Psychology 2025 v1.2

IA1: Sample marking scheme

June 2025

Data test (10%)

This sample has been compiled by the QCAA to model one possible approach to allocating marks in a data test. It matches the examination mark allocations as specified in the syllabus (~ 30% apply understanding, ~ 30% analyse data and ~ 40% interpret evidence) and ensures that a balance of the objectives are assessed.

Assessment objectives

This assessment instrument is used to determine student achievement in the following objectives:

2. Apply understanding of brain function, sensation and perception, memory or learning to given algebraic, visual or graphical representations of scientific relationships and data to determine unknown scientific quantities or features.

3. Analyse data about brain function, sensation and perception, memory or learning to identify trends, patterns, relationships, limitations or uncertainty in datasets.

4. Interpret evidence about brain function, sensation and perception, memory or learning to draw conclusions based on analysis of datasets.

Note: Objectives 1, 5 and 6 are not assessed in this instrument.

Instrument-specific marking guide (IA1): Data test (10%)

Data test	Cut-off	Marks
The student response has the following characteristics:		

• consistent demonstration, across a range of scenarios, of
  – selection and correct application of scientific concepts, theories, models and systems to predict outcomes, behaviours and implications
  – correct calculation of quantities through the use of algebraic, visual and graphical representations of scientific relationships and data
  – correct and appropriate use of analytical techniques to correctly identify trends, patterns, relationships, limitations and uncertainty
  – correct interpretation of evidence to draw valid conclusions
	>90%	10

	>80%	9

• consistent demonstration of
  – selection and correct application of scientific concepts, theories, models and systems to predict outcomes, behaviours and implications
  – correct calculation of quantities through the use of algebraic, visual and graphical representations of scientific relationships and data
  – correct use of analytical techniques to correctly identify trends, patterns, relationships, limitations and uncertainty
  – correct interpretation of evidence to draw valid conclusions
	>70%	8

	>60%	7

• adequate demonstration of
  – selection and correct application of scientific concepts, theories, models and systems to predict outcomes, behaviours and implications
  – correct calculation of quantities through the use of algebraic, visual and graphical representations of scientific relationships and data
  – correct use of analytical techniques to correctly identify trends, patterns, relationships, limitations and uncertainty
  – correct interpretation of evidence to draw valid conclusions
	>50%	6

	>40%	5

• demonstration of elements of
  – selection and correct application of scientific concepts, theories, models and systems to predict outcomes, behaviours and implications
  – correct calculation of quantities through the use of algebraic, visual or graphical representations of scientific relationships or data
  – correct use of analytical techniques to correctly identify trends, patterns, relationships, limitations or uncertainty
  – correct interpretation of evidence to draw valid conclusions
	>30%	4

	>20%	3
• demonstration of elements of – application of scientific concepts, theories, models or systems to predict outcomes, behaviours or implications	>10%	2
	>1%	1

Data test	Cut-off	Marks

– calculation of quantities through the use of algebraic or graphical representations of scientific relationships and data
   – use of analytical techniques to identify trends, patterns, relationships, limitations or uncertainty
   – interpretation of evidence to draw conclusions.		

The student response does not match any of the descriptors above.		0

Task

See the sample assessment instrument for IA1: Data test (10%) (available on the QCAA Portal).

Sample marking scheme

Criterion	Marks allocated	Provisional marks
Data test Assessment objectives 2, 3, 4	10	—
Total	**10**	—

Marking scheme symbols and abbreviations

Symbol or abbreviation	Meaning
✓	The preceding section of the expected response is worth one mark.
/	Separates acceptable alternative wordings in the expected response.
()	Terms in brackets are not necessary in the response for the mark to be awarded.
<mark>shaded and underlined text</mark>	Shaded and underlined text must be included in the response for the mark to be awarded.
Accept converse.	Award the mark even if the answer is stated in its converse form, e.g. 'A comes before B' can be stated as 'B comes after A'.
Accept *min–max*.	Award the mark for any numerical answer that falls within the specified range, e.g. 'Accept 1.5–1.9' means that any answer between 1.5 and 1.9 should be considered correct. This is used in questions that involve a multi-step calculation where differences in rounding in the intermediate steps could result in slight differences in the final answer.
Allow for FT error …	Means 'allow for follow-through error'. Initial errors should only be penalised once. Marks should be awarded for subsequent steps that are correct.
Allow FT error for transcription only.	Follow-through error is only allowed if the student has written down information incorrectly but processed it correctly.
AND	Separates two parts of the response that are both required for the mark to be awarded.
Max. # marks.	The maximum number of marks that can be awarded for the question is indicated by #.
OR	Separates acceptable alternative wordings.
OWTTE	Means 'or words to that effect'. This is used in questions where students are unlikely to use the exact wording given in the expected response. If the student's response has the same meaning as the expected response, then the mark should be awarded.
Working not required.	Evidence of working, reasoning or calculations is not required for the mark to be awarded.

The annotations are written descriptions of the expected response for each question and are related to the assessment objectives.

