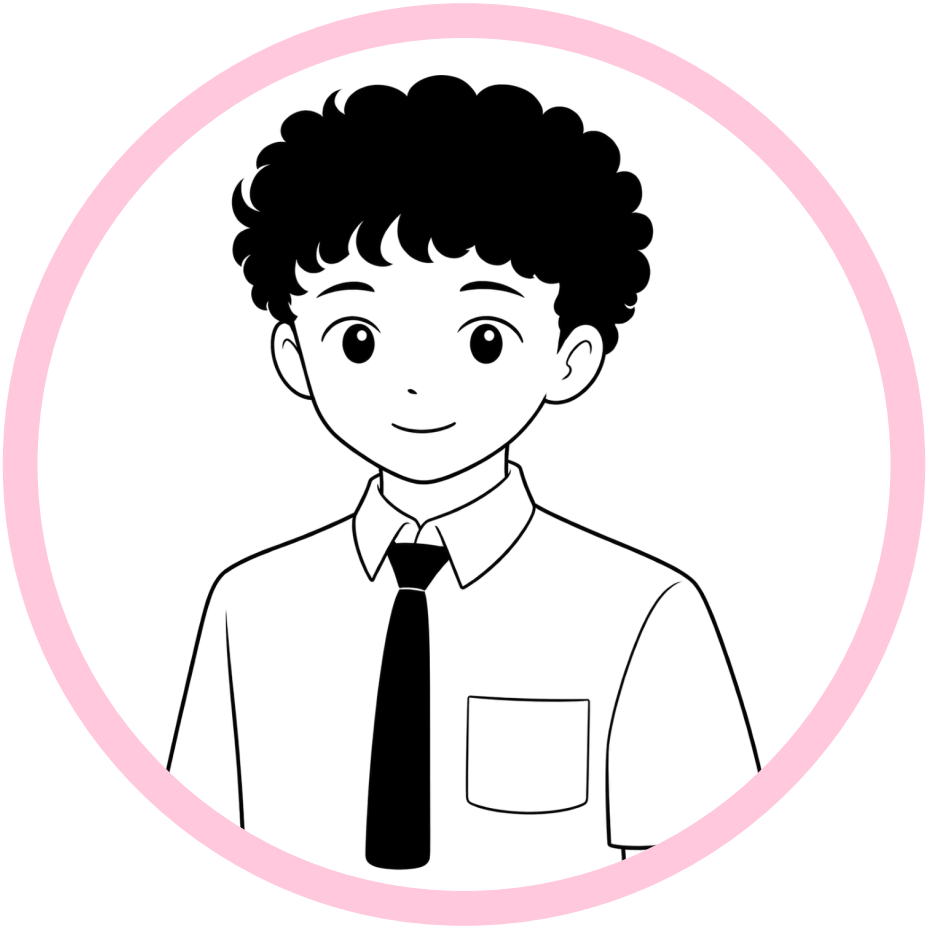
AQA A-LEVEL PSYCHOLOGY · 7182

PSYCHOLOGY



MARK SCHEME

3.2.3.1 PEER REVIEW

SCORE	PERCENTAGE
/56	%

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Q1.

(a) **[AO2 = 2]**

2 marks for 250 hours OR for 1000/10 x 2.5 = 250 hours OR for 100 x 2.5 = 250 hours

1 mark for correct workings but incorrect answer e.g. 15000 minutes.

2

(b) **[AO2 = 2]**

1 mark for correct identification

plus

1 mark for correct explanation

Possible content:
- primary data because the results came directly from the eye witnesses / because the data was collected by the psychologist specifically for the purpose of the investigation
- quantitative data because the psychologist used closed questions
- qualitative because the psychologist recorded what they said (in words).

Accept answers referring to levels of measurement with appropriate justification.

2

(c) **[AO3 = 2]**

2 marks for relevant modification that would reduce investigator effects in this study.

1 mark for a brief or muddled explanation.

Possible content:
- have an interviewer who had not witnessed the event / did not know the aims of the study so that they would not be affected by their own perception of the event
- use open-ended questions so that the interviewees were able to give a more detailed and accurate version of what they saw
- use questionnaire (or other means) to collect data without face to face interaction.

