CAMBRIDGE
International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/23**

Paper 2 Research Methods **October/November 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 October/November 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.

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).

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.

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

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

Question	Answer	Marks
1(a)	**Define what is meant by 'counterbalancing'.** Outline = 1 • Counterbalancing is) having two groups of Ps who do tasks / conditions / levels of the IV in opposite orders; (definition) • When one group do condition A then condition B the other do condition B then condition A (ABBA)	**1**
1(b)	**Outline <u>one</u> reason why counterbalancing is important in experiments.** Reason for importance = 1 • To reduce order effects; (importance)	**1**

Question	Answer	Marks
2	**State whether the hypothesis 'attention will be better when eating than when not eating' is a:** • **directional hypothesis** • **non-directional hypothesis** • **null hypothesis.** Correct choice = 1 [definitive] • directional hypothesis	**1**

Question	Answer	Marks
3	**In the study by Fagen et al. (elephant learning), there were several stages to the training process.**	
3(a)	**Explain why there was no fixed length of time for the elephants' training.** Basic explanation = 1 (can be generic) Detail = 1 (Response **must contain a link** for 2 marks) *Individual differences; (generic explanation)* • one had to be retrained because she **preferred saline** (to water); (linked detail) • **All elephants** will have different learning rates / different needs (linked detail) • the trainers knew the **elephants,** so learning time was tailored towards their elephant; (detail)	**2**
3(b)	**Some behavioural tasks were more difficult than others for the elephants to learn. This difference in difficulty was called 'relative difficulty' in the study.** **Explain how Fagen et al. measured relative difficulty.** Basic explanation = 1 (can be generic) Detail = 1 (Response **must contain a link** for 2 marks) *Total number of **offers/cues** which had to be given (to pass a behavioural test); (basic explanation)* • The average of the totals for all the elephants was used; (detail) • 'Average number of offers/cues' = only 1 mark	**2**

Question	Answer	Marks
4	**Hölzel et al. (mindfulness and brain scans) measured changes in mindfulness using the 39-item five facet mindfulness questionnaire (FFMQ).**	
4(a)	**Explain <u>one</u> strength of measuring the change in mindfulness in this way.** Strength = 1 (generic or specific) Linked detail = 1 • High (internal) reliability; (generic strength) • Produced objective/quantitative data (generic strength) • Five subscales are consistent with each other; (specific strength) • Meaning that a P with high score on **one scale** would have a high score on the others; ORA (specific detail) • Meaning that the scores **before and after** the study can be easily compared/analysed to see whether scores had risen (specific detail)	**2**
4(b)	**Explain <u>one</u> weakness of measuring the change in mindfulness in this way.** Weakness = 1 (generic or specific) Linked detail = 1 (generic or specific) **Weakness** (It's a questionnaire) so people might lie / give socially desirable answers; (generic weakness) Fatigue effect; (generic weakness) 39 questions items is a lot, Ps might get bored; (specific weakness) Practice effect; (generic weakness) ***Detail*** • So, their answers to the questions may not reflect their level of mindfulness lowering validity; • So, they might not answer the questions at the end of the questionnaire/ towards the end of the study; • People might give the same answers about mindfulness even when they are more / less mindful;	**2**

Question	Answer	Marks
5	**In the study by Piliavin et al. (subway Samaritans), there were two types of victim who collapsed on the train.**	
5(a)	**Describe <u>three</u> ways that the two types of victim differed.** Identification of difference = 1 [x3] Difference can be implicit. • One was 'drunk' whereas one was 'ill' • One carried a (black) cane whereas one carried a bottle (in a brown bag) • One smelled of liquor/alcohol whereas one appeared sober.	**3**
5(b)	**Explain why it was important that there were also similarities between the two types of victim.** Explanation = 1 Detail = 2 (can be 1 or 2 further suggestions) Needs at **<u>least one link</u>** to the study for all three marks. *Standardisation / control / to limit confounding variables; (explanation)* • so, differences were only due to the IV; (generic explanation /detail) • so, the **victims** looked like ordinary passengers; (linked detail) • to ensure other **trials** (e.g. model) were consistent; (linked detail)	**3**

Question	Answer	Marks
6	**Describe open questions and closed questions, 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. ***Open questions:*** • allow participants to choose own response; (1 for definition) • produce more detailed/ in depth / descriptive / qualitative data; (1 for detail) • open questions are interpreted researchers / are subjective; (1 for detail) **Examples** • answers to 'Describe/Explain …' (1 for example) • **Dement & Kleitman** 'where participants were instructed to describe the content of the dream.' (1 for example) ***Closed questions:*** • only allows P to choose from a limited number of options; (1 for definition) • closed questions produce quantitative/ numerical data; (1 for detail) • closed questions tend to be more objective /less subjective; (1 for detail) **Examples** • answers to 'How many times on a scale of 1–10 …' (1 for example) • Eyes test choices **in Baron-Cohen;** (1 for example)	**6**

