CAMBRIDGE
International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/21**

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.

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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 standard isation 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
1	**A researcher is conducting an observation to investigate the study habits of students. The observation uses a fixed list of behavioural categories.**	
1(a)	**Explain whether this observation is structured or unstructured.** 1 mark for **explanation** of why it is structured • Structured **because** there is a fixed list of behavioural categories; • Structured **because** only set observations will be recorded;	**1**
1(b)(i)	**Suggest two behavioural categories that the researcher could use to observe the study habits of students.** Suggestion **must** be an **observable/measurable** category of student study habits = 1 [**x2**] • time spent working; • frequency of using books; • note taking; • Use of flashcards • Studying alone • Study with others • Studying whilst listening to music • Studying whilst doodling.	**2**

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Question	Answer	Marks
1(b)(ii)	**For <u>one</u> of the behavioural categories, you suggested in part <u>(b)(i)</u>:** **Suggest <u>one</u> methodological problem with using this category to observe the study habits of students.** Suggestion = 1 Link = 1 **One problem with 'number of books used':** • The category may be underestimated/miscategorised; (suggestion) • As a book could be on their phones/iPad (link) **One problem with 'note taking/doodling':** • Difficult to operationalise; (suggestion) • When does one 'note' end and the next one start/as it's difficult to state what is meant by a note/doodle/picture; (link) **One problem with studying whilst listening to music** • The category may be underestimated/miscategorised; (suggestion) • as they may be listening to music on their headphones which the researcher will not hear/the researcher may assume they are listening to music if they are wearing headphones (and they are not) (link) **One problem with studying with others/alone.** • The category may be underestimated/overestimated (suggestion) • As they may be talking about things with others that are not to do with studying/ they may seem to be studying alone but they are actually studying together using electronics (link).	**2**

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Question	Answer	Marks
2	**In the study by Saavedra and Silverman (button phobia), imagery exposure was investigated. During this, the boy reported a 'severity rating' for distress at three different 'time frames.**	
2(a)	**State what was meant by the time frames 1, 2 and 3.** Two out of three correct time frames = 1 All three correct time frames = 2 Just one correct = 0 • Time frame 1: before (imagery exposure/therapy) session; • Time frame 2: midway through (imagery exposure/therapy) session; • Time frame 3: after the (imagery exposure/therapy) session;	**2**
2(b)	**Outline the change in severity rating from time frame 1 to time frame 3 when the boy had to imagine hundreds of buttons falling on his body.** Outline of change = 1 the boy's (distress) rating **decreased** over time/from timeframes 1-3	**1**

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Question	Answer	Marks
3	**The study by Hölzel et al. (mindfulness and brain scans) used participants who wanted to reduce their stress and were able to have an MRI scan. There were several other inclusion criteria (reasons for being included in the sample).**	
3(a)	**Outline <u>two</u> other inclusion criteria.** **Inclusion criterion = 1 (x2)** • not taking any medications; • Physically and psychological healthy • no meditation classes in the past six months; • no more than 4 classes in the past 5 years, or 10 classes in lifetime; • 25-55 years old; • commitment to attend all classes; • commitment to do homework; • No contraindications for MRi scanning such as metal implants/claustrophobia. • All right-handed	**2**

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Question	Answer	Marks
3(b)	**For each of the inclusion criteria outlined in part (a):** **Suggest why each inclusion criterion was important in this study, other than to ensure that the experimental and control groups were similar.** Reason for criterion = 1 (x2) *not taking any medications:* • symptoms could reduce even without mindfulness; • *no meditation classes in the past six months*: • Classes could obscure brain changes due to study's intervention/IV / MBSR; ensure that the changes were due to the current MBSR and not the previous ones *no more than 4 classes in the 5 years/ 10 in life:* • Could obscure brain changes due to study's intervention / MBSR; • *25-55 years old:* people • younger/older adults could have brain differences/impairments.; • *commitment to attend classes/do homework:* • otherwise, difficult to tell is MBSR was cause; *No contraindications for MRi scanning* • As metal implants may cause harm to the participants *Right handedness* • To ensure that the differences were not due to differences in brain lateralisation.	**2**

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Question	Answer	Marks
4	**The study by Baron-Cohen et al. (eyes test) used an independent measures design.**	
4(a)	**Explain <u>one</u> strength of using an independent measures design.** Strength = 1 Detail/link = 1 Less chance of demand characteristics (than RM); (strength) • Because the Ps only see one level of the IV; (detail) Can be used to study fixed/pre-existing groups; (strength) • As participants could not be both AS and control; (detail) Eliminates the chance of order effects (strength) • Because the Ps only see one level of the IV; (detail)	**2**
4(b)	**Explain <u>one</u> weakness of using an independent measures design.** Weakness = 1 Detail/link = 1 Hard to control the effect of individual differences; (weakness) • Which would be a confounding variable which affects the DV (other than the IV); (detail) • e.g. the AS/HFA group might have had less experience with people than the controls; (link) You will need a bigger sample for IM than RM (weakness) • which may be more difficult especially if it's a hard-to-find sample (detail) • this may lead to rising costs for the researcher which may lead to a smaller sample (and lower generalisability) (detail)	**2**

