

Scientific Processes (A2 Only) - Mark Scheme

Q1.

[AO1 = 3 AO2 = 2 AO3 = 3]

Level	Mark	Description
4	7-8	Knowledge of ethical implication/s of research in psychology is accurate with some detail. Application to topic is effective. Discussion is thorough and effective. Minor detail and / or expansion of argument is sometimes lacking. The answer is clear, coherent and focused. Specialist terminology is used effectively.
3	5-6	Knowledge of ethical implication/s of research in psychology is evident but there are occasional inaccuracies / omissions. Application to topic and / or discussion is mostly effective. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.
2	3-4	Limited knowledge of ethical implication/s of research in psychology is present. Focus is mainly on description. Any application / discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is used inappropriately on occasions.
1	1-2	Knowledge of ethical implication/s of research in psychology is very limited. Discussion / application is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.
	0	No relevant content.

Possible content:

- effects of research on participants
- effects of publication on wider public
- potential use of the findings, e.g. allocation of resources
- potential use of the findings, e.g. political consequences – changes in legislation
- potential bias against people of certain cultures / socioeconomic backgrounds
- potential influence on moral attitudes towards individual / social and ethnic groups
- economic implications, e.g. for further psychological research, e.g. funding etc
- description of relevant evidence.

Possible applications to topic:

- Milgram's obedience research and attitudes to people of different nationalities
- Bowlby's research and the effects on child-rearing / working mothers
- diagnosis of depression, schizophrenia, etc
- labelling, e.g. gender identity

- biological research into addiction / aggression / offending – issue of who is to blame, e.g. if offending / aggression / addiction is inherited
- Piaget's research into discovery learning – changes in education system / classroom practice
- implications of relationship counselling based on research into relationships
- how research into gender might affect parenting / educational practices.

Possible discussion points:

- use of evidence to explain / elaborate / analyse the implications
- how researchers have dealt with the implications
- cost / benefit discussion, e.g. consideration of whether the benefits of publication outweigh the costs
- short-term cost (at time of publication) versus long-term gain (in years to come and for future generations)
- issues of reflexivity - the influential position of the researcher and researcher responsibility.

Credit other relevant material.

Note: any topic in psychology is creditworthy.

[8]

Q2.

[AO3 = 2]

2 marks for an accurate reference including essential elements in the accepted format as follows (punctuation can be ignored):

Duck, S. (1992) Human relationships. London. Sage.

1 mark for a reference that contains at least surname, date and title in reference format (surname must be first).

0 marks for a reference that does not meet the descriptor for 1 mark.

Q3.

[AO1 = 2]

Possible content:

- The likelihood of the same differences occurring twice (or more), by chance alone are much smaller than when they occur the first time.
- Effects that occur in a study are more likely to be reliable if they occur in a repeat of the study – replication therefore increases (external) reliability.

Q4.

AO3 = 4

Strengths of questionnaires:

- Can be given to a large sample of people.
- Participants can answer the questionnaire without the need for the researcher to be present, so reducing experimenter bias.

- Compared with interviews they are easy to use, the researcher doesn't need any special training to use them.

For each strength, 1 mark for identifying the strength explicitly relevant to questionnaires and a further mark for explaining why it is a strength.

The first bullet point is an example of a 1-mark answer as there is no explanation of **why** it is a strength. The other two examples are 2-mark answers as there is some explanation. Candidates could also make reference to the advantage of specific types of questions on the questionnaire, i.e. open or closed.

Q5.

[AO3 = 4]

Up to two marks for outlining each problem. One mark for a brief point, 2nd mark for elaboration / explanation.

Possible content: problem of small sample not being representative; individual differences affecting generalisation; problem of sample generalisation including animals to humans; often difficult to represent the many different factors that characterise a population in the sample; problem of generalisability of findings from one culture to another / different cultures; general issue of subject matter being humans, thus varied and less predictable than subject matter in other sciences; generalisability across time; generalisability relating to task, context and location; relating findings from an experiment to life in the real world / beyond the immediate setting (ecological validity).

Credit use of evidence as elaboration.

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 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.

Q8.

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.

(a) **AO3 = 2**

Confidentiality could be maintained by making sure individuals are not identifiable when reporting the case study. This could be done by using a different name or initials, avoid publishing details of address, schools etc.

1 mark for identification of a relevant way.

2nd mark for some elaboration (which could be an example) or for identification of a second way of maintaining confidentiality.

(b) **AO2 = 2**

Psychologists may use psychological tests eg IQ testing. They could observe his behaviour in different situations. They might interview people, such as family members, to find out the circumstances of his early life.

1 mark for simply naming any appropriate techniques such as IQ test, observation or interviews.

2nd mark for some elaboration.

(c) **AO3 = 4**

The main limitation is that each individual, and their experience, is unique and the results cannot therefore be generalised to others. Evidence from an individual's past may be difficult to verify.

Researchers may get to know the individual well, which may lead to loss of objectivity.

Although description of specific case studies is not relevant, candidates may refer to examples as part of and explanation of limitations.

AO3 Knowledge of limitations of case studies
4 marks Accurate and reasonably detailed Accurate and reasonably detailed answer that demonstrates sound knowledge of at least one limitation.
3 marks Less detailed but generally accurate Less detailed but generally accurate answer that demonstrates relevant knowledge of at least one limitation.
2 marks Basic Basic answer that demonstrates some relevant knowledge of one or more limitations, but lacks detail and may be muddled.
1 mark Very brief / flawed Very brief or flawed answer demonstrating very little knowledge of limitations.
0 marks

No creditworthy material.

Q9.

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.

AO1 = 5

Replicability is the ability to check and verify scientific information.

Candidates could explain replicability as:

- the ability to repeat the method to assess if similar findings are achieved
- the ability to achieve similar findings.

Award 1 mark for a brief definition of replicability.

Tautological definitions eg merely stating that 'replicability is the ability to replicate' should not be awarded credit.

Replicability is an important part of the scientific process. Scientific method involves defining a problem and formulating a hypothesis which is tested with empirical research. Research findings are an important part of this process. If we wish to draw conclusions from research studies, the procedures and findings should be repeatable. Unrepeatable results may imply flaws or lack of control within the method used and are of limited use in theory construction.

Award up to 4 marks for an explanation of why replicability is important. This is likely to be contextualised within a description of the scientific method.

AO1 mark bands	
4 marks	Explanation is sound
3 marks	Explanation is reasonable
2 marks	Explanation is basic
1 mark	Explanation is rudimentary

0 marks

No creditworthy material