Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/21**

Paper 2 Research Methods **October/November 2021**

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 2021 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 descriptors 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 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.

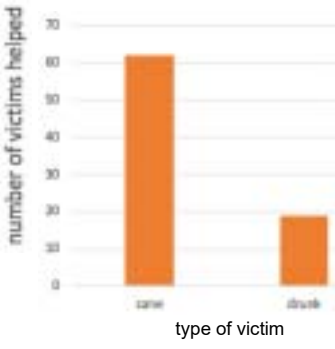
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Question	Answer	Marks
1(a)	**Explain why a questionnaire is a self-report method, including an example from a core study in your answer.** 1 mark for explanation (that the data comes **directly** from the **participant** / e.g. as **participant writes**) 1 mark for example Reference for core study is **not** sufficient, must give example of questionnaire by title or description Reference for core study must **match** example identified written questions to collect data from participants; (explanation) Self reports collect data directly from the participant; (explanation) E.g. **Baron-Cohen** et al. used the AQ/IQ tests; E.g. **Schachter and Singer** gave participants questionnaires to assess mood; E.g. **Laney** et al gave the restaurant questionnaire / FHI / FPQ / memory or belief questionnaire (MBQ);	**2**
1(b)	**Explain <u>one</u> strength of using questionnaires in research.** 1 mark for a brief/muddled strength 2 marks for a clear/detailed strength Participants are **alone** so they are **less** likely to give **socially desirable** answers; (brief) which increases the validity of the results; (2nd mark, detail) So the results are more likely to be honest/true answers; (detail) **Many participants** can answer at the same time, so a **big sample** can be obtained; (brief) Which increases the generalisability of the results; (2nd mark, detail) So the results will be based on and apply to a greater variety of people; (detail) Each participant is asked exactly the **same questions**, which increases **standardisation**; (brief) This makes the study more valid/makes analysis easier/comparison possible; (2nd mark, detail) Can collect data about **thoughts/feelings which cannot be observed**; (brief) E.g. could observe someone frowning but a questionnaire could ask if they were cross or puzzled; (2nd mark, detail) Easier for participants to stop answering/withdraw; (brief) Because they are not with an interviewer; (2nd mark, detail) They are (more) valid (than interviews) = 0 cheap/easy = 0	**2**

Question	Answer	Marks
2	**Dement and Kleitman (sleep and dreams) compared dream duration estimates for 5-min and 15-min REM periods.** **Write a null hypothesis for this part of the study.** 1 mark for a muddled (experimental) null hypothesis 2 marks for a clear (experimental) null hypothesis The hypothesis does not have to be operationalised for 2 marks Any difference between estimates of dream duration for different length REM periods is due to chance = 2 There will be no difference between dream duration estimates for different length REM periods = 2 Dream duration for different length REM periods will be the same = 1 There will be no difference between dream duration and length of REM period = 0 Any correlation between estimates of dream duration for different length REM periods is due to chance = 0 There will be no correlation between dream duration estimates and length of REM period = 0	**2**

Question	Answer	Marks
3	**In the study by Bandura et al. (aggression), inter-rater reliability was measured.**	
3(a)	**Outline what is meant by 'inter-rater reliability'.** 1 mark for outlining The extent to which two raters/researchers (coding the same data) produce the same records; When multiple raters are consistent (with each other);	**1**

Question	Answer	Marks
3(b)	**Describe <u>one</u> part of the procedure that improved inter-rater reliability in this study.** 1 mark for description (of procedure that increased inter-rater reliability) 1 mark for detail 1 mark for link Using scales that were objective; (description) four 5-point rating scales; (description) used in initial assessment of aggression; (detail/link) by experimenter and nursery school teachers (detail/link) the observation scales were piloted; and the scoring system amended; (description + detail) During the pretest…subjects imitated…components of the model's behavior but not the complete act, or they directed the imitative aggressive response to some object other than…Bobo… scored…as partially imitative behavior; (link) The behaviour categories were clearly/operationally defined; (description) Mallet aggression: strikes objects other than Bobo aggressively with mallet; Sits on Bobo: lays Bobo on its side and sits on it but does not aggress toward it; Punches Bobo: strikes, slaps, or pushes doll aggressively; Nonimitative physical and verbal aggression: physically aggressive acts directed toward objects other than Bobo; hostile remarks except for those in the verbal imitation category e.g. "Shoot the Bobo," "Cut him," "Stupid ball," "Knock over people," "Horses fighting, biting"; Aggressive gun play: shoots darts or aims the guns and fires imaginary shots at objects in the room; (detail + link)	**3**