Credit other relevant suggestions that would reduce investigator effects in this study.

2

(d) **[AO2 = 2]**

2 marks for a clear, coherent outline with some detail.

1 mark for a limited / muddled outline, e.g. ‘other psychologists assess / check / review her research report’.

0 marks for ‘other psychologists look at the research’.

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Possible content:

- her report would be sent for independent scrutiny (checked / reviewed) by other psychologists
- they would consider e.g. validity, ethics, errors, significance, originality and possible improvements
- to see whether it should be published.

Credit other relevant answers that can be applied to the stem.

2

[8]

Q2.

(a) **[AO2 = 1]**

1 mark

A

(b) **[AO2 = 2]**

2 marks for identification of the operationalised dependent variable: running time in seconds/time in seconds taken to run.
1 mark for dependent variable not operationalised: time in seconds; running time.
0 marks for incorrect reference to speed or to the IV.

(c) **[AO2 = 2]**

1 mark for explaining **either** you need to have continuous data **or** scores for each participant in order to draw a histogram.

Plus

1 mark for identifying that the data represents two separate conditions (with music/without music). Accept categorical/nominal.

Note: credit can be given for two separate conditions if the student explains clearly why this would make a histogram “inappropriate”.

(d) **[AO3 = 3]**

1 mark for each bullet point:

- a bar chart
- appropriate X-axis label eg ‘With or without music’; ‘Auditory Condition’, etc.
- appropriate Y-axis label eg ‘Mean/Average (400m) time in seconds’.

Note: these are independently awarded marks, eg candidates can achieve 2 marks for correctly labelled axes despite an incorrect graph type

Note: axis labels are interchangeable.

(e) **[AO2 = 2 AO3 = 2]**

Mean:

1 mark for interpreting what the mean times suggest about the effect of music on the participants’ 400m performance – participants run faster with music (take less time to run 400 metres) or participants run more slowly without music (take more

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time to run 400 metres). Accept alternative wording.

Plus

1 mark for an accurate justification about the difference in the mean scores in each condition – mean time is greater in condition A than condition B (or mean time is lower in condition B than condition A).

Standard deviation:

1 mark for an accurate comment about what the standard deviations suggest about the spread of scores in each condition – performance is more consistent in condition A than condition B (or performance is less consistent in condition B than condition A). Accept alternative wording.

Plus

1 mark for a justification about the difference between the standard deviations in each condition – standard deviation is smaller in condition A than in condition B (or standard deviation is greater in condition B than condition A).

Note: **0 marks** for just stating the data from the table, eg the mean time with music is 117 whereas it is 123 without music.

(f) **[AO2 = 4]**

Marks are for calculations and/or numerical answer – no need to show unit (%)

4 marks for the correct answer given to three significant figures: 4.88 (even if no correct workings are shown).
3 marks for correct answer **not** given to three significant figures eg 4.878 or 4.9.
2 marks if incorrect answer is provided even if all working is correct.
1 mark if incorrect answer and workings are partially correct eg one or two of the correct steps.
0 marks if the incorrect answer is given to three significant figures.

Correct workings:
123 − 117 = 6
6 ÷ 123 =0.048780
0.048780 × 100 = 4.878
Answer = 4.88

Note: alternative methods used for working may be creditworthy.

(g) **[AO2 = 5]**

1 mark for each bullet point:

A t-test is an appropriate choice of test for this data because
- a difference between the two sets of data is predicted
- the data is of interval/ratio level
- a repeated measures design has been used.

Credit other appropriate reasons e.g. reasons related to possible normal distribution, power of the test.

Plus

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1 mark for each bullet point:

- the result is not significant (at the 5% level)
- because the calculated value of t (1.4377) is less than the critical/table value of t, which is 1.833 (at 0.05, for a directional hypothesis where df is 9).

(h) **[AO1 = 3]**

2 marks for a clear and coherent definition of a Type II error.

A Type II error would occur where a real difference in the data is overlooked as it is wrongly accepted as being not significant, accepting the null hypothesis in error (a false negative).

1 mark for a limited or incomplete definition of a Type II error.

Plus

1 mark for a reason for why the 5% level of significance is used in psychological research.

The 5% level is used as it strikes a balance between the risk of making the Type I and II errors (or similar).

