
Section C Psychological Research and Scientific Method

Answer **all** questions in this section.

This topic carries 35 marks.

Topic: Psychological Research and Scientific Method

It is thought that colours might affect our performance when carrying out certain tasks. Research in this area has been inconclusive. Some studies have shown that red improves performance but others have found the opposite. It could be that these contradictory results have arisen because red is beneficial only for certain kinds of mental processing. Some psychologists tested this hypothesis in a series of independent-groups design experiments using students at a Canadian university.

The experiments involved computer tasks, with either a red, blue or neutral background appearing on the monitor. The researchers found that participants were better at a word-recall task and a spell-checking task when the screen background was red rather than blue or neutral. However, participants thought of more creative ideas when the screen was blue rather than red or neutral.

The researchers concluded that red is beneficial for tasks that require attention to detail whereas blue aids creativity.

1	7
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 What were the researchers' aims in this study? (2 marks)

Imagine that you are writing up the report for this series of experiments.

1	8
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 What is the purpose of the introduction section of a report? (2 marks)

A psychological report also contains a discussion section. Researchers are expected to consider their findings critically and discuss issues such as validity.

1	9
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 What is meant by validity? (1 mark)

2	0
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 Explain how **one** factor in this study might affect its internal validity and how **one** factor might affect its external validity. (2 marks + 2 marks)

2	1
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 In the discussion section, researchers are also expected to consider any possible applications of their research. Suggest **one** practical application that might arise from these findings. (2 marks)

SECTION C PSYCHOLOGICAL RESEARCH AND SCIENTIFIC METHOD

Question 17

AO2/AO3 = 2 marks

They wanted to clarify some of the issues raised by previous research where some studies had shown that red facilitated tasks and other studies had shown the opposite. They believed that one way to reconcile these different findings was to look at particular cognitive tasks eg ones which required attention to detail and to compare them with tasks which tap into very different skills eg creativity and thus to narrow down the benefits of providing red backgrounds.

One mark for a brief answer eg 'they wanted to investigate the effects of colour on performance.' One further mark for elaboration, in relation to colour and / or performance.

Question 18

AO1 = 2 marks

Candidates need to show understanding of reporting conventions. The introduction is an important part of the report that provides background information on theories and studies relevant to the investigation. One mark for a brief explanation of the purpose eg 'It provides background information', and one further mark for elaboration or for other detail such as reviewing methodological issues or how the current aims/ hypothesis were derived.

Question 19

AO1 = 1 mark

In this question, candidates are not required to relate validity to this particular study so a general definition of validity is acceptable. Definitions of specific types of validity (eg population validity) can also gain credit.

Validity refers to how well a test or a piece of research measures what it says it measures = 1 mark.

Answers such as 'truth' or 'whether it is true' 'legitimacy' or 'accuracy' = 0 marks.

Question 22**AO2/AO3 = 2 marks**

If the researchers had judged the toys themselves, they might have been biased in favour of their hypothesis. There are no objective criteria for what makes a toy either practical or original. Independent judges would be able to decide between themselves on a set of criteria and then apply them to the toys made by the participants.

Some candidates might interpret 'independent judges' in this question to mean judges who do not confer with one another. In this case, an acceptable answer would be that they could not conform with one another when making their judgement.

One mark for a brief explanation, eg to avoid experimenter bias, and one further mark for elaboration, eg if the researchers judged the toys themselves.

An answer explaining the value of rating the toys should be credited.

Question 23**AO2/AO3 = 5 marks**

Candidates need to use the details in the description of the study to write an appropriate set of instructions for potential participants.

The instructions should be clear and succinct. They must:

- explain the procedures of this study relevant to participants
- include a check of understanding of instructions

They should also use language appropriate for a formal document and be as straightforward and courteous as possible.

This is not a consent form so explicit references to ethical considerations are not necessary for full marks. However, it is perfectly acceptable to include comments such as 'you are free to withdraw from the study at any time.'

AO3 Mark Bands**5 marks Effective**

The **standardised instructions** provide accurate detail of the procedure and go beyond the information given in the question eg provide details of time allowed.