Question	Answer	Marks
4	**In the study by Piliavin et al. (subway Samaritans), observers counted the total number of victims helped. The results were that 62 'cane' victims and 19 'drunk' victims were helped.** **Draw a bar chart of these results. You must label the axes.** 1 mark; units (number of helpers/number of victims helped) on y-axis 1 mark: number of victims helped (for frequency) on y-axis 1 mark: 'type of victim' on x-axis 1 mark: 'cane'/'ill' and 'drunk' as categories on x-axis 1 mark: correct plotting of 19 drunk and 62 cane Must have separate bars for full 4 marks  	**4**

Question	Answer	Marks
5	**In a study on memory, participants had to recall a story. The researchers measured memory by rating the accuracy of each participant's recall of the story on a 10-point scale.** **Suggest <u>one</u> weakness of using this scale to measure memory.** 1 mark for generic weakness 2 marks for linked weakness of this rating scale Rating scales can be subjective; (generic weakness) e.g. one researcher's view of '9' for **recall** may demand better recall than another researcher's '9'; (link) 10 points does not give enough discrimination (between memory ability); (generic weakness) A participant's **recall** might need to be judged as in between two points; (link) The participants may lie = 0 (NAQ) The participants may not understand the story = 0 (NAQ) Responses about other aspects of the study, e.g. the use of a story as a test of memory = 0 [irrl] Scale is quantitative and qualitative data is needed = 0 [NAQ] Scale is quantitative and qualitative data is needed to know why only some of the story was recalled = 0 [NAQ]	**2**

Question	Answer	Marks
6	**Describe laboratory experiments and field experiments, using any examples.** 1 mark for each definition, up to a maximum of 4, for each type of experiment. 1 mark for each example that is linked to one issue, up to a maximum of 2, for each type of experiment. Examples can include examples from any studies (core studies, other studies, candidate's own studies). Max 4 if only about one type of experiment **Laboratory experiment:** has (manipulated) IV and (measured) DV; (definition) happens in an artificial environment; (definition) So there can be many controls; (definition) Canli et al.: randomised the order of the pictures, thus controlling for familiarity of type; Canli et al.: controlled for participant concentration by having a fixation cross; Dement and Kleitman: controlled for factors affecting sleep as participants told not to drink alcohol/caffeine; Schachter and Singer: controlled the stooges' behaviours as they were scripted; 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; Laney et al.: controlled for processing of feedback by giving additional questions (imagine the setting); Yamamoto et al.: same tool familiarisation process; Pepperberg: controlled for familiarity of trainer during testing; Bandura et al.: IV was gender of child / aggressive or non-aggressive model and DV was aggression; **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. changed the stooge/victim (cane or drunk); Piliavin et al. measured the number of helpers/speed of helping; Piliavin et al. controlled the actions/clothing of the stooge;	**6**

Question	Answer	Marks
7	**Bruce is planning a case study of a famous woman known worldwide for her helpfulness.**	
7(a)	**Explain <u>one</u> strength of the case study research method.** 1 mark for identifying a strength 1 mark for detail (can be linked) One person is generally chosen for some special characteristic; (ID) e.g. a rare condition so something can be investigated that it would be impossible to study otherwise; (detail) Can study in depth/detail; (ID) detailed data means that **complex issues** can be explored (providing a much richer understanding) / which is **better** than just recording a **single DV** in an experiment; (detail)	**2**

