Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/23**

Paper 2 Research Methods **May/June 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 May/June 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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[Turn over

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)	**State what is meant by the 'aim' of a study.** 1 mark for explanation it tells you the purpose of the investigation / what the study intends to find out or show; (explanation)	**1**
1(b)	**Outline <u>one</u> aim from the study by Piliavin et al. (subway Samaritans).** 1 mark for aim • to investigate whether models affect altruism / to record the time it takes to help; • to test whether race affects helping / to count numbers helping black or white victims; • to compare helping by males and females; • to test whether 'reason' (ill/drunk) affects helping / to count numbers helping ill or drunk victims; • to test bystander effect / diffusion of responsibility	**1**

Question	Answer	Marks
2	**The study by Canli et al. (brain scans and emotions) raised ethical issues of 'right to withdraw' and 'protection from harm'.** **Explain why the study by Canli et al. raised these ethical issues.** 1 mark for description + 1 mark for link x2 Right to withdraw: participants can leave a study at any time; for example if they are uncomfortable or distressed; and remove their data; without loss of payment; they should not be pressurised to continue; Right to withdraw may not be apparent if the participant is unaware that they are participating; and may suffer harm as a consequence; Canli et al.'s participants could not easily withdraw from the fMRI machine (as they are hard to get out of, e.g. if they became claustrophobic / because their heads were held still by the bite bar); (link) They were in a scanner; so couldn't leave if they wanted; = 2 Protection from harm: a participant should not be exposed to any greater physical or psychological risk than would be expected in their day-to-day life; Canli et al. used an fMRI machine which carries risks for people whose bodies contain metal objects (and a participant might not have known this, so have been at risk); Canli et al. (deliberately) exposed participants to negative images, (which may have been distressing); (link) Canli et al. (apparently) did not use positive images afterwards to reverse the potential mood change; (link) They saw scary/unpleasant images; which could have cause harm; = 2	**4**

Question	Answer	Marks
3	**In the study by Laney et al. (false memory) random allocation was used.**	
3(a)	**Explain what is meant by 'random allocation', using this study as an example.** 1 mark for definition, 2nd mark for link Random allocation is a way to divide participants between levels of the independent variable such that any participant has an equal chance of being in any condition; (definition) Laney's participants were in the 'love' (asparagus) / false memory group or the control group; (link) Laney's participants were in the 'love' (asparagus) / false memory group or the control group by chance; 2 Participants are put in experimental or control group without bias = 0 (because could be stratified allocation)	**2**
3(b)	**Explain <u>one</u> strength of using random allocation in this study.** 1 mark for strength, 1 mark for link Random allocation reduces the effect of confounding variables such as individual differences; (strength) The participants could have really loved asparagus or not (so would be spread between the groups); (link) The participants could have differed in gullibility to false memories (so would even across groups); (link)	**2**

Question	Answer	Marks
4	**In the study by Bandura et al. (aggression), children were shown a room full of attractive toys to play with but were told they were for other children.** **Explain <u>one</u> of the two reasons Bandura et al. gave for doing this.** 1 mark for a brief muddled explanation, 2 marks for a clear/detailed explanation From the paper: To make them angry/jealous/annoyed/aroused; So they were all equally likely to be aggressive; So they were likely to be aggressive in the next room; To ensure the children in the nonaggressive condition were feeling aggressive = 1 To ensure the low(ered) aggression children could be demonstrated in the nonaggressive condition = 2 To ensure they were likely to be aggressive/aroused = 1 To ensure performance of aggressive behaviour was not reduced by having watched aggression / catharsis = 2	**2**

Question	Answer	Marks
5	**Two studies are using different methods to investigate the topic of dreaming in deaf people:** • **Dr Kahlil is studying Joseph, who is deaf and has dreams about people using sign language.** • **Dr Hart is studying six deaf people and six hearing people to compare the length of their REM periods.**	
5(a)	**Explain which <u>one</u> of these investigations is a case study.** 1 mark for reasoning (no mark for just stating 'Dr Kahlil') 1 mark for link/detail/comparison The first study / Dr Kahlil's because he is studying one person; (reasoning) He only studies Joseph; (link) The first study / Dr Kahlil's because he is studying in depth; (reasoning) He studies sign language dreams in detail; (link) Dr Kahlil's because he studies one participant whereas Dr Hart compares two groups = 2 (comparison)	**2**
5(b)	**Explain <u>one</u> strength of using a case study to investigate this topic.** 1 mark for strength of a case study 2 mark strength of a case study linked to topic (not simply to 'Joseph') Collects in depth data / reasons why; So can better understand deaf people's / sign language dreams; Case studies produce detailed data about rare cases = 1 mark (generic strength) Analysing the dreams of deaf people may be difficult because they may dream differently from hearing people and in a case study care can be taken to ensure the researcher's interpretation matches what the participant meant = 2 marks (linked strength) Case studies can use several different techniques / triangulation (raising validity) = 1 mark (generic strength) Case studies of deaf people can use different techniques such as interviews (in sign language), written dream diaries and EEGs which will be helpful to ensure interpretations are valid = 2 marks (linked strength) More data/results = 0 [case studies gain in depth data not 'more data']	**2**

