



Cambridge International AS & A Level

PSYCHOLOGY

9990/02

Paper 2 Research Methods

For examination from 2024

MARK SCHEME

Maximum Mark: 60

Specimen

This document has **21** pages. Any blank pages are indicated.

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 descriptions for the question • the specific skills defined in the mark scheme or in the generic level descriptions 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 descriptions.
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 descriptions in mind.

**Social Sciences-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).

SPECIMEN**3 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.

Mark schemes will use these abbreviations:

IV = Independent variable

DV = Dependent variable

Question	Answer	Marks	Guidance
1	From the study by Andrade (doodling): Describe <u>two</u> ways that variables were controlled / the procedure was standardised. For each control: Award 1 mark for identifying each point of control/standardisation and 2nd mark for detail. Example: All participants were made equally bored/tired (1); (all) participants were taken just after another study. (2nd mark detail) Standardised instructions (1); e.g. saying 'write down the people who can or might come but not those who can't'. (2nd mark) (Note: does not have to be verbatim) All participants had paper available (1); so any participants could have doodled. (2nd mark) Random assignment to condition (1); otherwise the doodlers would choose the doodling group. (2nd mark) Recorded message (same tone etc.) (1) Standard speaking rate (of 227 words per min.) (1) Quiet room (no distractions/equally bored) (1) Visually dull room (equally bored) (1) Honorarium (equally motivated) (1) Counterbalancing of recall order (equally likely to be affected by order/practice/fatigue effects) (1) All participants were engaged in conversation before the surprise test (equal chance of forgetting) (1) Controls are keeping things the same between levels of the IV, e.g. making sure both groups <i>could</i> doodle. (1) Standardisation is keeping things the same between participants, e.g. they were all equally bored. (1)	4	

Question	Answer	Marks	Guidance
2	From the study by Perry et al. (personal space): Outline what is meant by a ‘placebo’, including the example from this study. Award 1 mark for a basic definition. Award 1 mark for the example. Definition: A solution / drug / procedure that has no effect; Something the participants believe will have an effect that will not. Example: (Sterile) saline solution / salt solution / salt water / the same solution the hormone was in but without the hormone.	2	

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Question	Answer	Marks	Guidance
3	From the study by Piliavin et al. (subway Samaritans):		
3(a)	Describe how the quantitative data was collected in this study. Award 1 mark for 'how', e.g. observation or frequency / time. Award 2nd mark for linked detail or a second way from the study. 2 mark answers must be linked to Piliavin et al. Example: Observation of time taken to help. (2) Frequency of helping the victim. (2) Time to help in model condition. (2) Observed the number of people helping. (2) Helping the victim was counted. (1) (accept as frequency of helping) From the critical and adjacent areas. (1) (detail) And the number of people who helped. (1) (detail) And the number of helpers of each race. (1) (detail) Two female (observers) = 1 (detail).	2	Accept answers about both the data and the observers. Field experiment = 0 marks (incorrect)
3(b)	Suggest <u>one</u> strength of collecting quantitative data in this study. Award 1 mark for a strength. Award 1 mark for a link to the study. Example: It can be analysed mathematically/statistically. (1) (strength); So they could calculate the percentage of people helping cane/drunken victims. (1) (link) It is objective. (1) (strength) So less bias in recording, e.g. if they expected more people to help one type of victim. (1) (link) So objective + statement of more/less/compare in relation to data = 2.	2	Once the 1st mark has been earned, giving an e.g. of the data is enough for a link if it illustrates the advantage. Numerical = REP = 0 marks