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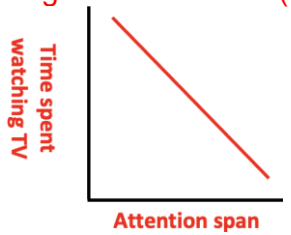
Question	Answer	Marks
5	**Sketch a graph on the axes in Fig. 5.1 to show a negative correlation between 'time spent watching television' and 'attention span'. You must label the axes.** Axis labels (both, either way round) = 1 Negative correlation (line/points) = 1  	**2**

Question	Answer	Marks
6	**Describe measures of central tendency, 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 (up to a maximum of 4). 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. ***Measures of central tendency:*** • Way to find typical / average of data set / single number to describe the data; (description) • e.g. mean / median / mode; (description) *description of how to calculate mode = 1 (max)* *description of how to calculate median = 1 (max)* *description of how to calculate mean = 1 (max)* ***Examples*** **Andrade** mean of monitoring/number names recalled; (core study) **Bandura** mean aggression scores; (core study) **Baron-Cohen** mean eyes test/AQ/IQ/age; (core study) **Dement & Kleitman** mean nightly awakenings/sleep time; (core study) **Fagen** mean offers by elephants on each behavioural task/ mean percent correct (pass rate) for all elephants for all tasks; median passing scores given for behaviours in sequences (core study) **Hassett** mean total time and mean frequency with plush and wheeled toys for males and females / mean dominance rank; **Hölzel** means from MBSR: homework time/body scan practice/yoga/ sitting meditation; **Milgram** mean percent students saying Ps would reach 450V / mean and mode for interview of How painful?/ **Perry** means of IRI/empathy score/percent distances in CID and choosing rooms for OT and placebo groups; **Piliavin** mean number of people per car / people in critical area / number of comments (for white v Black, Cane v Drunk, before v after 70 sec)/ mean and median latencies); **Pozzulo** mean correct identifications (for human v cartoon, adult v child);	**6**

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Question	Answer	Marks
7	**Professor March is interested in interpersonal distance. He has met Dennis, who needs a large interpersonal distance. Dennis has agreed to Professor March conducting a case study about him using a questionnaire.**	
7(a)	**Suggest why Dennis may prefer Professor March to use a questionnaire rather than a face-to-face interview.** Suggestion = 1 • Professor March would need to be too close; • Dennis does not need to be in the same room as Professor March; • Because Dennis may get distressed/nervous about Professor March being too close for a face-to-face interview.	**1**
7(b)	**Suggest <u>two</u> examples of questions that Professor March could use to collect data about the need Dennis has for a large interpersonal distance.** Description = 1 x2 e.g. Describe what people you cannot tolerate close to you; e.g. Describe why you cannot tolerate people close to you; e.g. How do you feel when someone gets close to you? e.g. Rate how you felt when we met 0 (okay) to 5 (bad); e.g. Use a (paper-based) CIDS; mark on lines for comfortable interpersonal distance;	**2**

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Question	Answer	Marks
7(u)	**Suggest <u>one</u> problem that Professor March could have when using a questionnaire to study Dennis.** Identification of problem = 1 (i.e. linked) Detail = 2 (generic or linked) • Prof March may need to hand him the questionnaire; (problem) • Which could make him uncomfortable /nervous; e.g. (detail) • and affect his responses on to the questions; (detail) • reducing validity; (detail) • Dennis won't like being given paper for the CIDs; (problem) • Because it could make them uncomfortable /nervous; (detail) • This could affect his responses on the task; (detail) • reducing validity; (detail) • It may be more may make it more likely that Dennis will give socially desirable answers; (problem) • especially given the topic area is sensitive as it is about not wanting to get close (detail) • and the researcher does not see the body language so won't know they are lying (unlike face-to-face interview) (detail)	3

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Question	Answer	Marks
8	**Dr East is observing children playing. She is a participant observer. The children have met Dr East before and believe she is a playground assistant who watches them when their teachers have lunch.**	
8(a)	**Suggest <u>one</u> strength of using participant observation in this study.** Suggestion of strength = 1 Link (to **play**) = 1 'Can get close to /interact with the children (strength) • So is more likely to understand their play/games; (link) She will be aware of the children's mood; (strength) • She will know whether they are enjoying playing/games; (link) She can approach the children; (strength) • So can see what they are playing with; (link) She can easily talk to the children; (strength) • So can ask the children what they are playing; (link)	**2**