Question	Answer	Marks
6	**Describe positive correlations and negative correlations, using any examples.** 1 mark for what a correlation is – looks for relationships / links between variables 1 mark for each definition, up to a maximum of 2, for each type of correlation 1 mark for each example that is linked to one issue, up to a maximum of 2, for each type of correlation. Examples can be from any studies (core studies, other studies, candidate's own psychological studies). Max 4 if no examples Max 5 if only positive / only negative  positive correlation: where two variables increase in the same direction / as one variable increases the other does too / directly proportional; has a coefficient between 0 and +1; (definition) Dement and Kleitman found a positive correlation between dream duration and dream narrative word count; Canli et al. found a left amygdala positive correlation: the greater the activation, the stronger the memory; Piliavin et al. proposed a positive correlation between number of bystanders 'diffusion of responsibility': the greater the number of bystanders, the greater the diffusion of responsibility;  negative correlation: where two variables increase in opposite directions / as one variable increases the other decreases / inversely proportional; has a coefficient between 0 and –1; (definition) Baron-Cohen et al. found a negative/inverse correlation between eyes test score and AQ; Canli et al. found a negative correlation: the greater the emotional intensity (of the stimulus) the weaker the memory; Piliavin et al's. proposed correlation between number of bystanders and 'diffusion of responsibility' can be described as a negative correlation: the more bystanders there are, the lower the speed/frequency of helping; Other ideas might be: Positive: time spent watching TV and aggression; Negative: hours of sleep and ability to concentrate; time spent in therapy and level of symptoms;	**6**

Question	Answer	Marks
7	**Jane is planning a laboratory experiment with two groups of participants. One group speaks one language fluently and the other group speaks two or more languages fluently. Jane thinks this may affect her dependent variable of how well they learn 'nonsense' words. These are words that read like real words but have no meaning.**	
7(a)	**Jane has two possible ways to measure her dependent variable:** • **by timing how quickly the participant can recall 10 nonsense words correctly** • **by counting the number of spelling errors made when recalling 10 nonsense words.**	
7(a)(i)	**Explain <u>one</u> strength of <u>one</u> of Jane's measures of her dependent variable.** 1 mark for justification of candidate's choice of measure (no mark for just choosing one of the measures) 1 mark for link / context Timing / number of spelling errors is objective/valid/quantitative; (strength) i.e. comparisons of speed of response to / errors in nonsense words between one and two-language groups; (link) Timing / counting errors is objective; (strength) So Jane can't make be biased in her judgments (of time); (link) Jane so she must be testing what she claimed to; Because they've not learned the words if they can't spell them; (link)	**2**
7(a)(ii)	**Explain <u>one</u> weakness of the measure of the dependent variable that you have referred to in (a)(i).** 1 mark for a brief muddled weakness 2 marks for a clear/detailed weakness how quickly the participant can respond: timing may not be valid as a measure because people learn words at different speeds; so the times would depend on individual differences / participant variables not number of languages spoken; number of spelling errors: number of errors may not be valid as a measure because people differ in spelling ability anyway; so the errors would depend on individual differences / participant variables not number of languages spoken;	**2**

Question	Answer	Marks
7(b)	**Suggest <u>one</u> way that Jane can operationalise 'speaking a language fluently'.** 1 mark for a brief muddled operationalisation 2 marks for a clear/detailed operationalisation Speaking easily and without many pauses = 2 Being able to understand = 1 Being able to understand well enough to deal with a native speaker in conversation = 2 Coping with everyday life in that language = 1 Coping with everyday life in that language, such as being able to buy food / work / study / understand a film = 2 Having a qualification = 1 e.g. British Council Certificate / IGCSE English	**2**
7(c)	**Jane used an independent measures design in her experiment.** **Explain <u>one</u> reason why it would have been better for Jane to use a matched pairs design than an independent measures design.** 1 mark for reason (comparison may be explicit or implicit) 1 mark for link (e.g. variable relevant to ability to learn/recall words or speed of response) Matched pairs designs reduce/eliminate participant variables; (reason) In Jane's experiment these might be reaction time / age / intelligence (which could affect ability to learn nonsense words / respond quickly/accurately to questions); (link)	**2**

