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Cambridge International AS & A Level

Cambridge Assessment International Education
Cambridge International Advanced Subsidiary and Advanced Level

PSYCHOLOGY **9990/22**

Paper 2 Research Methods **October/November 2018**

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 2018 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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Question	Answer	Marks
1(a)	**Define what is meant by the 'mean'.** 1 mark for: • A measure of central tendency/average that represents all the data points/scores. OWTTE	**1**
1(b)	**Describe how a mean is calculated.** 2 marks for description of calculation. • All the scores in a set are added together; and divided by the number of scores = 2 marks (including any zero scores)	**2**

Question	Answer	Marks
2	**In the study by Andrade, two groups were compared, a doodling condition and a control condition. Each participant produced a memory score.**	
2(a)	**Explain the purpose of a 'control condition', using an example from this study.** 1 mark for explanation of the purpose of a control condition 1 mark for identification of the control condition in Andrade • A control condition is the absence of the IV, in this case the absence of (a cue for) doodling to compare to the experimental condition to look for a difference / to see if the IV is the cause of a difference = 1 mark (explanation) • The control condition was the 'no doodling' group (who were not given a special sheet or asked to 'shade circles and squares') = 1 mark (example) • Andrade used the control group as a baseline to compare the doodling group's monitoring/recall scores = 1 mark (example)	**2**
2(b)	**Name a suitable graph to display the mean memory scores for the doodling condition and the control condition.** 1 mark for bar chart / bar graph	**1**

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Question	Answer	Marks
3	**The study of Saavedra and Silverman (button phobia) was a case study.**	
3(a)	**Outline what is meant by a 'case study'.** Both marks are for outlining the term, examples only gain marks if they are part of the definition. 1st mark for either detailed or one instance/person 2nd mark for any of: detailed one instance/person of a rare / unusual condition *may be* longitudinal (can use) several different data collection methods (can use) triangulation • an in-depth study of a single participant = 2 marks • a very descriptive study of one unit = 2 marks	**2**
3(b)	**Suggest <u>one</u> disadvantage of using a case study.** Both marks are for one disadvantage. Points may be linked but do not have to be. • one person is studied and they may be rare/unique/unusual = 1 mark • so researchers are less likely to be able to generalise to the wider population / less representative = 2nd mark • reliability may be a problem because the researcher may be subjective and vary their interpretation = 2 marks • the researcher may be get to know the participant well (making their interpretation / data collection) subjective = 1st mark • which would make the data invalid = 2nd mark	**2**

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Question	Answer	Marks
4	**In the study by Pepperberg (parrot learning), the data collected was the parrot's speech. Alternatively, the parrot's actions in response to instructions, such as 'peck yellow square' could have been observed.**	
4(a)	**Suggest why observing the parrot's actions might have been a better way to collect data than using the parrot's speech.** Both marks are for the suggestion. 1 mark for identifying an advantage. 2nd mark for detail. • An action may be much more obvious / speech could be misheard/ misunderstood (=1 mark) • So the observers would make fewer errors (=1 mark for detail) • this would make observing actions a more valid/reliable measure (both are correct) (=1 mark for detail)	**2**
4(b)	**Suggest why observing the parrot's actions might <u>not</u> have been a better way to collect data than using the parrot's speech.** Both marks are for the suggestion. 1 mark for identifying a disadvantage. 2nd mark for detail. • An action requires an additional instruction / the instruction 'peck' (= 1 mark) • the parrot may not understand this instruction (= 1 mark for detail) • this would make the parrot appear not to understand the concept (= 1 mark for detail) • which would be incorrect / would lower validity (= 1 mark for detail)	**2**

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Question	Answer	Marks
5	**The procedure in the study by Canli et al. (brain scans and emotions) was standardised as each participant was treated in the same way.** **Explain <u>one</u> advantage of standardisation, using this study as an example.** Both marks are for the advantage. 1 mark for identifying an advantage. 2nd mark for linked detail. • standardisation ensures every participant is treated the same way (= 1 mark for identification of advantage) [= rep of Q] • easy to replicate • increase reliability in Canli et al., the duration of presentation / duration of the interval / fixation cross / right hand to press button was always the same (= 1 mark for linked detail)	**2**

