CAMBRIDGE
International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/23**

Paper 2 Research Methods **October/November 2024**

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 2024 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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Guide to marking annotations

BOD	benefit of doubt	✓	correct point [use **one tick per mark** except in last question part (a)]	✗	incorrect point	✓a ✓b ✓c ✓d	use for each point of description of a **required feature** in part (a) of last Q
NBOD	no benefit of doubt	GM	indicates a point is a Generic Mark	CONT	continued (use 'link' icon)		
^	'something is missing'	?	unclear point	NAQ	not answering question		
REP	repetition (of stem/ within response)	~~~	use wiggly underline/ highlighter to bring attention to a key part	✓a ~~~	underline letter-tick when required feature is in enough ***detail***	L1 L2 L3 L4 L5	use to show Level 1, 2, 3, 4 or 5 in part (a) of last Q
SEEN	acknowledge blank pages						

Important marking guidelines for reference

NR or zero	**Award No Response (NR):** • if there is nothing written at all in the answer space • if there is any comment un elated to the question being asked (e.g. 'can't do', 'don't know') • if there is any sort of mark which isn't an attempt at the question (e.g. a dash, a question mark). **Award Zero (0):** • if there is any attempt that earns no credit, eg the candidate copying all or some of the question, or any working that does not earn any marks, whether crossed out or not.
Crossed out work	Please note that if a candidate crosses out a question and does not re-attempt the same question, you must attempt to mark the crossed out work.
Annotate every question	Please place a marking icon on **every question** and to indicate each mark awarded (**number of ticks = number of marks** on all questions except part (a) of the last question). However, you do **not** need to put 'seen' on NR spaces.

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Question	Answer	Marks
1	**Outline what is meant by the term 'random sampling'.** Explanation = 1 selecting participants so that each has an equal chance of being chosen/selected;	**1**

Question	Answer	Marks
2	**In a laboratory experiment, the happiness of participants is being compared in two situations:** • **with other people** • **without other people.** **Identify the dependent variable (DV) in this study. Justify your answer.** Identification of DV = 1 Justification of DV = 1 Happiness; (id) Because it is being measured; (justification) Because it changes with people/no people; (justification) Because it changes with the IV; (justification)	**2**

Question	Answer	Marks
3	**In the study by Fagen et al. (elephant learning), most of the data collected was quantitative. Some qualitative data was collected, including an initial observation that one elephant preferred to drink saline rather than water.**	
3(a)	**Define what is meant by 'qualitative data'.** Definition = 1 Descriptive / in-depth / detailed data; Note: 'in words' = 0	**1**

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Question	Answer	Marks
3(b)	**Define what is meant by 'quantitative data'. Include an example from Fagen et al.** Description = 1 Example = 1 (can stand alone) Numerical / produces a count / totals **in categories**; e.g. Fagan et al. time / number of cue offers / % success on tasks of: trunk wash (or trunk up / trunk here / bucket / blow / blow in bucket);	**2**

Question	Answer	Marks
4	**Studies in social psychology can use stooges or imagined people to cause participants to respond.**	
4(a)	**In the study by Piliavin et al. (subway Samaritans), stooges were used as 'victims'.** **Suggest <u>one</u> way to improve the ecological validity of this study in relation to the victims.** Suggestion to improving realism (can be generic) = 1 Link = 1 Make the victim's behaviour/appearance/smell more realistic; (generic suggestion) ego make the drunk victim smell of alcohol; (link) e.g. put the ill victim's leg in plaster; Include females within the sample/more ethnicities (generic suggestion) Egg females have different characteristics making the study reflect real life helping behaviour more (rather than just having males);	**2**

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Question	Answer	Marks
4(b)	**In the study by Perry et al. (personal space) Experiment 1, responses to imagined people were measured.**	
4(b)(i)	**Suggest <u>one</u> reason why measuring responses to imagined people is more ethical than measuring responses to stooges.** *Ethical reason* (can be generic) = 1 **<u>Link = 1</u>** Less distressing; (generic reason) if it is stressful, you can stop imagining (unlike if the situation is real); (link) as you can't escape from the stooges as they are real (but can for imagined people) ; (linked reason) less need for deception; (generic reason) as they are told what to imagine; (link) as stooges only work if the Ps are unaware; (link) Note: 'less ethical' = 0	**2**
4(b)(ii)	**Suggest <u>one</u> reason why measuring responses to stooges is more practical than measuring responses to imagined people.** *Practical reason* (can be generic) = 1 Link = 1 Fewer demand characteristics/less social desirability; (generic reason) As Ps do not need to be told what to imagine; (link) Stooge behaviour can be controlled / all Ps will experience the same influence; (linked reason) Whereas imaginings may differ from person to person; (link) More realistic than using imagined people (reason) So, their reactions to people coming into their personal with be natural (link)	**2**

