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Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/21**

Paper 2 Research Methods **May/June 2020**

MARK SCHEME

Maximum Mark: 60

Published

Students did not sit exam papers in the June 2020 series due to the Covid-19 global pandemic.

This mark scheme is published to support teachers and students and should be read together with the question paper. It shows the requirements of the exam. The answer column of the mark scheme shows the proposed basis on which Examiners would award marks for this exam. Where appropriate, this column also provides the most likely acceptable alternative responses expected from students. Examiners usually review the mark scheme after they have seen student responses and update the mark scheme if appropriate. In the June series, Examiners were unable to consider the acceptability of alternative responses, as there were no student responses to consider.

Mark schemes should usually be read together with the Principal Examiner Report for Teachers. However, because students did not sit exam papers, there is no Principal Examiner Report for Teachers for the June 2020 series.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the June 2020 series for most Cambridge IGCSE™ and Cambridge International A & 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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Question	Answer	Marks
1	**In the study by Baron-Cohen et al., one variable was the score on the Eyes Test.**	
1(a)	**State whether this was an independent variable or a dependent variable. Include a reason for your answer.** 1 mark for DV **and** reason. Dependent variable because it was being measured = 1 Dependent variable because it differed according to whether the participant was autistic or not = 1 Dependent variable because it varied with the level of the IV/condition = 1 Dependent variable because eyes test score differed between the controls and autistics = 1 Dependent variable = 0 Independent variable because it was being measured = 0 Independent variable because it varied with the level of the IV/condition = 0	**1**
1(b)	**One problem with the original version of the Eyes Test was that the results produced a 'ceiling effect'. This is where most participants obtain high scores on the test. Explain why a ceiling effect is a problem.** 1 mark for reason. It limits the variance / spread = 1 It becomes hard to distinguish between different scores = 1 It wouldn't have been possible to distinguish the controls and autistics even if there was a difference = 1	**1**

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Question	Answer	Marks
2	**A psychologist is investigating whether a person's happiness depends on whether people around them are happy.**	
2(a)	**Suggest how you could operationalise 'happiness' when using observations.** 1 mark for any plausible measure. Count number of smiles = 1 Time length of time smiling = 1 Score laughter from 1–5 = 1 Observe the participant in social contexts to watch their family / friends / work colleagues = 0	**1**
2(b)	**Suggest how you could measure 'happiness' when using a self-report.** 1 mark for any plausible measure. Ask the participant / family / friends / work colleagues to answer questions about their happiness = 1 Ask them to fill in a questionnaire about behaviours suggesting happiness = 1 Interview them about their emotions =1	**1**
2(c)	**Write a directional (one-tailed) hypothesis for this investigation. You do not have to operationalise your hypothesis.** 1 mark for correct **directional** hypothesis (does not have to be operationalised). Accept experimental or correlational hypotheses. People feel happier when people around them are happy rather than unhappy = 1 [experimental] People feel happier when people around them are happy than if other people are not = 1 [experimental] People are happier when people around them are happier = 1 [correlational] 0 marks for a null hypothesis.	**1**

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Question	Answer	Marks
3	**One part of the investigation by Dement and Kleitman (sleep and dreams) involved a correlational study measuring a range of times spent in REM sleep and the number of words in the participant's dream narrative.**	
3(a)	**Explain why this part of the investigation was a correlational study rather than an experiment.** 1 mark for explanation (generic or linked) Because they were looking for the relationship between two variables = 1 Because they were looking for the relationship between time spent in REM and length of the narrative = 1	**1**
3(b)	**Explain <u>one</u> disadvantage of using a correlation in this study.** 1 mark for disadvantage 1 mark for link correlations cannot find causal relationships = 1 (disadvantage) so they couldn't tell if REM sleep *caused* dreams / e.g. between REM and dreaming = 1 (link) the correlation was difficult to see = 1 (disadvantage) because there were only a few long REM phases = 1 (link) a correlation that was found may have been flawed = 1 (disadvantage) because the number of words in the dream narrative could depend on expressiveness = 1 (link)	**2**

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Question	Answer	Marks
4	**In a study about helping, participants were told the study was about visual tracking. They played a computer game in which they could help other players. They were given fake eye-movement tracking spectacles to wear.**	
4(a)	**Explain the ethical issue of deception, using this study as an example.** 1 mark for explanation of deception 1 mark for link deception involves misleading / lying to participants = 1 (explanation) the participants were told the study was about visual tracking but really it was about helping = 1 (link) the participants were given spectacles to wear but they were not real = 1 (link)	**2**
4(b)	**Some participants were upset at debriefing because they had not helped other players.** **Explain the ethical guideline of protection, using this study as an example.** 1 mark for explanation of protection 1 mark for link Protection from harm means not (physically or) mentally distressing participants = 1 (explanation) Protection from harm means if a participant's state has changed they should be returned to their original state = 1 (explanation) Participants were upset so they should be reassured / made happy again / told the helping wasn't real so it was okay = 1 (link)	**2**

