CAMBRIDGE
International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/23**

Paper 2 Research methods **May/June 2025**

MARK SCHEME

Maximum Mark: 60

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the May/June 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

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GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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Social Science-Specific Marking Principles
(for point-based marking)

1 Components using point-based marking:

- Point marking is often used to reward knowledge, understanding and application of skills. We give credit where the candidate's answer shows relevant knowledge, understanding and application of skills in answering the question. We do not give credit where the answer shows confusion.

From this it follows that we:

a DO credit answers which are worded differently from the mark scheme if they clearly convey the same meaning (unless the mark scheme requires a specific term)
b DO credit alternative answers/examples which are not written in the mark scheme if they are correct
c DO credit answers where candidates give more than one correct answer in one prompt/numbered/scaffolded space where extended writing is required rather than list-type answers. For example, questions that require *n* reasons (e.g. State two reasons …).
d DO NOT credit answers simply for using a 'key term' unless that is all that is required. (Check for evidence it is understood and not used wrongly.)
e DO NOT credit answers which are obviously self-contradicting or trying to cover all possibilities
f DO NOT give further credit for what is effectively repetition of a correct point already credited unless the language itself is being tested. This applies equally to 'mirror statements' (i.e. polluted/not polluted).
g DO NOT require spellings to be correct, unless this is part of the test. However spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. Corrasion/Corrosion)

2 Presentation of mark scheme:

- Slashes (/) or the word 'or' separate alternative ways of making the same point.
- Semi colons (;) bullet points (•) or figures in brackets (1) separate different points.
- Content in the answer column in brackets is for examiner information/context to clarify the marking but is not required to earn the mark (except Accounting syllabuses where they indicate negative numbers).

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3 Calculation questions:

- The mark scheme will show the steps in the most likely correct method(s), the mark for each step, the correct answer(s) and the mark for each answer
- If working/explanation is considered essential for full credit, this will be indicated in the question paper and in the mark scheme. In all other instances, the correct answer to a calculation should be given full credit, even if no supporting working is shown.
- Where the candidate uses a valid method which is not covered by the mark scheme, award equivalent marks for reaching equivalent stages.
- Where an answer makes use of a candidate's own incorrect figure from previous working, the 'own figure rule' applies: full marks will be given if a correct and complete method is used. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.

4 Annotation:

- For point marking, ticks can be used to indicate correct answers and crosses can be used to indicate wrong answers. There is no direct relationship between ticks and marks. Ticks have no defined meaning for levels of response marking.
- For levels of response marking, the level awarded should be annotated on the script.
- Other annotations will be used by examiners as agreed during standardisation, and the meaning will be understood by all examiners who marked that paper.

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Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	Correct point
	Incorrect point
BOD	Benefit of doubt
REP	Repetition (of stem or within response)
	Unclear point
GM	Generic mark
L1 L2 L3 L4 L5	Used to show Level 1, 2, 3, 4, or 5 in the 10-mark planning Q
NAQ	Not answering question

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Annotation	Meaning
SEEN	Acknowledge blank pages
^	Something is missing
a b c d	Used for each point of description of a required feature in the 10-mark planning Q

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Question	Answer	Marks	Guidance
1(a)	**Outline the ethical guideline of 'confidentiality'.** Outline = 1 • Keeping the identity of the participant a secret; • Not revealing who the participants were; • Keeping data secure from people not part of the study.	**1**	
1(b)	**Explain <u>one</u> way that the ethical guideline of confidentiality was followed in the study by Dement and Kleitman (sleep and dreams).** Generic explanation = 1 Linked explanation = 2 • The names of the participants were not published =1 (generic) • The participants' names were replaced by their i**<u>nitials</u>** = 2 • Only the Ps' **<u>genders/occupations</u>** were known (so they couldn't be identified) = 2	**2**	

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Question	Answer	Marks	Guidance
2(a)	**Cognitive psychologists sometimes study people's recall of past events.** **Outline what is meant by 'subjectivity'.** Outline = 1 • Seeing things from your own perspective; • Being unable to take on external viewpoint; • That your interpretation of behaviour is influenced by your own/personal bias.	**1**	'not being objective' / 'lacking objectivity' = 0 [**NAQ**]
2(b)	**Suggest how subjectivity could be a problem when studying people's recall of past events.** Suggestion of problem = 1 Detail = 1 **Suggestion** • Participants recall could be distorted (over time); • Events in between could interfere with memories; • New memories could overwrite old ones; • A bad event later might affect the way an early memory is remembered; (problem) • The researcher may have a memory of the same event **Detail** • So, two people might recall the same event differently; (deal) • Which may mean they interpret the information given differently to what the participant meant (detail)	**2**	