4-3 marks Reasonable

The **standardised instructions** provide sufficient detail of the procedure in a reasonably clear form.

2 marks Basic

The **standardised instructions** provide some details of the procedure though these may not be clear.

1 mark Rudimentary

The **standardised instructions** provide few details of the procedure and may be muddled and or inaccurate. Omissions in the instructions compromise the procedure.

0 marks

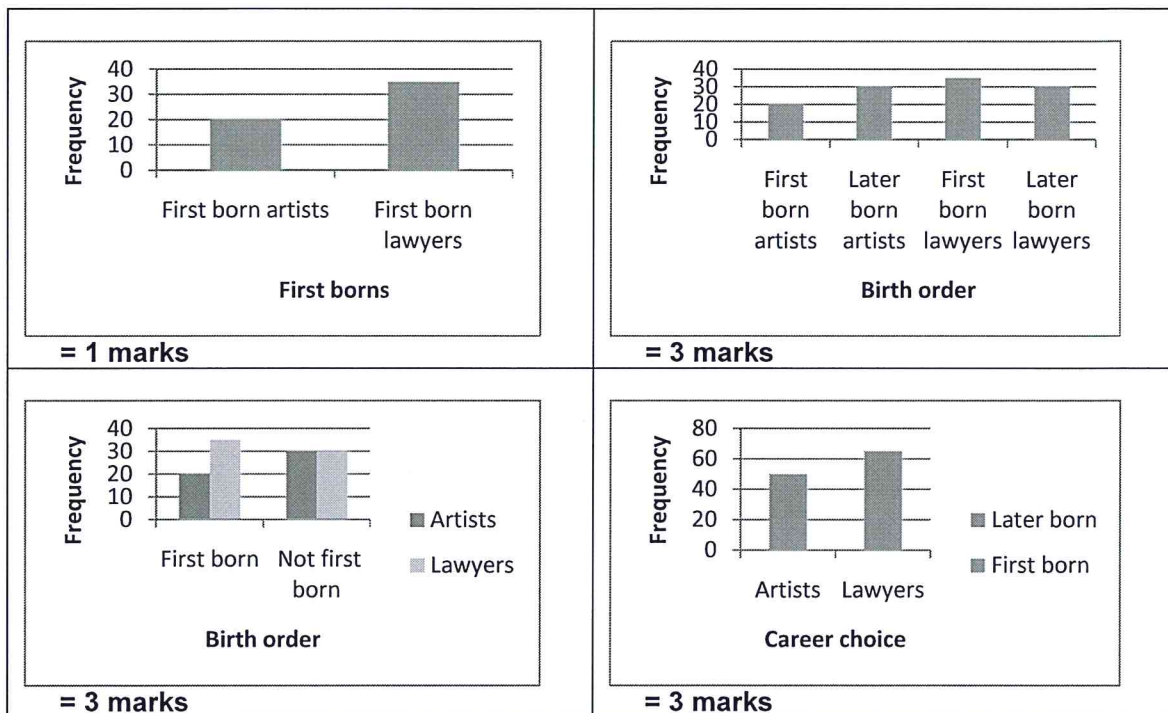
No creditworthy material is presented.

- a sketch of an appropriately labelled bar chart = 3 marks

For 3 marks, candidates need to display the data relating to first born and non-first born career choices on a bar chart. They should label axes correctly and draw the columns to the correct approximate height for a sketch

For 2 marks, candidates display data as above but labels are missing or lack clarity

For 1 mark, candidates graph the data supplied in the question relating to first born career choices only.



NB Labelled axes but no bars = 0 marks.

- identification of appropriate statistical test and justification = 1 + 2 marks

An appropriate test here is the Chi-squared.

Justification gains 2 marks. Any two correct reasons from:

- data are independent
- level of measurement is nominal
- test of association / difference is required.

- identification of appropriate significance level = 1 mark

The most likely significance level is 5% ($p \leq 0.05$). Candidates are not asked to justify their choice. Candidates who choose a more stringent level can achieve marks but they must then follow this through when they make their statement of results.