Cambridge Assessment International Education

Cambridge International AS & A Level

PSYCHOLOGY **9990/22**

Paper 2 Research Methods **October/November 2020**

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 2020 series for most Cambridge IGCSE™, Cambridge International A and AS Level and Cambridge Pre-U 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.

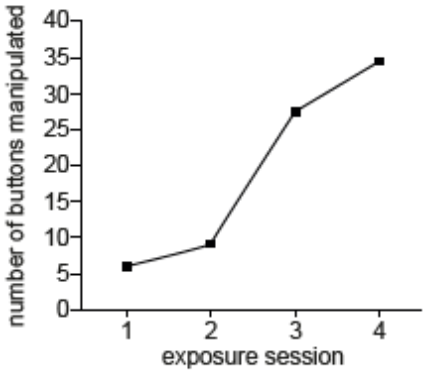
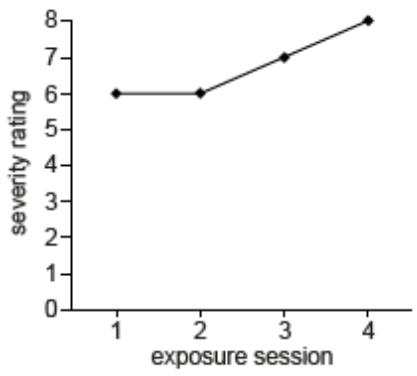
GENERIC MARKING PRINCIPLE 5:

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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Question	Answer	Marks
1	**In the study by Saavedra and Silverman (button phobia), the results were the effect of the therapy sessions on button manipulation and on severity rating of distress. These are shown in Fig. 1.1 and Fig. 1.2.**  Fig. 1.1  Fig. 1.2 **Explain <u>one</u> conclusion from the results on each graph. You <u>must</u> refer to the results in each conclusion.** **1** mark for 1 conclusion × **2** Linked to evidence from the graph × **2** The therapy worked / he was able to manipulate buttons better after therapy = 1 (conclusion), **because** in later exposure sessions the number of buttons he manipulated increased from 28 to 35 (graph) = 1 (graph) Therapy increases distress / the therapy didn't work as he became more stressed over time = 1 (conclusion), because the severity rating he gave the buttons rose from 6 to 8 (graph) = 1	**4**

Question	Answer	Marks
2	**From the study by Laney et al. (false memory):**	
2(a)	**State why a false memory about liking asparagus would be more ethical than a false memory created using filmed events like car crashes and thefts.** **1** mark for reason Car crashes could be distressing/upsetting/frightening so break the ethical guideline of not causing physical/mental harm = 1	**1**

Question	Answer	Marks
2(b)	**Explain <u>one</u> way in which the study by Laney et al. was <u>not</u> ethical.** **1** mark for reason, e.g. guideline broken **1** mark for detail Broke guideline of deception = 1 (guideline) As the participants were led to believe their memory was real / were told it was a study about food preferences and personality (when it was actually about false memory) Can credit answers other than deception which are justified	**2**

Question	Answer	Marks
3	**Libby is planning a case study of a boy with autism to investigate his social interactions.**	
3(a)	**Explain how Libby could use <u>two</u> different techniques to collect data in her case study.** Name/identification of a method of data collection × **2** Linked explanation × **2** Interview = 1 (name/ID) / Ask the boy face-to-face questions; (ID) (questions) such as 'What situations do you think make your symptoms worse?' = 1 (link) Observation = 1 (name/ID) Watch his behaviour at school / alone / at home etc., to look for factors that may relate to changes in his behaviour = 1 (link) Questionnaire = 1 (name/ID) Ask closed questions such as 'Do you smile back when someone smiles at you?' yes/no' = 1 (link) Tests/tasks = 1 (name/ID) use the **Eyes test** to see if he can recognise emotions from faces = 1 (link)	**4**

Question	Answer	Marks
3(b)	**For <u>one</u> of the techniques you explained in 3(a):** **Suggest <u>one</u> problem with using this technique in this study. Do <u>not</u> refer to generalisability in your answer.** **1** mark for problem **1** mark for link *Interview*: researcher gets to know the individual = 1 (problem) So Libby may be biased in her interpretation of his social interactions, e.g. he = 1 (link) *Observation*: Unless Libby is covert and non-participant, she will affect the participant's behaviour by her presence = 1 (problem) So Libby would change the way the boy behaved by being there = 1 (link) *Questionnaire*: closed questions limit the answers that can be given = 1 (problem) So the boy may not have been able to find that option that described him = 1 (link)	**2**