Question	Answer	Marks
6	**Describe what researchers can and cannot learn from correlational studies, using any examples.** Award 1 mark per idea. Up to max 4 marks for all one side, e.g. 'can tell us'. Award max 3 marks for examples. From correlations we *can* learn about: • relationships/links between variables (accept can be negative or positive if no definitions); (1 for definition) • whether the two variables are positively correlated i.e. both increase together • for example Piliavin et al. found that as group size increased the likelihood of helping also increased • or negatively correlated, i.e. as one increases the other decreases • for example, Piliavin et al. expected to find that as group size increased the likelihood of helping would decrease • so they can guide ideas for (future) experimental work • can study variables which cannot practically be manipulated, such as activity levels in dreams • can study variables which cannot ethically be manipulated, such as phobia strength From correlations we *cannot* learn about: • causal relationships between the variables being tested • i.e. whether one causes the other to change • or whether they are both dependent on a third factor • e.g. Dement and Kleitman could not be certain whether longer REM caused longer dreams or longer dreams caused longer REM periods.	**6**

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Question	Answer	Marks
7	**Dr Kwan plans to investigate whether any species other than chimpanzees will offer help. During testing, each animal will be with another animal but afterwards they will be kept in separate cages.**	
7(a)	**Explain <u>one</u> ethical issue Dr Kwan should consider in choosing which species to test. You may use an example in your answer.** 1 mark for linking issue to animal species e.g. social / solitary 2nd mark for detail about potential ethical problems (this may include a relevant example) • He would have to choose a species that would cope with both social company; and isolation = 2 marks • A solitary animal would be unsuitable; as it would be distressed being in the experiment when it had to be with another one = 2 marks • Dogs are unsuitable because they are social; and could be distressed by the social isolation = 2 mark	**2**
7(b)	**Dr Kwan has considered testing whether the animals can help each other to avoid pain.** **Explain why this might be an unethical procedure.** 1 mark for a comment based on the experiment related to pain/distress. • The animal that needed help would have to be in pain, which is unethical = 1 mark • The animal that was supposed to help might be distressed if it could not stop the experimental animal's pain, which would be unethical = 1 mark	**1**
7(c)	**Dr Kwan should use as few animals as possible, for ethical reasons.** **State why it would also be important that Dr Kwan uses a big enough sample.** 1 mark for idea that small samples may not be representative • If the sample is too small the findings may not be representative of the species / the results may not generalise to the rest of the species = 1 mark	**1**

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Question	Answer	Marks
7(d)	**Dr Kwan has developed behavioural categories for observing the animals. However, he thinks that another researcher should conduct the observations rather than him.** **Explain why this is a good idea.** 1 mark for correct use of subjective / objective 1 mark for explaining idea of avoiding subjectivity / being objective 1 mark for detail, e.g. for the consequences if Dr Kwan did /did not record the data himself Max 2 marks if explanation not linked to study • Dr Kwan believes that the animals will help, so is biased • so he may not observe/record data in an objective way / he may be subjective in his data collection • this would tend to make his results fit his expectations • making the results invalid	**3**

Question	Answer	Marks
8	**Kieran is planning a self-report study about dream content, to find out whether people feel happier during the day if they have had pleasant dreams the night before. He is considering using either a structured questionnaire or an unstructured interview.**	
8(a)	**Suggest <u>two</u> closed questions that Kieran could ask in a structured questionnaire.** 1 mark per relevant closed question with answer options X2 • Did you have a nice dream last night? yes/no (= 1 mark) • Rate how happy you felt today on a scale of 0-5 (0 = not happy, 5 = happy) (= 1 mark)	**2**
8(b)	**Explain <u>one</u> advantage of using closed questions.** Both marks are for the advantage. Award 1 mark for identifying an advantage. Award 2nd mark for detail. • They give objective data • so are reliable to interpret • They give numerical data / data that can be converted to numbers • so are easy to analyse	**2**