(i) **[AO2 = 2 AO3 = 1]**

1 mark for identification of **one** appropriate extraneous variable eg type/rhythm of music/equipment/environmental variables.

Note – participant variables only acceptable if feasibly could have changed in a week eg illness/hydration level/injury/etc.

Plus

1 mark for an explanation of why it is important to control their chosen variable in the context of this study ie the impact on the DV.

Plus

1 mark for how the stated variable could be controlled.

(j) **[AO1 = 6]**

Level	Marks	Description
3	5 – 6	Knowledge of the process and purposes of peer review is clear and generally accurate. Specialist terminology is used appropriately.
2	3 – 4	Some knowledge of the process and/or purposes of peer review but there may be some omissions/lack of clarity. There is some appropriate use of specialist terminology.
1	1 – 2	Knowledge of the process and/or purposes of peer review is present but there may be serious omissions and/or inaccuracy. Specialist terminology is either missing or inappropriately used.

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	0	No relevant content.

Possible content:

Process
- other psychologists check the research report before deciding whether it could be published
- independent scrutiny by other psychologists working in a similar field
- work is considered in terms of its validity, significance and originality
- assessment of the appropriateness of the methods and designs used
- reviewer can accept the manuscript as it is, accept with revisions, suggest the author makes revisions and re-submits or reject without the possibility of re-submission
- editor makes the final decision whether to accept or reject the research report based on the reviewers' comments/recommendations
- research proposals are submitted to panel and assessed for merit.

Purposes
- to ensure quality and relevance of research, eg methodology, data analysis etc
- to ensure accuracy of findings
- to evaluate proposed designs (in terms of aims, quality and value of the research) for research funding.

Credit other relevant material.

Q3.

[AO3 = 2]

2 marks for a clear and coherent explanation of one reason.

1 mark for a partial or muddled explanation of one reason.

Possible content:

- prevents dissemination of irrelevant findings / unwarranted claims / unacceptable interpretations / personal views and deliberate fraud – improves quality of research
- ensures published research is taken seriously because it has been independently scrutinised
- increases probability of weaknesses / errors being identified – authors and researchers are less objective about their own work.

Accept other valid answers.

Q4.

AO1 = 2

Peer review is the process of subjecting a piece of research to independent scrutiny by other psychologists working in a similar field who consider the research in terms of its validity, significance and originality.

0 marks for 'other psychologists look at the research'.

1 mark for a very brief outline eg 'other psychologists look at the research report

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before it is published'. Award one further mark for elaboration.

Q5.

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

Although the essential content for this mark scheme remains the same, mark schemes for the new AQA Specification (Sept 2015 onwards) take a different format as follows:

- A single set of numbered levels (formerly bands) to cover all skills
- Content appears as a bulleted list
- No IDA expectation in A Level essays, however, credit for references to issues, debates and approaches where relevant.

AO2 / AO3 = 4

Peer reviewed research may be accepted, sent back for revisions or rejected. Peer review is an important part of the scientific process because:

- It is difficult for authors and researchers to spot every mistake in a piece of work. Showing the work to others increases the probability that weaknesses will be identified and addressed.

- It helps to prevent the dissemination of irrelevant findings, unwarranted claims, unacceptable interpretations, personal views and deliberate fraud.

- Peer reviewers also judge the quality and the significance of the research in a wider context.

- This process ensures that published research can be taken seriously because it has been independently scrutinised by fellow researchers.

No credit for merely re–stating what is meant by peer review.

AO2 / AO3 Mark Band
4 marks Effective Effective analysis and understanding. The answer contains a coherent explanation of the importance of peer review. Ideas are well structured and expressed clearly and fluently.
3 marks Reasonable Reasonable analysis and understanding. The answer includes one or more of the above points about the importance of peer review. Most ideas appropriately structured and expressed clearly.
2 marks Basic Basic, superficial understanding. The answer shows a basic understanding of the importance of peer review.
1 mark Rudimentary Rudimentary with very limited understanding.

The answer is weak, muddled and may be mainly irrelevant.
0 marks No creditworthy material is presented.

Q6.

AO1 = 2

Peer review is the process by which psychological research papers, before publication, are subjected to independent scrutiny by other psychologists working in a similar field who consider the research in terms of its validity, significance and originality.