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Question	Answer	Marks
8(b)	**Suggest <u>one</u> advantage of Dr East using a non-participant observation compared to a participant observation.** Suggestion of advantage of non-participant = 1 Linked (to **play**) detail/justification = 1 The children will be unaware she is there; (advantage) • So, their play/games will be more natural; (link) There is distance between the researcher and the children/the researcher does not get involved in the situation (advantage) • So, their play/games will be more natural (link) She could use a video to record the children's behaviour; (advantage) • Which she can use to accurately analyse the children's play (link) She could use a second observer; (advantage) • Which means comparisons can be made to ensure they have the same results about children's play (link)	**2**
8(c)	**Explain <u>one</u> ethical problem caused by the children believing that Dr East is a playground assistant.** Explanation of problem = 1 Detail = 1 • They are being misled / lied to (because they are told she is a playground assistant); (problem/detail) • Deception; (problem/detail) • So cannot give consent; (detail)	**2**

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Question	Answer	Marks
9	**Dr Okami is using animals in an experiment to study the effects of noise on learning. In this study, the animals will learn to run through narrow tunnels and will meet other animals. Each animal will <u>either</u> run through the tunnels with noise <u>or</u> run through the tunnels without noise.**	
9(a)	**Explain whether the experimental design of Dr Okami's study is repeated measures or independent measures.** Explanation of **<u>why</u>** independent measures = 1 (generic or specific) • (Independent measures) **because** each animal only does one level of the IV/ either with or without noise (not both); (explanation)	**1**
9(b)	**The independent variable is 'with noise or without noise' and the dependent variable is 'learn to run through the tunnels.** **Define what is meant by the terms 'independent variable' and 'dependent variable'.** **Independent variable …….** **Dependent variable ……** Generic definition of IV = 1 Generic definition of DV = 1 Marks are for definitions, **<u>not examples</u>** Independent variable is **manipulated** by the researcher to create two (or more) different conditions/levels; Dependent variable is **measured** to see effect of IV;	**2**
9(c)	**Dr Okami needs to follow ethical guidelines in relation to animals.**	
9(c)(i)	**Dr Okami will use reinforcement to help the animals to learn to run through the narrow tunnels.** **Suggest <u>one</u> way that the animals could be reinforced. Your answer <u>must</u> be ethical.** Way to reinforce = 1 • Deprivation then a reward; • Food; • Water; • Treat	**1**

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Question	Answer	Marks
9(c)(ii)	**Dr Okami needs to follow the guideline of 'species'.** **Explain <u>two</u> ways that Dr Okami's choice of animal will be affected by following this guideline.** Explanation = 1 (**x2**) link to stem = 1 (**x2**) Choose a **small** animal/**do not** choose a **large** animal; (explanation re. guideline) • as tunnels are **narrow** / animals need to **pass**; (link to stem) Choose a **social** species/animal; (explanation re. guideline) • as the animals will **meet**/might be **aggressive**; (link to stem)	**4**
9(c)(iii)	**Dr Okami needs to follow the guideline of 'minimising harm'.** **Suggest why this guideline is relevant to Dr Okami's study.** Suggestion = 1 Second suggestion or detail = 1 • Noise could be **distressing** / cause **pain**; • Other social animals could be **distressing** / cause **pain**;	**2**

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Question	Answer	Marks
10	**Dr Aster is interviewing people about their exciting experiences. He is interested in people's feelings about different types of exciting experience.**	
10(a)	**Describe how Dr Aster could conduct a study using an interview to investigate people's feelings about different types of exciting experience.** **Do <u>not</u> describe sample/sampling technique or 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 letter ✓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 interview are:** **(a) format: (description of structured/unstructured/semi-structured)** **(b) question format (open / closed questions, fillers/quantitative/qualitative)** **(c) examples of questions (at least two)** **(d) question scoring / interpretation (e.g. use of numerical scoring / measures of central tendency / analysis of qualitative data)**	**10**

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<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>

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Question	Answer	Marks
10(b)	**For <u>one</u> part of the procedure, you described in <u>(a)</u>:**	
10(b)(i)	**Describe <u>one</u> practical/methodological strength of this part of the procedure.** **Do <u>not</u> refer to sampling or ethics in your answer.** Identification of practical strength of **one** part of the procedure= 1 **explanation** (generic or linked) = 1 Part of procedure may relate to: • operationalisation / a specific question content • question content / a specific question content • question format / a specific question format • controls / a specific control Accept other practical influences on validity or reliability	**2**
10(b)(ii)	**Describe <u>one</u> practical/methodological weakness of <u>this part</u> of the procedure.** **Do <u>not</u> refer to sampling or ethics in your answer.** Identification of practical weakness of **one** part of the procedure= 1 **explanation** (generic or linked) = 1 Part of procedure may relate to: • operationalisation / a specific question content • question content / a specific question content • question format / a specific question format • controls / a specific control Accept other practical influences on validity or reliability	**2**

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