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Question	Answer	Marks
5	**Before the study by Pepperberg (parrot learning), most research on animal learning had been conducted on primates, such as chimpanzees.**	
5(a)	**Explain <u>one</u> ethical reason why a parrot is a better choice of animal than a chimpanzee for a study in a laboratory.** 1 mark for related animal guideline or logical ethical reason 1 mark for relating idea to parrot and/or chimp 'species and strain' says you should use the species that will suffer the least = 1 (guideline) and parrots cope best in a test setting because they are used to being kept in cages = 1 (link) chimps are much more intelligent than parrots = 1 (logical reason) so chimps would be more distressed by strange procedures like being expected to learn about coloured shapes = 1 (link)	**2**
5(b)	**Explain <u>one</u> practical or methodological reason why the parrot was a better choice of animal than a chimpanzee for this study.** 1 mark for practical reason 1 mark for relating idea to parrot and/or chimp smaller animals are easier to keep = 1 (reason) and parrots are smaller than chimps = 1 (link) chimpanzees can become aggressive = 1 (reason) so parrots are safer = 1 link	**2**

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Question	Answer	Marks
6	**Describe what is meant by 'experimental conditions' and 'control conditions' in research, using any examples.** 1 mark for basic definition of 'experimental condition'. 1 mark for basic definition of 'control condition'. Up to 5 further marks for detail / examples. The experimental condition is the condition / level with the IV present = 1 (definition) The control condition is the condition / level with the IV absent = 1 (definition) Two experimental conditions can be tested against each other / without a control; e.g. if two drugs are being tested for their efficacy = 1 (relevant example) The control condition is used as a baseline to compare the experimental condition(s) against; e.g. if the efficacy of one drug is compared to that of a placebo = 1 (relevant example) e.g. Bandura et al. used two experimental conditions of aggressive and non-aggressive model = 1 (core study example) e.g. Bandura et al. used a control condition of no model = 1 (core study example) e.g. Yamamoto et al. compared experimental conditions 'can see' with control condition 'cannot see' e.g. Schachter and Singer used two experimental conditions of angry and euphoric stooge = 1 (core study example) e.g. Schachter and Singer compared a control condition of 'ignorant' to experimental conditions (Mis/Inf) = 1 (core study example)	**6**

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Question	Answer	Marks
7	**Maria is conducting a self-report study into obedience using school children as participants. Her questions are:** **Question 1 How many times this week have you disobeyed a teacher? Never / once / 2–3 times / 4 times or more** **Question 2 Describe why you last disobeyed a teacher.**	
7(a)(i)	**State which question collects quantitative data. Include a reason for your answer.** 1 mark for identifying question 1 **and** explaining that it collects numerical data 'Question 1' + 'numerical' = 1 '1' + 'comes from the scale Never / once / 2-3 times /4 or more times' = 1	**1**
7(a)(ii)	**State why this type of data is useful.** 1 mark for explanation of usefulness Because it can be analysed / compared = 1 Because it is (usually) objective = 1	**1**
7(b)	**Suggest <u>one other</u> question which could be used in Maria's study that would collect quantitative data.** 1 mark for closed question related to study Would you disobey a teacher who asked you to clean the board? Y/N = 1 How likely would you be to obey the teacher if he told you to sweep the floor? 1 (very) – 5 (not at all) = 1	**1**
7(c)	**Identify the <u>most</u> appropriate measure of central tendency for Maria to use with the responses to her first question. Include a reason for your answer.** Mode = 1 it finds the most common response = 1	**2**

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Question	Answer	Marks
8	**Richard is conducting an experiment to investigate whether daydreams are affected by the type of background noise. He has two groups who are both given a boring task in a room. For one group there are children laughing outside the open window. For the other group there are adults talking loudly in the corridor. Different participants are used in each group.**	
8(a)(i)	**Identify Richard's experimental design. Include a reason for your answer.** 1 mark for independent measures design (accept independent groups / between subjects, do NOT accept just 'independent') Independent measures design = 1 because the child group and adult group are separate = 1 because different participants are used in each group = 1	**2**
8(a)(ii)	**Suggest <u>one</u> advantage of this experimental design in this study.** 1 mark for advantage 1 mark for link overcomes order effects = 1 (advantage) the boring task would be even more boring the second time = 1 (link) daydreaming might increase/decrease the second time = 1 (link) reduces effects of demand characteristics = 1 (advantage) as participants only experience the boring task once so are less likely to think about what the aim is = 1 (link)	**2**
8(b)	**Suggest <u>one</u> reason for using a boring task in this study.** 1 mark for reason to make people daydream = 1 to make all participants equally likely to daydream = 1	**1**
8(c)	**Suggest <u>one</u> practical or methodological problem with studying daydreams.** 1 mark for practical/methodological problem 1 mark for explanation (may or may not be linked) they may not happen = 1 (identification of problem – 'they' is referring to daydreams) so you would not collect any data = 1 (explanation) they are vague/easily forgotten = 1 (identification of problem – happens to be linked 'they' [the daydreams]) so may not be reported accurately by the participants = 1 (explanation) the content of daydreams has to be interpreted = 1 (identification of problem) so the researcher will need to interpret them / may be subjective = 1 (explanation)	**2**