Question	Answer	Marks
7(b)	**Explain <u>two</u> weaknesses of the case study research method, using Bruce's study as an example.** 1 mark for weakness } 1 mark for link } ×**2** Bruce may interpret her comments differently than another researcher/may **interpret** subjectively; (weakness) Bruce's personal viewpoint, is that she is exceptionally helpful, so will interpret data this way; (weakness + link) The woman Bruce is studying is exceptionally helpful, so his findings won't apply to normal helping; (link) So low generalisability; (weakness: 2nd mark only) Bruce believes she is helpful, so will interpret his results that way; (weakness + link) So low reliability; (weakness: 2nd mark only) Difficult to keep confidentiality (if case is rare); (weakness) She will be hard to disguise as famous; (link) Risk of invading privacy as study is in-depth / due to familiarity with researcher; (weakness) As she is famous the researcher may already know things about her so the questions may be too personal; (link) As she is famous there may be rumours about her so she may be embarrassed by questions; (link) Case studies are overt so she may be affected by social desirability; (weakness) And pretend to be even more helpful to look good to Bruce; (link) She is only one person (not representative of the population) so low generalisability; (weakness without link) Case studies are hard to replicate; (weakness without link) Low generalisability/validity/reliability/objectivity = 0 **[if only term]**	**4**

Question	Answer	Marks
8	**Nola is investigating whether there is a correlation between hours of sleep and how much a person argues. She thinks that people who sleep less may argue more. Her friend Tim is making suggestions about her procedure.**	
8(a)	**Nola and Tim have different ideas for recording participants' hours of sleep per night:** • Nola plans to ask participants to record this at home. • Tim says it would be a better to record this in a laboratory.	

Question	Answer	Marks
8(a)(i)	**Suggest one <u>ethical</u> reason why <u>Nola's</u> idea is better than Tim's idea.** 1 mark for an unlinked or brief suggestion about ethics, 2 marks for a clear and linked suggestion about ethics Sleeping at home gives better **privacy**; (brief) Will be alone to sleep at home; (link) Sleeping at home is more ethical because participants might find being in a strange place / knowing there are researchers around **distressing** so sleep poorly / which is **harmful**; (clear and linked) = 2 marks	**2**
8(a)(ii)	**Suggest <u>one</u> <u>practical</u> reason why <u>Nola's</u> idea is better than Tim's idea, other than avoiding the need to use a laboratory.** 1 mark for an unlinked or brief practical suggestion 2 marks for a clear and linked practical suggestion Sleeping at home is higher in (ecological) validity / They will behave more naturally / higher mundane realism; (brief) Sleep at home has more ecological validity; sleep time will be typical / likely to show correlation to arguing if there is one; (clear, linked)	**2**
8(a)(iii)	**Suggest <u>one</u> <u>practical</u> reason why Tim's idea is better than Nola's idea.** 1 mark for an unlinked or brief practical suggestion 2 marks for a clear and linked practical suggestion Timing sleep at home is hard to do / Timing sleeping in a lab is easier to do; (brief) Lab is more standardised/controlled; (brief) e.g. people at home might get angry because of other people; (link) Hard to time sleep at home; participant might make errors / lie / not know when they fell asleep / awoken in night; (clear and linked)	**2**
8(b)	**Nola finds the correlation she expected, that people who sleep less argue more.** **Explain why Nola cannot know whether sleeping less causes people to argue more.** 1 mark for a generic explanation 1 mark for a link It's a correlation so she cannot judge causation; (generic) It's a correlation so she cannot judge whether sleep deprivation is what causes argumentativeness, it could be that argumentative people do not sleep as well; (explanation and link = 2) She is only considering two factors/there might be a third factor; e.g. stress/ work/illness; (generic then link = 2)	**2**

Question	Answer	Marks
9	**Naomi is designing an observation of helping behaviour at an entrance to a library that has a door which is difficult to open She intends to observe people carrying many books and will record the gender of each person who helps to open the door.**	
9(a)	**Naomi could either be a participant observer or a non-participant observer.**	
9(a)(i)	**Suggest <u>one</u> advantage of her being a participant observer.** 1 mark for advantage 1 mark for link She would be able to be very close; (advantage) So could see or hear whether the book-carrier / library user / stooge solicited the helping; (link) Being involved means she won't affect the participants' behaviour; (advantage) If she was an onlooker who wasn't involved, people might feel they have to help; (link)	**2**
9(a)(ii)	**Suggest <u>one</u> advantage of her being a non-participant observer.** 1 mark for advantage 1 mark for link If she wasn't involved she would be more objective; (advantage) Because if she was involved she might see 'helping' that didn't really exist; (link) Reference to covert/hidden is irrelevant	**2**
9(b)	**Explain the type of data Naomi is collecting.** 1 mark for identifying **quantitative** 1 mark for justification [mark is independent of correct identification] Quantitative; Because they can be male **or** female helpers; (justification) Because she is **counting the number** of each gender helper; (justification) **Counting** helping; (justification) if someone held the door open **or not**; (justification) The **total** times they helped; (justification) Because it is the number of each gender; (justification) if someone held the door open = 0 (not quantitative)	**2**