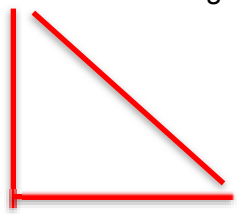
Question	Answer	Marks
4	**In the study by Canli et al. (brain scans and emotions), the dependent variable of emotional arousal was measured by the participants pressing buttons 0, 1, 2 or 3.** **Suggest why it was necessary for the participants to press buttons rather than speaking or writing.** **1** mark for reason Because they were in a scanner so couldn't move much / couldn't move to speak / write = 1	**1**

Question	Answer	Marks
5	**In a study about phobias, researchers have identified two problems.**	
5(a)	**One problem is that they cannot be sure that they are studying phobias rather than just dislikes. For example, people may refuse to eat a food they claimed to have a phobia of simply because they don't like it** **Explain whether this is a problem of validity or reliability.** **1** mark for name of validity **<u>and</u>** an **<u>explanation</u>** (does not have to be linked) Validity (identification) as they will not be measuring the variable they expected to measure (generic) = 1 Validity (identification) as they will not be measuring phobias, but dislikes instead (linked) = 1 Reliability (incorrect) as they will not be measuring phobias, but dislikes instead (linked) = 0	**1**

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Question	Answer	Marks
5(b)	**Another problem is that they cannot be sure that they are measuring phobias consistently. For example, the researchers may interpret the participants' written comments differently.** **Explain whether this is a problem of validity or reliability.** **1** mark for name of reliability **and** an **explanation** (does not have to be linked) Reliability (identification) because it is about the researchers' consistency in recording data (explanation) (generic) = 1 Reliability (identification) because they may make different records from the same data (explanation) (linked) = 1 Validity (incorrect) because it is about the researchers' consistency in recording data (explanation) = 0	**1**

Question	Answer	Marks
6	**Describe different types of hypotheses in research, using any examples.** **1** mark for basic definition of each type of hypothesis (up to **max 4**) **Max 5** further marks for detail/examples. Hypotheses are testable statement; They are based on a research question / aim; The alternative hypothesis is the one being tested in a study; The alternative hypothesis predicts a difference in an experiment; The alternative hypothesis predicts a relationship in a correlation; A two-tailed/non- directional hypothesis predicts just a difference / relationship; A one-tailed/directional hypothesis in an experiment predicts which level of the IV will be 'better'; A one-tailed/directional hypothesis in a correlation predicts whether the correlation will be positive or negative; The null hypothesis is the one that is used in statistical testing; The null hypothesis predicts that there will be no difference/correlation **OR** that any difference/correlation is due to chance; e.g. Dement and Kleitman predicted a directional hypothesis that more dreams would occur in REM sleep than nREM sleep; e.g. a suitable null hypothesis would have been 'There is no difference in the amount of dream recall from REM and nREM sleep'; e.g. Baron-Cohen predicted a directional hypothesis of a negative correlation between AQ and eyes test; e.g. a suitable null hypothesis would have been 'Any correlation between AQ and eyes test result is due to chance'.	**6**

Question	Answer	Marks
7	**Claus is investigating whether there is a correlation between happiness and exercise**	
7(a)(i)	**Outline what the results would show if Claus found a negative correlation.** **1** mark for explanation That as exercise increased, happiness would decrease (ORA) = 1	**1**
7(a)(ii)	**Sketch a graph, using the axes below, to show what the pattern of results would look like if Claus found a negative correlation. You must label the axes.** Award **1** mark for each of: • scatter graph; • negative slope (essential for **3** marks); • axis heading: 'happiness (score)' OWTTE; • axis heading: '(amount of) exercise' OWTTE. 	**3**
7(b)	**Explain why Claus cannot conclude that exercise causes unhappiness.** **1** mark for reason **1** mark for link Because he **can't draw a causal conclusion from a correlation** = 1 reason Because being happy could make people more willing to exercise = 1 link OR Both variables might change in accordance with another variable (such as geographical location) = 1 link	**2**
7(c)	**Explain why it was useful for Claus to conduct a correlational study before using another method to investigate factors affecting happiness.** **1** mark for reason **1** mark for link Because a correlation can find patterns that can then be explored experimentally = 1 reason Happiness or exercise could be used as an independent variable to see if it causes a change in the other variable = 1 link	**2**