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Question	Answer	Marks
5	**Pozzulo et al. (line-ups) calculated the mean number of correct identifications of human faces per child.** **Explain how the researchers calculated this mean in this study.** Partial explanation of how the mean is calculated= 1 Correct explanation of how the mean is calculated in Pozzulo's study = 2 Add/sum up all the values and divide by the number of scores; = 1 (partial generic explanation) Add up all the correct identification of human faces and divide by the number of possible identifications/number of targets/ = 2 (correct linked explanation) Note: Add up all the correct identifications and divide by the number of children = 1 (as correct method of a generic mean)	**2**

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Question	Answer	Marks
6	**Describe laboratory experiments and field experiments, 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. Examples can include examples from any studies (core studies, other studies, candidate's own studies). ***Laboratory experiment**:* has (manipulated) IV and (measured) DV; (definition) happens in an artificial environment; (definition) So there can be many controls; (definition) **IV & DV** e.g.: Hölzel IV was pre/post mindfulness course, DV was brain scans; Perry IV was different antagonists, DV was personal space need; **Controls** e.g.: Dement & Kleitman controlled for factors affecting sleep as participants told not to drink alcohol/caffeine; Andrade controls also given paper and pencil; all doodling condition given sheets to constrain doodling; Baron-Cohen et al. access to a glossary controlled for understanding of the words; ***Field experiment:*** has (manipulated) IV and (measured) DV; (definition) happens in the normal environment for the activity being investigated; (definition) So there can be **some/few** controls; (definition) Piliavin et al. IV victim: cane or drunk, DV helping; Piliavin et al. social interaction/helping happens on subways; Piliavin et al. **controlled** the actions/clothing of the stooge;	**6**

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Question	Answer	Marks
7	**Daiyu is conducting a case study about a seven-year-old child with autism. She is interested in the child's interactions with their family and other children.**	
7(a)	**Suggest <u>two</u> techniques, other than interviews, that Daiyu could use in her case study to collect data about the child. Justify your answers.** Identification of technique = 1 [×2] Justification of technique = 1 [×2] Observation; (Id) Data is about actual interactions, not remembered reports / would not need to rely on memory; (justification) Questionnaire; (Id) As children with ASD may not interview well / may be better at writing than answering face-to-face; (justification) Note: describing how the observation/questionnaire could be administered does not achieve a second mark	**4**
7(b)	**Suggest <u>two</u> pieces of information about the child's interactions that would be useful for Daiyu to collect in her case study. Justify your answers.** Identification of info about interactions = 1 [×2] Justification of info about interactions = 1 [×2] Responding to social cues; (Id) individuals with ASD don't recognise emotions well so might not interact well with others as a result; (justification) Differences in interactions with children and adults; (Id) Frequency of interactions (Id) as the children with ASD may interact more with their family than other children due to being more familiar (justification) Justification must be specific, e.g. Making eye contact; (Id) Not making eye contact is a characteristic of ASD; (justification) Responding to questions; (Id) avoiding social interaction is a characteristic of ASD; (justification)	**4**

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Question	Answer	Marks
7(c)	**Outline <u>one</u> practical reason why obtaining information from the child could be difficult.** Practical difficulty (generic or linked) = 1 Children don't communicate well (so hard to ask/observe); People with ASD don't communicate well (so hard to ask/observe);	**1**

Question	Answer	Marks
8	**Hazel is conducting a study in a park to compare the behaviours of adults who have children with them and adults who do not have children with them. She plans to record three behaviours of the adults: whistling, singing and shouting, rather than all actions that people perform.**	
8(a)	**Explain the type of observation that Hazel plans to use because she is only recording whistling, singing and shouting.** Identification = 1 Explanation = 1 Structured observation; (id) [**DEFINITIVE**] Because (behaviour in) categories/ there is a fixed/limited number of behaviours looked for (e.g. sing); (explanation)	**2**
8(b)	**Outline how Hazel could operationalise <u>one</u> of the three behaviours she plans to record.** Outline = 1 Sing = performing words to a tune Whistle = making a noise by blowing through lips/teeth; Shout = project voice / talk very loudly;	**1**