Question	Answer	Marks
9(c)	**Situational variables could affect Naomi's results.**	
9(c)(i)	**State what is meant by a 'situational variable'.** 1 mark for definition a confounding variable that is due to the influence of the environment; something about the environment/setting that affects the DV other than the IV; uncontrolled variable that is due to the situation = 0 [REP]	**1**
9(c)(ii)	**Suggest how <u>one</u> situational variable could affect Naomi's results.** 1 mark for situational variable 2 further marks for effect on results (likely to be linked but do not have to be) If the **library** is busy (or not); (situational variable) Whether it is the start/end of the day; (situational variable) What the weather is like / if it is raining; (situational variable) If the **library is busy**; people may be more likely to help; because they see other people helping / not because of gender; If it is the **start of the day**; people may help more; because they haven't been at work yet / not because of gender; If it is **raining**; people may be less likely to help; because they don't want to get wet / not because of gender; If it is **raining**; people may be less likely to help; which lowers validity;	**3**

Question	Answer	Marks
10	**Brendan is planning to use a semi-structured interview in a study about road users. He intends to use a sample of people who are walking (pedestrians). Brendan will investigate the pedestrians' feelings, thoughts and actions towards other road users, e.g. other pedestrians, cyclists and drivers.**	
10(a)	**Describe how Brendan could conduct a study using a semi-structured interview to investigate participants' feelings, thoughts and actions towards other road users.** Three **majors** for a **semi-structured interview** are: **a** **content of questions** asked (topics, examples: feelings, thoughts, actions) **b** interview **structure** detail (*both* fixed *and* variable questions, writing/recording answers, fillers) **c** **style of questions** asked (open, closed, correct example for each) The **minors** are: **where** – location of participants when being interviewed **who** – participants (people who are road users) Other details for replication: • lie questions • filler questions • sampling technique • sample size • description of how data will analysed, e.g. use of averages/bar charts • ethical issues Other appropriate responses should also be credited. Mark according to the levels of response criteria below: **Level 3 (8–10 marks)** • Response is described in sufficient detail to be **replicable**. • Response may have a minor omission. • Use of psychological terminology is accurate and comprehensive. **Level 2 (5–7 marks)** • Response is in some detail. • Response has minor omission(s). • Use of psychological terminology is accurate. **Level 1 (1–4 marks)** • Response is basic in detail. • Response has major omission(s). • If response is impossible to conduct max. 2. • Use of psychological terminology is mainly accurate. **Level 0 (0 marks)** No response worthy of credit.	**10**

<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>10(b)</td><td>
Identify <u>one</u> practical weakness/limitation with the procedure you have described in your answer to part (a) and suggest how your study might be done differently to overcome the problem.

Do not refer to ethics or sampling in your answer.
Answer will depend on problem identified.

Problems may, for example, be matters of:

Validity
• operationalisation
• situational/participant variables factors

Reliability
• inter-rater consistency
• intra-rater consistency.

This list is not exhaustive and other appropriate responses should also be credited.
<table>
<tr><th>Marks</th><th>Comment</th></tr>
<tr><td>3–4</td><td>Appropriate problem identified.
Appropriate solution is clearly described.</td></tr>
<tr><td>2</td><td>Appropriate problem identified.
plus
EITHER
Explanation of why it is a problem
OR
Ineffectual but possible solution described.</td></tr>
<tr><td>1</td><td>Appropriate problem identified.
Little or no justification.</td></tr>
<tr><td>0</td><td>No response worthy of credit</td></tr>
</table>
</td><td>4</td></tr>
</table>