0 marks for 'other psychologists look at the research'.
1 mark for a very brief outline eg 'other psychologists look at the research report before it is published.'
One further mark for elaboration.

Q7.

Please note that the AOs for the new AQA Specification (Sept 2015 onwards) have changed. Under the new Specification the following system of AOs applies:

- AO1 knowledge and understanding
- AO2 application (of psychological knowledge)
- AO3 evaluation, analysis, interpretation.

Although the essential content for this mark scheme remains the same, mark schemes for the new AQA Specification (Sept 2015 onwards) take a different format as follows:

- A single set of numbered levels (formerly bands) to cover all skills
- Content appears as a bulleted list
- No IDA expectation in A Level essays, however, credit for references to issues, debates and approaches where relevant.

AO2 / 3 = 5

Peer review is an important part of this process because it provides a way of checking the validity of the research, making a judgement about the credibility of the research and assessing the quality and appropriateness of the design and methodology. Peers are also in a position to judge the importance or significance of the research in a wider context. They can also assess how original the work is and whether it refers to relevant research by other psychologists. They can then make a recommendation as to whether the research paper should be published in its original form, rejected or revised in some way. This peer review process helps to ensure that any research paper published in a well-respected journal has integrity and can, therefore, be taken seriously by fellow researchers and by lay people.

AO2/3 marks
5 marks Effective Effective analysis and understanding. The answer is well focused and shows coherent elaboration. Ideas are well structured and expressed clearly and fluently. Consistently effective use of psychological terminology. Appropriate use of grammar, punctuation and

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spelling.
4 – 3 marks Reasonable Reasonable analysis and understanding. The answer is generally focused and shows reasonable elaboration. Most ideas appropriately structured and expressed clearly. Appropriate use of psychological terminology. Minor errors of grammar, punctuation and spelling only occasionally compromise meaning.
2 marks Basic Basic, superficial understanding. The answer is sometimes focused and shows some evidence of elaboration. Expression of ideas lacks clarity. Limited use of psychological terminology. Errors of grammar, punctuation and spelling are intrusive.
1 mark Rudimentary Rudimentary with very limited understanding. The answer is weak, muddled and may be mainly irrelevant. Deficiency in expression of ideas results in confusion and ambiguity. The answer lacks structure, often merely a series of unconnected assertions. Errors of grammar, punctuation and spelling are frequent and intrusive.
0 marks No creditworthy material is presented.

Q1.

Part (a) was an easy part of the question for most students. However, they do need to be very careful with the clarity of their handwriting in questions such as this one. It was sometimes difficult to determine whether the answer was 250 or 230. There were some careless maths errors, such as "losing" a zero, or by giving the answer in minutes rather than hours.

Part (b) was another part of the question students found easy. The most common answer was quantitative data because she used closed questions. Credit was also given to those who chose qualitative data because she recorded what they said; or primary data because she collected the data specifically for this study.

In part (c), while some students were able to provide accurate answers showing good understanding, others merely described what the investigator effect was, rather than how to reduce it. This is yet another example of the need to read the question carefully. Better answers were able to suggest getting someone else who had not been at the concert to ask the questions, or to avoid having the investigator present by using a questionnaire. It was very clear from the answers to part (d) that a large number of students had no idea what the purpose of a peer review is. They seemed to think that a journal was something the psychologist kept herself. However, a small minority of students were able to explain that the process was to determine whether or not the journal should publish her report. This would involve a group of experts in the same field evaluating her report to make this decision.

Q2.

(a) This question was well answered with over 90% of students correctly identifying the type of experiment used in the study.

(b) Almost half of the students gained full credit for this question. Unfortunately, a few gave the independent variable instead of the dependent variable, or got confused with speed or the distance they had to run. Many students failed to state that the running time was measured in seconds.

(c) This question was generally poorly answered, with 57% of students failing to achieve any marks and 3% not attempting it. There was an occasional reference to *‘“the need for continuous data”’*, but very few students gained the second mark. Overall, there was a lack of understanding about what a histogram is or when they should be used and schools/colleges need to address this. A common incorrect answer was to assume a histogram is used for a correlation.