Question	Answer	Marks
8	**Kofi is planning an observation of aggression in sport. He will attend a range of different sporting events to record aggressive behaviour. At first, Kofi is not certain what kinds of behaviours he will see.** Credit reference to players or spectators throughout Q8.	
8(a)(i)	**Explain why, at first, Kofi uses an unstructured observation.** 1 mark for explanation 1 mark for link as he wouldn't know which behaviour categories to use = 1 to decide which behaviours to choose (to observe next) = 1 to decide which aggressive behaviours to choose (to observe next) = 2 to decide which behaviours to choose for each sport = 2 Because he can record all the different behaviours = 1 (generic explanation) as he doesn't know what aggressive behaviours he will see / will see in different sports; (link)	**2**
8(a)(ii)	**After watching different sports, Kofi can now use a structured observation.** **Explain <u>one</u> strength of using a structured observation in Kofi's study.** 1 mark for strength 1 mark for link He would have an objective / reliable list of the different behaviours (in advance); (generic strength) this is important so he can concentrate on the aggression he sees and just tally so he observes better; (link) He would have a specific list of the different aggressive behaviours; (link) This is better as he can focus on observing and check listing (rather than writing details); (generic strength) The list of behaviours makes comparison easier; (generic strength) So he can compare (the same thing about) different sports; (link)	**2**

Question	Answer	Marks
8(b)	**Kofi has decided to be a covert observer.**	
8(b)(i)	**Suggest <u>one</u> strength of being a covert observer in this study.** 1 mark for strength 1 mark for link His role as an observer would not be apparent / he would be hidden/ disguised; (strength) and other spectators could limit their aggression (or exaggerate it) if they thought they were being observed (making the results less valid); (link) Participants won't change behaviour / respond to demand characteristics / show social desirability; (strength) So their aggression levels will be normal; (link)	**2**
8(b)(ii)	**Suggest <u>one</u> weakness of being a covert observer in this study.** 1 mark for weakness 1 mark for link Keeping your role hidden might make it hard to see; (weakness) So he may not be able to access all the aggression that is happening (making the results less valid); (link) No consent / participants are deceived / denied right to withdraw / potential harm; (weakness) The players / spectators unaware of observation / need right to avoid being observed / might be distressed if they find out they have been watched; (link)	**2**

Question	Answer	Marks
9	**Naia wants to interview young people about how environmental issues make them feel. She wants to collect data about emotional responses to issues such as recycling. She has decided to conduct a structured interview.**	
9(a)	**Suggest <u>one</u> open question Naia could ask about emotions.** 1 mark for open question Describe how do environmental issues make you feel = 1 Do you recycle or not, and why? = 0	**1**
9(b)	**Suggest <u>one</u> closed question Naia could ask about emotions.** 1 mark for closed question with answer choices When you see litter / waste how upset do you feel on a scale of 1 (not at all) to 10 (very)? = 1 Which of the following do you recycle: paper, plastic, metal, glass? = 0	**1**

Question	Answer	Marks
9(c)	**Suggest <u>one</u> weakness of using a structured interview in Naia's study.** 1 mark for weakness 1 mark for link It means she cannot ask questions to follow up on a participant's answer; (weakness) Her understanding of their emotions will be incomplete if she needed more information from them; (link) She couldn't explore individual interests in environmental issues; (link)	**2**
9(d)	**One participant says that Naia's questions are too personal.** **Explain <u>two</u> ethical guidelines that are important to overcome this problem.** **Do <u>not</u> refer to protection from harm or right to withdraw in your answer.** 1 mark for ethical problem + 1 mark for link/detail/solution x2 No mark for simply naming guideline/issue Informed consent: participants must understand the aims/procedure; and agree to the aim / procedure (but they didn't); Naia's participants expected questions on environmental issues and emotions, which isn't very personal; (link) participants should understand and agree to the aim/procedure but perhaps they weren't brief; Naia should have told them the questions included ones on their emotions, which can be personal; (link) Debriefing: participants should be returned to their previous state after participation, but they weren't; Naia's participants were still upset by the questions about environmental issues and emotions; (link) Privacy: participants must not feel that personal thoughts are being invaded so the questions must change; Naia could ask what participants think other people are doing / not doing about environmental issues; (link) e.g. ask 'do you disapprove when your neighbours don't separate their rubbish for recycling? (link)	**4**

Question	Answer	Marks
10	**Riley notices that children at his school appear to be nicer to each other at morning play time than at afternoon play time.**	
10(a)	**Describe how Riley could conduct a natural experiment to investigate when the children are nicer.** Three majors for a natural experiment are: (a) What: – IV: morning and afternoon play time (e.g. exact times, how many days, experimental design) (b) How: – DV: levels of kindness (e.g. behavioural categories, sampling method) (c) Where: – school (playground, classroom, field, location of observer, participant observer, e.g. in play) The minors are: who: school-aged children how: controls Other details for replication: sampling technique sample size ethical issues re. children description of how data will analysed, e.g. use of averages / bar charts 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 <u>not</u> 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>

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