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Question	Answer	Marks	Guidance
4	Explain what is measured by the standard deviation. Award 1 mark for identifying that it is a measure of spread/dispersion. Award 1 mark for explaining that it shows how varied scores are around the mean. Example: The spread of the scores (1); around the mean. (1) = 2 marks	2	Way to find deviation of scores. = 0 (repetition)
Question	Answer	Marks	Guidance
5	In the study by Pozzulo et al. (line-ups), the experimenters wore ‘professional-casual clothing’.		
5(a)	Name <u>one</u> example of ‘professional-casual clothing’ worn by experimenters in this study. Any one of: • neat clothes (1) • blouse/shirt (1) • sweater/pullover/jumper (1) • dress-pants/trousers (1)	1	Smart dress / uniforms / lab coats are all incorrect.
5(b)	Explain why wearing ‘professional-casual clothing’ was necessary. Award 1 mark for basic explanation. Award 2nd mark for detail. Example: ‘Dress’ can affect children’s behaviour; (1) Smart dress / uniforms / lab coats might make the children more likely to make mistakes; (2nd mark) (detail) ‘Dress’ affects children’s choices in line-up tasks; (1) This possibly happens through social pressure; (2nd mark) (detail)	2	The explanation does not have to come from the study.

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Question	Answer	Marks	Guidance
6	Describe <u>two</u> ways that dependent variables can be measured, using any examples. Award 1 mark for a basic definition of dependent variables. Award 1 mark for each example / detail. Up to a maximum of 6 marks, max. 4 marks per way. Definition: Dependent variable is a variable that is measured in an experiment. Measured as time; e.g. seconds; as in Piliavin et al. timing latency to help (by Samaritans). Measured using a questionnaire; e.g. answers from (closed) questions; as in Andrade listing names of people / places. Measured as brain activity; e.g. using EEG; as in Dement and Kleitman to see REM sleep. Measured by observation; covert / overt; e.g. categories of behaviour; as in Piliavin et al. helping (by black or white / male or female participants, etc.) Accept alternative 'ways' e.g. different types of data – follow the intention of the candidate Self-reports (1), interview and/or questionnaire (1); e.g. asking questions face-to-face (example) (1) (detail); Accepted 'One-way mirror' as a 'way' Accepted 'memory task' as a 'way'	6	Bandura: observations; tallying aggressive acts. Baron-Cohen et al.: score on eyes test; measure of Term of Measurement. Milgram: observations; voltage reached; obedience. 'scientific machines' not enough – needs to name/describe one. Dependent variable specifically relates to experimental studies but accept Milgram if used as an example.

Question	Answer	Marks	Guidance
7	Xanthe is conducting a study to investigate whether there is a correlation between how funny a person finds jokes and how much activity there is in a particular brain region. She plans to measure brain activity using a brain scan.		
7(a)	Suggest one way that Xanthe could measure how funny a participant thinks each joke is. Award 1 mark for identifying a way to measure funniness. Award 2nd mark for detail. Example: by measuring laughter; (1) (identify) e.g. by timing how long they laugh for; (2nd mark) (detail) by asking them to say how funny they thought it was / judge feelings towards jokes; (1) (identify) e.g. by rating on a scale (of 1–5, where 5 is the funniest); (2nd mark) (detail) by observing how much they smile; (1) (identify) e.g. by estimating how wide their mouth is; (2nd mark) (detail)	2	

Question	Answer	Marks	Guidance
7(b)	Xanthe finds a correlation in her study. Explain <u>one</u> type of correlation that Xanthe could have found, using the variables she is measuring. Any of: • positive/negative (correlation); • between variables (funniness and brain activity); • explanation that brain activity increases as funniness increases (positive) / that brain activity decreases as funniness increases (ORA) (negative); Example: A negative correlation between funniness and brain activity (2) (correlation and variables) She could find that the more funny people found jokes, the more brain activity there was, which would be a positive correlation (3) (correlation, variables and explanation)	3	

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Question	Answer	Marks	Guidance
7(c)	Xanthe also plans to investigate whether there is a correlation between activity in the same part of the brain and sad stimuli rather than funny ones. Explain <u>one</u> ethical problem with Xanthe's new study that she did <u>not</u> have in the original study. Award 1 mark for describing an ethical problem (e.g. by naming a guideline). Award 1 mark for explanation (linked to Xanthe's study). Example: risk of breaking guideline of minimising harm (psychological) (1); (identification of problem) because the participants might be upset by the sad stimuli (1) (linked explanation) participants could become distressed (1) (identification of problem without guideline) because sad stimuli are unpleasant but the funny ones were not (1); (linked explanation)	2	