(d) This question was reasonably well answered. Unfortunately, a number provided a full title instead of naming the type of graph, although when these included reference to a bar chart they received appropriate credit. A number of the axis labels were vague, omitting *“seconds”* or *“mean/average”*, or just writing *“conditions”*. There was also some confusion regarding the type of graph with *“scattergram”* being the most common incorrect response.

(e) Although there were some strong responses, generally students found this harder than anticipated. A number failed to receive any credit due to simply defining the mean and the standard deviation. It was also far too common for students not to understand and answer the ‘justify’ component of the question. Many students simply restated information from the table or provided possible explanations or

conclusions, as opposed to justifications. Although students generally saw the mean as showing a difference, there was often the claim that music hindered performance, with confusion regarding time being a higher score, meaning slower. Worryingly, some students still have little understanding of standard deviation.

(f) Despite 36% of students not having the mathematical skills to answer this question appropriately and 3% not even attempting it, those who did have the knowledge answered it well. Some missed or did not understand the requirement for three significant figures.

(g) This question was generally answered very well, with the majority of students achieving all five marks. Impressively, nearly all students identified the points in mark scheme for choice of test and most could justify why the result was not significant, although a few picked the wrong critical value from the table.

(h) Many students could correctly define a Type II error, although there was some limited descriptions and some confusion between Type I and Type II errors. Few students managed a coherent response to the second part of question, requiring an explanation as to why the 5% level is normally used in research. Many were not clear about the balance between making Type I and Type II errors, suggesting that a 5% level prevented these errors from occurring. Weaker students did little beyond stating that it is used because of convention.

(i) From the stem of the question, a clearly uncontrolled variable was the type of music participants listened to in condition B. Surprisingly few students identified this extraneous variable but there were a variety of environmental factors given that received credit, if they could have feasibly changed within one week and affected the running times. Unfortunately, over half of the students appeared not to have read the stem properly and therefore offered inappropriate extraneous variables, thus gaining zero marks. The most common inappropriate variables were participant variables, which would not have feasibly changed within the week, for example running ability, fitness level, age or gender, or issues regarding order effects, which would have been addressed by the design of the study.

(j) This question was generally quite poorly answered. Although many students could gain some credit by defining what peer review is, very few demonstrated a detailed understanding of theprocesses or the purposes of it, with the majority achieving level 2. Many students made no reference to publication and saw it as a simple checking method, often with the misconception that it involves the reviewer repeating the study. Stronger students gave the process and then proceeded to give its purpose, whereas weaker ones wrote all they knew, including pre-learned evaluative points that did not gain credit. Despite some impressive answers that showed detailed knowledge of both process and purpose, overall students had very limited or no practical understanding of what peer review involves and teachers are encouraged to address this.

Q4.

This question required an explanation of peer review. Just under half of students achieved the full two marks and most other answers demonstrated a basic understanding that the process involved getting an expert to look at the report. However, many failed to understand that peer review occurs prior to publication.

Q5.

This was poorly answered with less than 5% of students achieving the full 4 marks available. Most students had a basic idea that peer review prevents weak or fraudulent

research getting into the public domain but could say little beyond this. There were many weak answers referring to ‘checking reliability and validity’ or referring to replication which demonstrated a worrying lack of understanding of the functions of peer review. A number of students became side-tracked into the role of peer review in grading university departments. Some weaker students confused peer review with an ethics panel. Stronger students were able to discuss the importance of peer review where research has clear practical applications, such as therapeutic interventions.

Q6.

Many candidates seemed not to have heard of this term, and attempts to guess were unsuccessful eg ‘working with your friends’. A common misconception was that it was a marking exercise to give feedback during the research process. There were also many tautological answers such as ‘getting a peer to review your work’. Many candidates appeared to have an idea of what peer review was, but were unable to articulate it in the way that would get them full marks.

Q7.

Candidates who understood peer review were able to give a reasonable answer, but not many showed the elaboration needed for full marks. Many expanded on what it is rather than why it is important. A common error was that it enabled peers to replicate the research. While ethical considerations could have been of relevance, some candidates did not understand that peer review is a retrospective process and can only prevent ethical problems being repeated. A surprising minority talked about corrupt peers who would give a negative review to maintain their own interests.