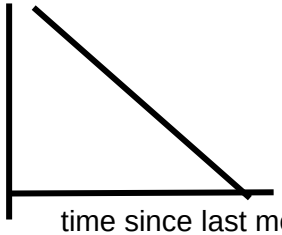
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Question	Answer	Marks
8(c)	**Hazel had planned to be an overt observer, but a colleague has said she should be a covert observer.**	
8(c)(i)	**Suggest <u>one</u> reason why it would be more ethical to be an overt observer than a covert observer <u>in this study</u>.** Ethical reason for being overt = 1 link = 1 Hard to ensure privacy / consent / protection / right to withdraw when covert; (reason) Objection to being watched when out **walking**; (link) worry that their **children** are being watched; (link)	**2**
8(c)(ii)	**Suggest <u>one</u> reason why it would be more practical to be a covert observer than an overt observer <u>in this study.</u>** Practical reason for being covert = 1 link = 1 Can get close to participants; (reason) So she could see/hear exactly what they were saying / singing; (link) Fewer demand characteristics/less social desirability; (generic reason) Ps may whistle etc more/less if aware they are being watched; (link)	**2**

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Question	Answer	Marks
9	**Hudson is planning to correlate how much a person wants to sleep (sleepiness) and the amount of time since their last meal. He will ask people to estimate the amount of time since their last meal, but he needs to find a way to measure sleepiness.**	
9(a)(i)	**Suggest <u>one</u> way that Hudson could measure sleepiness. Do <u>not</u> use an interview in your answer.** Suggestion = 1 Detail = 1 Questionnaire; (suggestion) Ask them to respond to a question with a scale 0–5 are you sleeping 0 (not at all) to 5 (very sleepy); (detail) Observe; (suggestion) How often their eyes close; (detail) Digital technology (suggestion) Use of health apps to measure alertness/energy (detail)	**2**
9(a)(ii)	**Explain <u>one</u> strength of the measure of sleepiness you suggested in part <u>(a)(i)</u>.** Strength = 1 Detail = 1 [this may be a comparison] *Questionnaire:* They can indicate ‘how much’ (they feel sleepy); (st) (rather than sleepy/not) so can measure extent; (det) Digital technology: It is an objective/unbiased measure of alertness (st) Rather than an observation where the researcher may misinterpret behaviours as sleepiness (when they’re not) (det) *Observe:* People may not be aware how tired they are; (st) So, observation is more accurate than self-report; (det)	**2**

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Question	Answer	Marks
9(a)(iii)	**Explain <u>one</u> weakness of the measure of sleepiness you suggested in part (a)(i).** Weakness = 1 Detail = 1 [this may be a comparison] *Questionnaire:* People may not want to admit (they feel sleepy); (w) so invalid / affected by social desirability; (det) *Observe:* People may hide signs of sleepiness; (weak) So appear less sleepy than they really are; (det) Whereas they couldn't hide it on an EEG; (comp) *Digital technology:* It is just a quantitative measure of physical state/biology (weak) So, there will be no detail about why they are sleepy/the measurements may be due to other factors (such as illness/stress) (detail)	**2**
9(b)	**Sketch a scatter graph, using the axes below, to show what the pattern of results would look like if Hudson found a negative correlation. You <u>must</u> label the axes.** axis headings (sleepiness) = 1 (can be on either axes) Axis headings ('time since last meal') = 1 Axis units for 'time since last meal' e.g. mins/hours = 1 Negative correlation shown = 1 e.g. sleepiness  time since last meal (hours)	**4**

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Question	Answer	Marks
10	**Zeta notices that people respond in different ways to advertisements for products. People may find the advertisements funny, annoying and/or informative. She is interested in advertisements for foods, vehicles and mobile phones.**	
10(a)	**Describe how Zeta could conduct a study using an interview to investigate the different ways that people respond to advertisements for different products.** **Do not describe sample/sampling technique or ethical issues/guidelines in your answer.** Use the table below to mark candidate responses to this question. The four required features for this interview are: **(a) question format** (**open** / **closed** questions/fillers/types of closed questions e.g. ranked scale/yes or no/multiple choice/type of data produced) **(b) examples** of questions (at least **two products** and **two responses**) **(c)** question **scoring / interpretation** (e.g. use of numerical scoring / measures of central tendency / analysis of qualitative data) **(d) format**: (description of **structured/unstructured/semi-structured**)	**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>
</td><td></td></tr>
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Question	Answer	Marks
10(b)(i)	**Explain how <u>one</u> part of the procedure you described in part (a) helps to make the study reliable.** **Do <u>not</u> refer to sampling or ethics in your answer.** identification of helpful part for **reliability** = 1 **explanation** (generic or linked) = 1 Part of procedure may relate to: • consistency within the rater • test-retest • replication Accept other practical/methodological features.	**2**
10(b)(ii)	**Explain how <u>one</u> part of the procedure you described in part (a) could be a problem for the reliability of the study.** **Do <u>not</u> refer to sampling or ethics in your answer.** identification of problem part for **reliability** = 1 **explanation** (generic or linked) = 1 Part of procedure may relate to: • consistency within and between raters (if compared) • test-retest • replication Accept other practical/methodological features.	**2**

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