Question	Answer	Marks
7	**Pedro is conducting a study about children's interest in different types of objects. He has objects for children to explore, including picture books and toy bricks. Pedro is recording which objects children choose and for how long they interact with those objects.**	
7(a)(i)	**Pedro wants to add more objects and is considering plush (soft) toys, wheeled toys, noisy toys and balls. Explain why <u>two</u> of these objects could interest children. Your two answers must be different.** Explanation of interest to children = 1 ***Soft/animal toys:*** • They could cuddle them / they are comforting/feel soft and warm. ; ***Noisy toys:*** • More **stimulating** than noiseless toys; ***Wheeled toys:*** • More stimulating because **move**; (allow only once) ***Balls*:** • More stimulating because **move**; (allow only once) • They could play **social games** / **games with others;**	**2**

Question	Answer	Marks
7(a)(ii)	**Suggest <u>one</u> reason why <u>one</u> of the objects named in part <u>(a)(i)</u> may <u>not</u> interest the children.** Explanation of lack of interest to children= 1 **Link = 1** *Soft/animal toys*: • The soft toy reminds them of bedtime (link); • So they would not find them stimulating *Noisy toys*: • They might be scared of the noise (link) • So they will not go near them; *Balls*: • Some children may be introverted; • Which means that they do not want to play with the balls; (link) Wheeled toys: • The girls may see cars/trucks as 'boys' toys (link) • And therefore, not be interested in playing them.	**2**
7(b)	**Suggest how Pedro could tell the children that they have the right to withdraw from his study in a way that they will understand.** Suggestion of generic offer of withdrawal = 1 (e.g. a statement) Suggestion of children friendly way of offering withdrawal linked to the study = 2 • Telling them they can leave the study (generic suggestion) = 1 • Telling the children that they don't have to stay in the room and play with the **toys** (linked suggestion) = 2 • Saying that 'You can stop playing with the **toys** and go home if you want to' = 2 • Saying 'You don't have to stay and play with the **toys** if you don't want to' = 2	**2**

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>7(c)</td><td>
Pedro tests two children using a choice of picture books, toy bricks and one other object. He collects data about how long each child interacts with the objects.

Draw a table that Pedro could use to collect this data. You <u>must</u> label the rows and columns of your table.

Row heading ‘Object’/’toy’ (type) = 1
Row categories of ‘object’ minimum picture books, toy bricks, ‘other object’ (abstractly or named) = 1
Column heading ‘Duration of interaction (with object) = 1
Column categories of Participants = 1

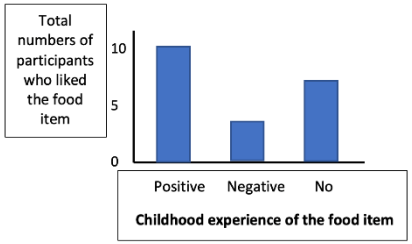
There are several acceptable table layouts, row/column layout can be reversed.

<table>
<tr><td rowspan="2">Object (e.g.)</td><td colspan="2">Duration of interaction</td></tr>
<tr><td>Participant 1</td><td>Participant 2</td></tr>
<tr><td>Picture books</td><td></td><td></td></tr>
<tr><td>Toy bricks</td><td></td><td></td></tr>
<tr><td>Any other object</td><td></td><td></td></tr>
</table>
</td><td>3</td></tr>
</table>

Question	Answer	Marks
8	**Dr Bakar is investigating the effect of boredom on people's estimation of time. Her participants were separated into two groups, and did different activities:** • **Group A watched an exciting film (non-boring activity)** • **Group B moved small boxes from one pile to another (boring activity).** **Both activities lasted 30 minutes. Each participant was asked to estimate how long the activity had lasted.**	
8(a)	**Outline the dependent variable in Dr Bakar's study.** Outline of dependent variable = 1 Operationalisation = 1 • Estimation of time; (DV) = 1 • (Estimation of) how long the activity lasted; (operationalisation) = 2	**2**
8(b)	**Dr Bakar is concerned about possible differences between individuals in Group A and Group B that could affect the validity of her study.**	
8(b)(i)	**Suggest why <u>two</u> possible differences between individuals in Group A and Group B could lower validity.** Suggestion of difference in participant variables = 1 [×**2**] Why = 1 [×**2**] • Watch more films / more interested in films; (suggestion) • Likely to get involved (so time passes faster); (justification) • Do box moving type job / shelf stacker; (suggestion) • Even more bored so time moves extra slowly; (justification) • Better at timing; (suggestion) • Better timing when bored / in box condition; (justification) • It may be that one person really likes moving boxes/stacking shelves more than another (suggestion) • So they really get involved in the task (so time passes more quickly)	**4**