Question	Answer	Marks	Guidance
8	Robin is using a questionnaire to investigate the use of social media by 13–14-year-old children.		
8(a)	Suggest <u>one</u> question that Robin could use to collect qualitative data. Award 1 mark for any open question suitable for children about the use of social media (can be a statement that generates qualitative data). Example: Describe how you feel when you cannot access social media. (1) If you do not use social media, why not? (1)	1	

Question	Answer	Marks	Guidance
8(b)	When the children answer the questions, they might tell lies instead of telling the truth.		
8(b)(i)	Explain why the children telling lies would be a problem for the validity of the results. Award 2 marks for a detailed explanation of the impact on validity. Award 1 mark for a brief explanation of lying. Example: If they lie, the answers may not reflect their real social media use which would be a problem for validity (1) (explanation) Because lying could result in answers that exaggerated / reduced their real social media use; (1) (detail) They may lie because of social desirability (1) (explanation) so their answers will conform to their beliefs about what they think social media use should be (1) (detail).	2	
8(b)(ii)	Suggest <u>one</u> way that Robin could reduce the problem of children telling lies. Award 1 mark for a suggestion. Award 2nd mark for detail. Example: He could tell the children it is anonymous; (1) (suggestion) so they feel less pressure to conform (2nd mark) (detail). He could let each child fill in the questionnaire in private; (1) (suggestion) so they feel less need to lie (2nd mark) (detail).	2	The candidate may interpret the question widely and change the method. Award as appropriate.

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Question	Answer	Marks	Guidance
8(c)	Robin wants to use a wide range of children in his sample.		
8(c)(i)	Suggest how he could obtain a wide range of children in his sample. Award 1 mark for a suggestion (e.g. sampling technique or source). Award 1 mark for detail (e.g. how). Example: He could use random sampling; (1) (suggestion), e.g. taking children by candidate number from a school list using a random number generator (1) (detail). He could use volunteers from lots of different places; (1) (suggestion) for example by putting adverts in different schools (1) (detail).	2	
8(c)(ii)	Explain why it is important for Robin to have a wide range of children in his sample. Award 1 mark for an explanation (can be generic). Award 1 mark for a link to this scenario. Example: A wide range of children will improve generalisability / representativeness; (1) (explanation) so that the findings about these children's social media use apply to others (1) (link). If these children were all the same age / from one place they might use social media more/less than others in different age groups or locations (1) (link).	2	

Question	Answer	Marks	Guidance
9	Huan is planning a study to investigate attitudes to mental health. He will use an interview.		
9(a)(i)	Suggest <u>one</u> closed question that Huan could use to collect data about attitudes to mental health. Award 1 mark for any closed question with answer options about attitudes to mental health. Example: Do you think it is important to care about people with mental health problems? Yes / No (1) Which of the following are mental health issues? Depression / schizophrenia / obesity (1)	1	How important do you think it is to care about people with mental health problems? = 0 (open) Put these mental health conditions in order of importance. Depression / schizophrenia / dementia = 0 (rating scale)
9(a)(ii)	Suggest <u>one</u> weakness of using closed questions to collect data in Huan's study. Award 1 mark for a weakness (may be generic). Award 1 mark for a link to this scenario. Example: Responses to closed questions do not explain the 'why' / do not give in-depth data / there is no chance to explain; (1) (generic) so Huan would not know why people held those attitudes to mental health; (1) (link).	2	

Question	Answer	Marks	Guidance
9(b)	Suggest <u>two</u> advantages for Huan of using an interview in his study, rather than a questionnaire. For each advantage: Award 1 mark for an advantage (may be generic). Award 1 mark for a link to this scenario. Example: In an unstructured interview the researcher can respond individually / specifically / flexibly to the interviewee's answers; (1) (generic) so Huan could discover more about an individual's attitudes to mental health (1) (link). The interviewer can check the participant understands the question / that they understand the response; (1) (generic) so Huan would know his record of what the participant says about mental health is a valid reflection of their opinion (1) (link). Interviews tend to generate more qualitative data than questionnaires; (1) (generic) so the information about attitudes to mental health would be more detailed than if using a questionnaire (1) (link).	4	
9(c)	Huan is going to use opportunity sampling. Explain <u>one</u> weakness of using an opportunity sample in this study. Award 1 mark for a weakness (may be generic). Award 1 mark for a link to this scenario. Example: They might be unrepresentative / may be biased; (1) (generic weakness) so Huan's participants may be especially positive / negative / ignorant about mental health (1) (link).	2	