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Question	Answer	Marks	Guidance
3(a)	**A study tested the relationship between average number of hours of sleep per night and physical health. The participants slept in their own homes. The results showed a positive correlation.** **Sketch a graph to show the results of this study. You must label the axes.**  2 **axes** with **sleep** and **physical health** (either way) **= 1** **positive correlation** (line or points) **= 1** 'Hours' marked on the sleep axis = 1 Scale for health (words or numbers) = 1	**3**	

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Question	Answer	Marks	Guidance
3(b)	**Suggest <u>two</u> problems with collecting data about the number of hours of sleep in this study.** Suggestion = 1 (×**2**) Link = 1 (×**2**) • Participants may lie; (suggestion) • They may feel they have to say they have slept a long time; (link) • Their sleep may be disturbed; (suggestion) E.g. by dogs/children at home; (link) • The environment they sleep in can't be controlled; (suggestion) E.g. how dark/noisy the (bed)room is; (link)	**4**	

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Question	Answer	Marks	Guidance
4	**An investigation is testing the hypothesis 'Intelligence affects obedience'.** **State whether this is a directional or a non-directional hypothesis. Justify your answer.** **NO** mark for 'non-directional'/two-tailed (it is for justification) Justification = 1 (generic or specific) Link = 1 *(Non-directional **because**:)* • It only says that the results (DV) in the two conditions/ levels of the IV will be different; (generic justification =1) • As it only says the levels of obedience (DV) will be different based on the levels of intelligence (IV) (linked justification = 2) • The difference in obedience varies / differs with intelligence; (linked justification = 2)	**2**	

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Question	Answer	Marks	Guidance
5	**In the study by Bandura et al. (aggression) a sample of children was recruited from a university nursery. The sampling technique is not stated.** **Suggest why Bandura et al. may <u>not</u> have used volunteer sampling.** Suggestion (of problem) = 1 Link = 1 • Bias/ lack of generalisability; = 1 (generic) • An aggressive child's parent may have been too embarrassed to let their child take part; (linked problem) = 2 • Parents of non-aggressive children might have been too worried about consequences to let them take part = 2 (linked problem)	**2**	

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Question	Answer	Marks	Guidance
6	**Describe structured interviews and semi-structured interviews, using any example(s).** 1 mark for each definition/point of detail, up to a maximum of 2 for each term/concept. 1 mark for each example, max 2 for each term/concept. Examples can include examples from any studies (core studies, other studies, candidate's own studies). Max 4 if no examples or if only about one term/concept. Only 1 example needed to access 6 marks. **Interviews** • self-report / a way to ask the participant questions; • face-to-face/ telephone/ real time; • can include open **and** closed questions; (no 'example' marks for open and closed) **structured:** • interview follows set questions/a script; • may also have set dress; • same tone of voice to standardise the interviewer; **semi-structured:** • interviews follow some questions the same; • the interviewer can add follow up questions based on the participant's responses;	**6**	

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Question	Answer	Marks	Guidance
6	**Examples** • **Dement & Kleitman** asked all Ps whether they had had a dream but sometimes asked them more questions about each dream; • **Saavedra and Silverman** used interviews at the 6 and 12 month follow up period to ask about progress (general interview example) • **Milgram** conducted interviews one year after the study had finished to see how the participants felt about the study.		

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Question	Answer	Marks	Guidance
7(a)	**Dr Jones is conducting a case study of a man, Kevan, who has been practising mindfulness for 10 years.** **Suggest <u>two</u> questions that Dr Jones could use in a self-report (questionnaire or interview) that would investigate different features of Kevan's mindfulness**. Question relevant to mindfulness (×**2**) Can be open or closed • Describe how you have learned mindfulness; • Tick each of the following that you have done to help with mindfulness: body scan, yoga, sitting meditation; • Why do you think you find it so easy to enter a mindful state? • How easy do you think you find it to enter a mindful state 0 (not at all easy) to 5 (very easy); • How often do you practice mindfulness? • What do you think is the most important part of your mindfulness. routine	**2**	**Accept** questions from FFMQ

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Question	Answer	Marks	Guidance
7(b)(i)	**Dr Jones wants to investigate whether Kevan has changed in any other ways that could be linked to his mindfulness. He plans to interview Kevan's friends.** **Suggest <u>two</u> changes in Kevan that his friends could observe. These changes <u>must</u> be behavioural, emotional or cognitive.** Change = 1 ×2 • Changes in his sleep/eating; (eating more/less, sleeping better, less tired) • Differences in sociability; (more friendly, happier) • Behaviour at work; (happier at work, more efficient at work, more motivated)	**2**	
7(b)(ii)	**Explain why <u>one</u> of the changes that you suggested in part <u>(b)(i)</u> would be difficult to investigate.** Explanation = 1 Detail = 1 • It would be difficult for friends to observe sleep (explanation) • As they usually do not live together and therefore would not see it regularly; (detail) • Friends could only observe behaviour outside of work (explanation) • So they wouldn't be able to observe whether he is more motivated at work/for work behaviour they would have to ask not observe (detail) • Friends would find it difficult to observe such changes as kindness (explanation) • As what one friend classes as kindness another wouldn't; (detail)	**2**	