Question	Answer	Marks
8	**Duncan is conducting an experiment to test whether watching videos of natural scenes or city scenes is better at helping stressed people to relax. Half of the participants watch the natural scenes first and the city scenes one week later. The other half of the participants watch the city scenes first and the natural scenes one week later.**	
8(a)	**Identify Duncan's experimental design. Include a reason for your answer.** **1** mark for identification and explanation of the design: (generic) **1** mark for link Repeated measures (DEFINITIVE) design **because** the same participants are used in both levels of the IV (although people can do different orders) = 1 explanation All participants did both the natural and city scenes task = 1 link	**2**
8(b)	**Explain why it is an advantage that the participants watch the scenes in different orders.** **1** mark for advantage **1** mark for detail – linked Counteracts order effects / avoids practice/ avoids fatigue = 1 (advantage) e.g. if they found it boring the second time they might be less relaxed anyway = 1 (link) Reduces demand characteristics = 1 (advantage) e.g. if they worked out the aim about type of scene from the first ones, they would respond abnormally the second time = 1 (link)	**2**
8(c)	**Duncan obtains his sample from the student population at his university, who all live in the local city.** **Suggest <u>one</u> disadvantage of taking the sample from this location in this study.** **1** mark for disadvantage **1** mark for link All students = 1 (disadvantage) All city dwellers = 1 (disadvantage) All the same university = 1 (disadvantage) They might tend to find urban scenes even more irritating and be abnormally aroused = 1 (link) (they all live in the city) so they are used to city living / urban scenes = (link)	**2**

Question	Answer	Marks
8(d)	**In order to ensure that his participants are stressed before watching the videos, Duncan could scare them but this would be unethical. He must stress them in an ethical way. He decides to do this by raising their arousal level.** **Describe <u>one</u> ethical way that Duncan could stress his participants by raising their arousal level.** **1** mark suggestion of ***ethical*** activity to arouse **1** mark why it is ethically suitable Let them watch an exciting film (of their choice); This is arousing because of the excitement, which is not harmful and films are what **people** would **watch anyway;** Let them choose an exciting game to play; This is arousing because of the excitement, which is not harmful as it is a game they have **chosen** to play.	**2**

Question	Answer	Marks
9	**Lydia is planning to interview students about how they learn a new language.**	
9(a)	**Suggest <u>one</u> open question that Lydia could ask during her interviews.** **1** mark for an open question 'Explain a difficulty you have had learn your most recent language.' = 1 'Describe what you do to learn a new language.' = 1 'What do you do to learn a new language?' = 0	**1**
9(b)	**Suggest <u>one</u> disadvantage of using open questions in this study.** **1** mark for disadvantage **1** mark link Open questions are hard to analyse because they are non-numerical = 1 (disadvantage) To it would be hard to compare learners of different languages = (link)	**2**

Question	Answer	Marks
9(c)	**Lydia's first language is English. Her participants speak a variety of different first languages, although all can understand English.** **Explain why the variety of first languages spoken by the participants could still be a problem in Lydia's study.** **1** mark for problem **1** mark for detail Because the interviews would have to be in English for these people = 1 (problem) Whereas other participants could have been in their first language, so easier to understand = 1 (detail) Because the features of learning a language might differ depending on the language itself = 1 (problem) Lydia might not understand exactly what the participants mean = 1 (detail)	**2**
9(d)	**Suggest what type of interview Lydia should conduct in this study. Include a reason for your answer.** **1** mark for naming / identifying an appropriate type of interview **1** mark for justification **1** mark for link A structured interview = 1 (name) So that each participant is asked the same questions, which makes the results easy to compare/analyse = 1 (reason) e.g. so all the participants are asked questions about learning verb patterns = 1 (link) An unstructured interview = 1 (name) So that each participant can be asked individual/follow-on questions, which makes the results more valid = 1 (reason) e.g. so participants can be asked individual questions about what they find hard when remembering nouns = 1 (link) A semi-structured interview = 1 (name) So a participant can be asked both set questions to compare and follow-on questions that are specific to them = 1 (reason) e.g. so it is possible to ask standardised questions and ones about the individuals' language learning habits = 1 (link)	**3**

Question	Answer	Marks
10	**Anisha and Megane are supervisors who walk around the school during lunchtime to watch the children in the building, playground and lunch hall. They have been asked by Sue, who is head of the psychology department, to be observers in a study on helpful behaviour in the school.**	
10(a)	**Describe how Sue could conduct a participant observation of helping behaviour in school, using Anisha and Megane to assist her.** Three **majors** for an **observational study** are: **What**: behaviours that will be recorded, e.g. one named (detail, e.g. definition/operationalisation of behavioural categories) **How**: any **two** of: • naturalistic/controlled; • structured/unstructured; • covert/overt; • participant/non-participant; (detail is how they are achieved **OR** more than two) The **minors** are: **where** – location of participants **when** data is collected (*must be school)* **who** – participants *(must be students and or staff)* • sampling technique; • sample size; • description of how tallying will be done; • 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 (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**

<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 <u>(a)</u> 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. If the problem was an obvious omission in (a), fewer marks will have been awarded in (a), so they can be awarded here.

Problems may, for example, be matters of:

Validity
• operationalisation;
• difficulty with lying/social desirability;
• difficulty with response biases;

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>