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Question	Answer	Marks
8(c)	**Outline what is meant by an 'unstructured interview'.** 1 mark for basic/partial explanation of term (e.g. of 'interview'). 2nd mark for detail. • an interview is a real time / direct / face-to-face self report method (= 1 mark) • unstructured ones have no fixed questions (= 1 mark / 1 for detail) • so give the interviewer the freedom to adapt to what the participant says (= 1 mark / 1 for detail) • this means they can pursue interesting lines of questioning (= 1 mark for detail)	**2**
8(d)	**Suggest <u>one</u> open question that Kieran could ask during an unstructured interview.** 1 mark for a relevant open question • Describe how happy you have felt today. • If you had a dream last night, describe how nice it was.	**1**
8(e)	**Explain <u>one</u> advantage of using open questions.** Both marks are for the advantage. 1 mark for identifying an advantage. 2nd mark for detail. • They give participants freedom to express themselves • so are likely to be valid / more valid than closed questions (in this respect) • They give detailed / in-depth / qualitative data • so can reveal aspects in the results that could be overlooked if closed questions were used	**2**

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Question	Answer	Marks
9	**Marla is working in a centre for adults with autism. She is observing social behaviour and communication such as whether the residents seem to understand facial expressions.**	
9(a)	**Identify and operationalise <u>one</u> behaviour that Marla could record to measure whether the residents understand facial expressions.** 1 mark for an example of a communication behaviour 1 mark for an operational definition • talking = 1 mark (behaviour) • saying any words that are directed to other people (as initiation or response) = 1 mark (definition) • eye contact = 1 mark (behaviour) • looking directly at other people (without instantly averting gaze) = 1 mark (definition)	**2**
9(b)	**Explain what Marla should do to be a participant observer.** 1 mark for participant observer strategy 1 mark for explanation/example • Become part of the group; (1 mark for strategy) • e.g. act as an activity leader / staff member / cleaner, etc.; (1 mark for example) • So that she is accepted by the adults with autism; (1 mark for explanation)	**2**
9(c)	**Explain what Marla should do to be a non-participant observer.** 1 mark for non-participant observer strategy 1 mark for explanation/example • Stay separate from the activities of the group / not be socially involved; (1 mark for strategy) • e.g. be a member of catering staff; (1 mark for example) • So that the adults with autism do not interact with her; (1 mark for explanation)	**2**

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Question	Answer	Marks
9(d)	**Explain whether Marla should choose a participant observation or a non-participant observation for her study.** 1 mark for justification = (may be generic) 2nd mark for detail or different point (1 mark must be linked to get 2) *justification for participant observation:* • it allows for a relationship to build up between the observer and the participants (generic) • so Marla would be more likely to notice subtle things about the adults' communication (linked) • the observer is amongst the participants so can see/hear easily (generic) • e.g. Marla could specifically talk to individuals (linked) *justification for non-participant observation:* • reduces demand characteristics (generic) • otherwise the adults with autism might realise that Marla is watching them and change their behaviour (linked)	**2**

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Question	Answer	Marks
10	**Dr Fox is planning a field experiment to investigate obedience in school children. Her aim is to test whether they are more obedient to teachers who are dressed in informal or formal clothes.**	
10(a)	**Describe how Dr Fox could conduct a field experiment to test her aim.** Three major omissions for a field experiment are: What: – will be recorded, i.e. DV How: – IV Where: – school The minor omissions are: how – controls who – participants (must be school children) Indicative content for a field experiment: • How – identification of the independent variable • operationalisation of the dependent variable • What – identification of the dependent variable • operationalisation of the dependent variable • including examples of ways to measure the variable such as questions/tests used • How - controls • experimental design (any are appropriate here) • sampling technique • sample size • description of how data will analysed, e.g. use of measures of central tendency and spread, bar charts • ethical issues **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**

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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> 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.

Answer will depend on problem identified.

Problems may, for example, be matters of:

Validity
• operationalisation (of obedience)
• difficulty with demand characteristics/social desirability if overt
• difficulty with remaining hidden if covert
• dressing teachers differently may affect the teacher’s own behaviour

Reliability
• intra-rater consistency (scoring obedience)

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>