Assessment objective — annotation	Expected response Note: ✓ = 1 mark	Mark allocation
Question 1		**1 mark**
Apply understanding The question requires students to identify. The expected response is an unknown scientific quantity.	HCV = 1.75 cm^3 ✓	1 mark for correct identification from Figure 1. Accept 1.75–1.76
Question 2		**2 marks**
Apply understanding The question requires students to calculate. The expected response is an unknown scientific quantity.	Range = 1.95-1.59 ✓ = 0.36 cm^3 ✓	1 mark for correct working. 1 mark for correct answer. Accept 0.34-0.38
Question 3		**1 mark**
Apply understanding The question requires students to determine. The expected response is an unknown scientific quantity.	Median = 13 years (9th value) ✓	1 mark for correct determination of value.
Question 4		**1 mark**
Analyse evidence The question requires students to identify. The expected response identifies a relationship.	The relationship is linear and negative. ✓	1 mark for identification of the relationship.

Assessment objective — annotation	Expected response Note: ✓ = 1 mark	Mark allocation
Question 5		**1 mark**
Analyse evidence The question requires student to contrast. The expected response identifies a relationship.	Pearson's correlation coefficient (r) is positive for the posterior HCV, whereas it is negative for the anterior HCV. OWTTE ✓	1 mark for identification of the relationship.
Question 6		**1 mark**
Interpret evidence The question requires students to draw a conclusion. The expected response draws a conclusion based on analysis.	There is a strong relationship between driving experience and hippocampal volume, which is positive for the posterior hippocampus and negative for the anterior hippocampus. OWTTE ✓	1 mark for correct conclusion.
Question 7		**2 marks**
Apply understanding The question requires students to calculate. The expected response is an unknown scientific quantity.	$\bar{x}\ mismatching = \frac{4+5+4+3+5+5+4+4+3+5}{10}$ ✓ $\bar{x}\ mismatching = 4$ ✓	1 mark for correct use of formula. 1 mark for the correct mean.
Question 8		**1 mark**
Analyse evidence The question requires students to identify. The expected response identifies a characteristic related to uncertainty.	There were no obvious outliers. OR The experiment used interval measurement. OR The raw data is discrete.✓	1 mark for the identification of a characteristic of the data that makes the mean an appropriate measure of central tendency.
Question 9		**1 mark**
Analyse evidence The question requires students to distinguish. The expected response identifies a relationship.	Data for the matching condition had a greater standard deviation (1.17) than the data for the mismatching condition (0.79). ✓	1 mark for the identification of the difference in standard deviation between conditions.
Question 10		**1 mark**

Assessment objective — annotation	Expected response Note: ✓ = 1 mark	Mark allocation
Interpret evidence The question requires students to deduce. The expected response reaches a conclusion based on analysis.	<mark>Matching</mark> condition ✓	1 mark for the deducing that the matching condition has greater variability in the data.
Question 11		**2 marks**
Analyse evidence The question requires students to identify. The expected response identifies characteristics related to uncertainty.	Small sample size makes it hard to judge normality. ✓ AND Standard deviation is different between the groups. ✓	1 mark for identification of a relevant characteristic 1 mark for identification of a second relevant characteristic.
Question 12		**1 mark**
Interpret evidence The question requires students to infer. The expected response draws a conclusion based on analysis.	This *p* value indicates that there is a statistically <mark>significant difference</mark> between the matching and mismatching conditions. ✓	1 mark for correct inference about the result of the t-test.
Question 13		**1 mark**
Interpret evidence The question requires students to draw a conclusion. The expected response draws conclusions based on analysis.	The Case condition had the longest confidence interval (CI) indicating the greatest amount of uncertainty in the data. OR The Sentence condition had the shortest confidence interval (CI) indicating the least amount of uncertainty in the data. OR The length of the confidence interval (CI) for the Rhyme condition was between that of the Case and Sentence conditions, indicating this condition had neither the greatest nor least amount of uncertainty in the data. OWTTE ✓	1 mark for correct interpretation of length of CIs from figure.
Question 14		**1 mark**

Assessment objective — annotation	Expected response Note: ✓ = 1 mark	Mark allocation
Interpret evidence The question requires students to deduce. The expected response reaches a conclusion based on analysis.	The result for the Case condition is significantly different from the Sentence condition. OWTTE ✓	1 mark for correct deduction.
Question 15		**2 marks**
Interpret evidence The question requires students to draw a conclusion. The expected response draws a conclusion based on analysis.	The result for the Case condition is not statistically different from the Rhyme condition. OWTTE ✓ Reason: The confidence intervals for the Case and Rhyme conditions overlap by more than 50%. OWTTE ✓	1 mark for correct conclusion. 1 mark for correct reason for conclusion.
Question 16		**1 mark**
Interpret evidence The question requires students to draw a conclusion. The expected response draws conclusions based on analysis.	The Sentence condition had the highest response latency. OWTTE ✓	1 mark for correct conclusion.