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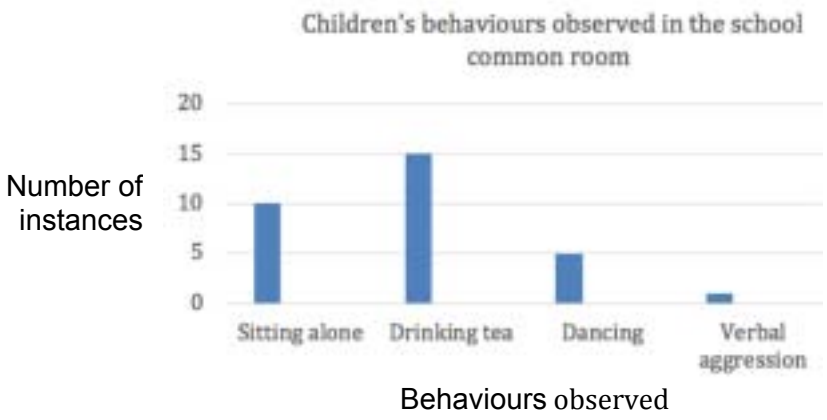
Question	Answer	Marks
8(d)	**Suggest <u>one</u> ethical problem with studying daydreams.** 1 mark for ethical problem 1 mark for explanation (may or may not be linked) they are personal = 1 (identification of problem – happens to be linked 'they' [the daydreams]) so asking about them could break privacy = 1 (explanation) when you have been daydreaming you are a bit fuzzy = 1 (identification of problem) so your decision to consent/withdraw may be invalid = 1 (explanation)	**2**

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>9</td><td>Jasper conducted an observational study of children's behaviours in their school common room. Jasper's data is shown in Table 1.

Table 1

<table>
<tr><th rowspan="2"></th><th colspan="4">Behaviours observed</th></tr>
<tr><th>Sitting alone</th><th>Drinking tea</th><th>Dancing</th><th>Verbal aggression</th></tr>
<tr><td>Number of instances</td><td>10</td><td>15</td><td>5</td><td>1</td></tr>
</table></td><td></td></tr>
<tr><td>9(a)</td><td>Draw a bar chart of Jasper's results.



1 mark for title
1 mark for x-axis label
1 mark for x-axis categories
1 mark for y-axis label
1 mark for y-axis units
1 mark for it being a bar chart [essential for 4 marks]
1 mark for correct plotting [essential for 4 marks]</td><td>4</td></tr>
<tr><td>9(b)</td><td>Jasper observed the children with the permission of the school principal and the children's parents.</td><td></td></tr>
<tr><td>9(b)(i)</td><td>Explain why it was necessary to obtain permission in this study.

1 mark for reason/guideline
1 mark for link (only needs to relate to parents OR school principal)

consent = 1 (guideline)
as (some of the students) will be under 16, parents' permission is essential = 1 (link)
because the children may not understand that they were in a study = 1 (link)

some children may be too young to understand = 1 (reason)
so a responsible adult such as the school principal needs to agree = 1 (link)</td><td>2</td></tr>
</table>

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Question	Answer	Marks
9(b)(ii)	**Explain whether there could have been an issue with privacy in this study.** 1 mark for reason 1 mark for link the students did not know they were being observed = 1 (link) so may have behaved in ways they would not have wanted to other people to have seen = 1 (reason) children would expect to be unobserved in their common room = 1 (link) so if they found out they were being observed they could be upset = 1 (reason)	**2**
9(c)	**Jasper was a non-participant observer.** **Explain what is meant by a non-participant observer, using this study as an example.** 1 mark for explanation of 'non-participant' 1 mark for link a non-participant observer doesn't join in with what they are observing = 1 (explanation) is not part of the social group who are observed = 1 (explanation) Jasper could be disguised as a technician = 1 (link)	**2**

Question	Answer	Marks
10	**Jason is a university lecturer and is interested in doodling behaviour. One day, Jason sees one of his students, Karen, doodling. Jason is especially interested because Karen has a visual impairment that means she cannot see. Jason decides to conduct a case study on her.**	

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Question	Answer	Marks
10(a)	**Describe how Jason could conduct a case study on Karen to find out about her doodling behaviour.** Three major omissions for a case study are: How: technique used to collect data asked (e.g. interview, questionnaire, observations) What: content e.g. questions (open etc.), qualitative data, multiple sessions (questions about doodling, observe doodling in different situation) How: use of data e.g. interpretation, triangulation etc. (how open questions will be interpreted, how doodles will be analysed) The minor omissions are: where: location of participants when completing the questionnaire / how it is distributed who: Karen Also: 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 (i.e. what and how). • Response may have a minor omission (i.e. who or where). • Use of psychological terminology is accurate and comprehensive. **Level 2 (5–7 marks)** • Response is in some detail. • Response has minor omission(s) (i.e. who and/or where). • 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**

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<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
• difficulty with lying / social desirability
Reliability
• researcher bias

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></td></tr>
</table>

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