Question	Answer	Marks
8(b)(ii)	**For <u>one</u> of the differences you suggested in part <u>(b)(i)</u>:** **Suggest how Dr Bakar could change her study to improve validity.** Suggested change = 1 Detail (e.g. how to achieve / how it helps) = 1 *Watch more film/enjoys moving boxes:* • Use a questionnaire to match Ps; (suggestion) • Then used matched pairs, one in each condition; (how it helps) *Shelf stacker*: • Randomly allocate people to conditions; (suggestion) • so not all shelf stackers in one group; (detail) *Better at timing:* • Do a timing test first (and allocate accordingly); (suggestion) • So differences due to IV/activity not timing ability; (detail)	**2**
8(c)	**Dr Bakar includes a control group in her study.**	
8(c)(i)	**Suggest a suitable control group for Dr Bakar's study.** Suggestion of control group = 1 • No activity; • A boring film; • Moving exciting things about;	**1**

Question	Answer	Marks
8(c)(ii)	**Explain why the control group you suggested in part (c)(i) is suitable.** Explanation of control group = 1 *No activity:* • Time estimation might be the same as for boring; • This will give a baseline to compare to the exciting/boring groups. *A boring film:* • Any difference might be due to vision/movement not boredom; • Because that would remove the confounding variable of film preference. *Moving exciting things about:* • Any difference might be due to excitement (not vision or movement);	**1**

Question	Answer	Marks
9	**Daniel is investigating the effect of childhood experiences on adult food preferences. He asked adult participants to taste one food item. He counted the number of participants who liked this food item who had:** • **a positive childhood experience of that food item** • **a negative childhood experience of that food item** • **no childhood experience of that food item.**	
9(a)	 **A graph of Daniel's results is shown in Fig. 9.1.**	
9(a)(i)	**Name the type of graph in Figure 9.1.** Name = 1 Bar chart / Bar graph [definitive]	**1**
9(a)(ii)	**Suggest <u>one</u> conclusion from Daniel's results.** Conclusion = 1 • Early food experiences affect later liking; • Positive early experiences with a food increases later liking; • Negative early experiences with a food decreases later liking; • No early experience with the food produces greater liking than negative early experiences;	**1**

Question	Answer	Marks
9(b)	**Suggest <u>one</u> problem with validity that Daniel may have because he is only using adults in his study, other than generalisability.** Problem = 1 (can be generic) Detail of effect on validity = 1 *Adults may not remember early experiences; (problem)* • So may not miss out positive/negative experiences; (detail) • So (may lie and) create experiences they did not have; (detail) Low generalisability / low representativeness = 0 [**NAQ**]	**2**

Question	Answer	Marks
10	**Liam is a young man who is unusually good at focussing his attention on many types of stimuli, such as sights or sounds.**	
10(a)	**Describe how a researcher could conduct a case study to investigate Liam's unusual ability to focus his attention.** **Do <u>not</u> describe ethical issues / guidelines in your answer.** To mark **Q10(a)**, 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 lett✓a ( ) for **detail**. Use L1, L2, L3, L4, L5 at the end of the response to indicate the **level**. Use the table below to mark candidate responses to this question. **The four required features for this <u>case study</u> are:** **(a) <u>details about the participant / unit</u> (exceptional attention, male, age, how found, other info e.g. from parents, teachers/coworkers)** **(b) <u>content of information collected</u>: (e.g. depth/detail: e.g. attention span (time), associated with different stimuli, effect of boredom etc.)** **(c) <u>two or more techniques for data collection</u> (observation, interview him, interview parents/teachers/coworkers – at least two)** **(d) <u>analysis / interpretation / triangulation</u>: (description of how data used: qualitative and/or quantitative)** **Other appropriate responses should also be credited.**	**10**

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>10(a)</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>
<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>
Other appropriate responses should also be credited.
</td><td></td></tr>
</table>

Question	Answer	Marks
10(b)	**Explain how <u>two</u> features of the procedure you described in part <u>(a)</u> help to make the study valid.** **Do <u>not</u> refer to ethics in your answer.** Identification of = 1 ×**2** **explanation** (generic or linked) = 1 ×**2** Part of procedure may relate to: • operationalisation • data collection techniques • triangulation Accept other practical influences on validity	**4**