Question	Answer	Marks	Guidance
10	Dr Felix believes that adults between the ages of 55 and 65 cope less well with their job regardless of whether they stay in the same job or change jobs. Dr Felix plans to use a sample of adults aged 55 at the beginning of the study. She will re-contact the participants by telephone as she has a record of each individual's telephone number and will be following appropriate ethical guidelines.		
10(a)	Describe how Dr Felix could conduct a longitudinal study to investigate how well adults between the ages of 55 and 65 cope with their jobs. Do <u>not</u> describe how Dr Felix would re-contact her participants, the sample/sampling technique, or ethical issues/guidelines in your answer. Use the table below to mark candidate responses to this question. Four required features for this longitudinal study are: (a) tests/tasks: measures used (e.g. description of tasks, tests, questions, examples). (b) scoring: how the tasks/tests/questions will be scored or analysed (e.g. ratings, adding up totals, interpretation of qualitative data, comparing scores on the same tests over time such as with averages). (c) frequency/interval: pattern of testing over time (frequency, staffing, reuse of tasks/tests) Note: an experiment is not acceptable, i.e. cannot just be a repeated measures design with one test and one retest of a single measure of a dependent variable. (d) controls/standardisation: ways to maintain parity across testing intervals. Other appropriate responses should also be credited.	10	Note: information about re-contacting of participants (for repeated testing), e.g. participant tracking, (ethical record maintenance), participants (same group, large group, not necessarily all participants every time) is already provided so cannot earn credit and should be ignored.

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Question	Answer			Marks	Guidance
10(a)	Level	Description	Marks		
	5	The response: - describes all the required features, all explicit and with detail, with mostly appropriate terminology. - clearly applies knowledge of methodology involved in planning an investigation.	9–10		
	4	The response: - outlines all the required features, all explicit but only some of these with description/detail, with some appropriate terminology. - applies knowledge of methodology involved in planning an investigation.	7–8		
	3	The response: - outlines/identifies some of the required features and may have some description/detail, with some appropriate terminology. OR - outlines/identifies all the required features, but one or more required feature is implicit and with little appropriate terminology. - applies a basic knowledge of methodology involved in planning an investigation.	5–6		

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Question	Answer			Marks	Guidance
	Level	Description	Marks		
10(a)	2	The response: - outlines/identifies at least two of the required features but this lacks description/detail and uses little appropriate terminology. - attempts to use knowledge of methodology involved in planning an investigation.	3–4		
	1	The response: - identifies one of the required features and uses little appropriate terminology - OR may not use the method required by the question. - makes a limited attempt to use knowledge of methodology involved in planning an investigation.	1–2		
	0	No creditable response.	0		

Question	Answer	Marks	Guidance
10(b)(i)	Describe <u>one</u> practical/methodological strength of the procedure you have described in your answer to part (a). Do <u>not</u> refer to re-contacting the participants, sampling or ethics in your answer. Award 1 mark for identification of a generic strength. Award 1 mark for detail (this may or may not be linked). Strengths may include: Validity - operationalisation - situational / participant variables factors - controls / standardisation - design / counterbalancing. Reliability - inter-rater consistency - intra-rater consistency. Accept other practical/methodological strengths.	2	
10(b)(ii)	Explain <u>why</u> the feature of the procedure you have identified in (i) is a strength. Do <u>not</u> refer to re-contacting the participants, sampling or ethics in your answer. Both marks are for explaining the implications of the strength for the study. Award 1 mark for an explanation. Award 1 mark for detail. Max. 1 mark if no link to planned study. Explanation may include possible effects on: - participants' responses/behaviour if the procedure had been different - the collection of results if the procedure had been different - the interpretation of results if the procedure had been different.	2	

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