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Question	Answer	Marks	Guidance
7(c)(i)	**Dr Jones has several different questions on his self-report that he has used repeatedly with similar case. He has identified two problems:** • **Problem 1 – When he studies the responses to one item, he discovers that there are several different ways to interpret the answers.** • **Problem 2 – He is concerned that another item, which was supposed to measure mindfulness, is measuring happiness instead** **Explain which problem relates to reliability**. Explanation of why the problem relates to reliability = 1 (generic or specific) **NO** mark for 'Item or identification of Problem 1/differences in responses only. Item 1/differences in responses) • because (interpretation) not **consistent**; (justification)	**1**	**Ignore** comments that the ***participant*** is not consistent
7(c)(ii)	**Explain which problem relates to validity.** Explanation of why problem relates to validity = 1 (generic or specific) **NO** mark for 'Item or Problem 2/measuring happiness' Item 2/measuring happiness • because not testing what it claims to; (justification) • Item 1 • because the inconsistencies mean Dr Jones can't be sure that any of the interpretations are true/correct	**1**	

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Question	Answer	Marks	Guidance
8(a)	**Dr Mohan has proposed a study using monkeys in a laboratory. A colleague has two suggestions to make the study more ethical:** • **suggestion 1: using animals which have less complex brains** • **suggestion 2: using videos of the animals' behaviour in the natural habitat.** **Explain why suggestion 1 would make Dr Mohan's study more ethical.** Explanation (e.g. generic, based on guideline) = 1 Detail = 1 • Species (guideline) • Simpler animals will experience less distress; (detail) • Distress (guideline) • Simpler animals will suffer less / be less distressed; (detail)	**2**	
8(b)	**Explain why suggestion 2 would make Dr Mohan's study more ethical.** Explanation (e.g. generic, based on guideline) = 1 Detail = 1 **Replacement (guideline);** • Using (undisturbed) wild animals will avoid use in labs; (explanation/detail) • (undisturbed) wild animals will be less distressed than captive ones; (detail) **Distress (guideline);** • Wild animals will suffer less / be less distressed than captive ones; (detail)	**2**	

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Question	Answer	Marks	Guidance
9(a)	**Kioni is conducting a longitudinal study. Her aim is to study changes in personal space throughout her participants' lives.** **Kioni is deciding how frequently throughout her participants' lives she should test them.** **Suggest a suitable frequency for Kioni to use to test her participants throughout their lives.** Frequency = 1 Must give at least 3 measures over an average lifespan Must not be more frequent than yearly Each year; Every two years from 15 – 40; At 10, 20, 30, etc;	1	
9(b)	**Suggest <u>one</u> way for Kioni to re-contact her participants each time she needs to test them.** Appropriate way to contact = 1 Link/detail = 1 • Email (way) to ask if they still want to be part of the study on personal space (link) • Phone (way) to say she would like their personal space to be tested again (link) and ask them about their personal space preferences (link) • Set up a group chat for the study and send a message (way) To say their yearly test on personal space is due (link)	2	

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Question	Answer	Marks	Guidance
9(c)(i)	**Describe <u>one</u> way that Kioni could measure personal space.** Basic/incomplete outline of way = 1 Detailed/complete outline of way = 2 e.g. one of three from Perry ***Original paper-and-pencil CID:*** • Participants circled on paper where they would want a person approaching to stop = 1 • Participants imagined themselves in a room, and would draw a circle/line where they wanted an approaching person to stop – 2 ***computerised CID:*** • When figure approaches, they press spacebar when they want them to stop = 1 • Pp in centre of (virtual) 'room' and a figure approaches them from different entrances, and they press a spacebar to say when they would want them to stop =2 ***room choice test:*** • Participants will choose between rooms with chairs at different distances = 1 • Participants can be shown images of rooms with chairs at different distances and would choose which one they would use to (allegedly) talk to a person.	**2**	

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Question	Answer	Marks	Guidance
9(c)(ii)	For the way that you described in part (ci): Suggest **<u>one</u>** strength of measuring personal space in this way. Strength = 1 Detail = 1 *Original paper-and-pencil CID:* • Simple to use; (strength) • So can easily gather a large therefore **representative** sample; *computerised CID:* • High ecological validity; (strength) • Because static / real people move / we approach people in space; *room choice test:* • Low social desirability / demand characteristics; • Because distance decision is embedded in other tasks;	**2**	

Question	Answer	Marks	Guidance
9(d)(i)	**Kioni is concerned that there may be variables other than age that could affect an individual's personal space preferences.** **Suggest <u>two</u> variables that could affect an individual's personal space, other than age and gender.** Variable affecting personal space (**x2**) • Culture; • Number of siblings; • Mental health; • Past experiences • Personality (extrovert/introvert/empathy)	**2**	Age / gender = 0 [NAQ]

Question	Answer	Marks	Guidance
9(d)(ii)	**For <u>one</u> of the variables that you suggested in part <u>(di):</u> Suggest how this variable could affect an individual's personal space.** Effect of variable on personal space = 1 Detail = 1 ***Culture*:** • Being close is less/more acceptable in some cultures; (effect) e.g. (From Beaulieu 2006) Anglo-Saxons> Asians> Caucasians> Mediterranean's> Latinos; (detail) ***Number of siblings*:** • People with siblings are used to being close to people; (effect) So would tolerate smaller personal spaces; (detail) ***Mental health*:** • Some disorders make closeness more easy/difficult; (effect) e.g. some people with Down's syndrome accept closer contact; (detail) e.g. some people with autism find close contact difficult; (detail)	**2**	

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>10(a)</td><td>Isla is a teacher. She thinks that allowing students to play with an object in class will improve attention. Isla is unsure whether it will be better to play with a pen or play with a different object that is not used for writing.

Describe how Isla could conduct an experiment to test whether attention is better with a pen or an object that is not used for writing.

Do <u>not</u> describe sample/sampling technique or ethical issues/guidelines in your answer.

To mark Q10a, create four ‘imaginary columns’ down one margin, using one column for each of the four required features. Tick each feature (tick-a, tick-b, tick-c, tick-d) when it appears, then underline the letter (✓a) for detail.

Use L1, L2, L3, L4, L5 at the end of the response to indicate the level.

Use the table opposite to mark candidate responses to this question.

The four required features for this experiment are:
(a) independent variable: (different objects: pen and e.g. key ring, elastic bands – consider match of second object to ‘pen’ – is it ‘playable with’?)
(b) dependent variable: (attention: operationalisation – in a lesson; scores on test)
(c) controls/standardisation; (classroom, lesson – e.g. interest, length etc. At least two)
(d) experimental design: (repeated – counterbalancing? or independent measures - how allocated?)

Other appropriate responses should also be credited.</td><td>10</td><td>
<table>
<tr><th>Level</th><th>The response:</th></tr>
<tr><td>Level 5
9-10 marks</td><td>• has all the required features, all with <u>detail</u>, with mostly appropriate terminology.
• AND
• clearly applies knowledge of methodology involved in planning an investigation.</td></tr>
<tr><td>Level 4
7–8 marks</td><td>• has all the required features, but only some of these with <u>detail</u>, with some appropriate terminology.
AND
• applies knowledge of methodology involved in planning an investigation.</td></tr>
<tr><td>Level 3
5–6 marks</td><td>• has some of the required features with <u>detail</u> / all of the required features with <u>no</u> <u>detail</u>, and some appropriate terminology.
AND
• applies a basic knowledge of methodology involved in planning an investigation.</td></tr>
<tr><td>Level 2
3–4 marks</td><td>• has at least two of the required features, with little appropriate terminology.
AND
• attempts to use knowledge of methodology involved in planning an investigation.</td></tr>
</table>
</td></tr>
</table>

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>10(a)</td><td></td><td></td><td>
<table>
<tr><th>Level</th><th>The response:</th></tr>
<tr><td>Level 1
1–2 marks</td><td>• has one of the required features and uses little appropriate terminology.
AND
• makes a limited attempt to use knowledge of methodology involved in planning an investigation, e.g. may not use the method required by the question.</td></tr>
<tr><td>0
marks</td><td>No creditable response.</td></tr>
</table>
</td></tr>
<tr><td>10(b)(i)</td><td>For <u>one</u> feature of the experiment you have described in part <u>(a):</u>

Explain why that feature is a strength of the study.

Do <u>not</u> refer to sampling or ethics in your answer.

Identification of = 1
explanation (generic or linked) = 1
Part of procedure may relate to:
• operationalisation
• situational / participant variables factors
• controls
• design / counterbalancing

Accept other strengths</td><td>2</td><td>No marks for: ethics or sampling technique

If (bi) and (bii) are about different features, only one gains credit. Mark both and credit the best.</td></tr>
</table>

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Question	Answer	Marks	Guidance
10(b)(ii)	**Explain how that feature could be a weakness of the study.** **Do <u>not</u> refer to sampling or ethics in your answer.** Identification of = 1 **explanation** (generic or linked) = 1 Part of procedure may relate to: • operationalisation • situational / participant variables factors • controls • design / counterbalancing Accept other weaknesses	**2**	No marks for: ethics or sampling technique If **(b)(i)** and **(b)(ii)** are about different features, only one gains credit. Mark both and credit the best.

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