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PSYCHOLOGY **9990/23**

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.

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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	**Explain what is meant by the term 'population'.** 1 mark for 'all the individuals of one type'	**1**

Question	Answer	Marks
2	**There were many controlled variables in the study by Bandura et al. (aggression).**	
2(a)(i)	**Explain what is meant by 'a controlled variable'.** 1 mark for defining the term • a controlled variable is a factor that is kept constant across different levels of the IV	**1**
2(a)(ii)	**Identify an example of a controlled variable from the Bandura et al. study.** 1 mark for example of a controlled variable from Bandura et al. • the duration of aggressive / non-aggressive behaviour of the adult model • the frustration episode • the toys available Any other appropriate answer to be credited	**1**
2(a)(iii)	**Suggest <u>one</u> advantage of using the controlled variable you have identified in part <u>(a)(ii)</u>.** Both marks are for one advantage. At least one point must be linked to the study. *duration of aggressive / non-aggressive behaviour of the adult model* • all participants had the same exposure to modelled behaviour so were equally likely to be influenced (= 1 mark) *frustration episode* • all participants were likely to express aggression by the time they were observed (= 1 mark) • in case exposure to aggression reduced the likelihood of expression (so it would be hard to measure imitation) (= 2nd mark) *toys available* • (aggressive and non-aggressive toys for all children) so that they had the same immediate exposure to cues; (= 1 mark) • so if the toys themselves rather than imitation were the cause they would be equally likely to aggress; (= 2nd mark)	**2**

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Question	Answer	Marks
2(b)	**State <u>one</u> way in which Bandura et al. helped observers to be reliable.** Mark is for procedural information affecting reliability. • simple 5-point scale for initial rating of children (= 1 mark) • interval sampling (5 seconds) • recording of behaviours in (clearly defined) response categories	**1**

Question	Answer	Marks
3	**In the study by Piliavin et al. (subway Samaritans), medians were calculated for 'time taken to help' in the Cane and Drunk conditions.**	
3(a)	**State whether the median is a 'measure of central tendency' or a 'measure of spread'. Include a reason for your answer.** 1 mark for: (measure of central tendency) *because* it: – finds the middle value – is an average – looks for a typical value not an extreme	**1**
3(b)	**Describe how a median is calculated, using the Piliavin et al. study as an example.** 1 mark for brief description of calculation 1 mark for identifying data used. All the scores in a set are put in order (smallest to largest) and the middle one is found (if there are two middle ones, these are added together and divided by 2) = 1 mark So in Piliavin et al.'s case they put all the times to respond / offer help in order for each group (e.g. for the 'white cane 1–3 people' group) (and found the middle one) = 2nd mark	**2**
3(c)	**Name the type of graph that would be best used to show a comparison between the medians for 'time taken to help' in the Cane and Drunk conditions.** 1 mark for bar chart	**1**

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Question	Answer	Marks
4	**From the study by Saavedra and Silverman (button phobia):**	
4(a)	**Identify <u>two</u> ethical guidelines followed in this study.** 1 mark for identification of guideline from study × 2 • confidentiality • deception • consent • debrief • right to withdraw • protection from harm	**2**
4(b)	**For <u>one</u> of the ethical guidelines you identified in part (<u>a</u>):** **Suggest <u>one</u> disadvantage of following this guideline in this study.** Both marks are for one disadvantage. 1 mark for identification of disadvantage 2nd mark for link to study 1 mark *confidentiality* • no one else can follow up the same child (because they do not know who he is = 1 mark • so it would be hard to validate the original research / to see if the benefits last = 2nd mark *deception / consent* • if the boy had not known the reason for his meeting he might have responded differently = 1 mark • so the results may not generalise to case where the patient cannot be told what they are seeing a therapist for because they would be too scared = 2nd mark *right to withdraw* • although he did not withdraw, he or his mum might have done so the study would have stopped early = 1 mark • this would have been a problem because they may not have reached far enough into the treatment programme = 2nd mark	**2**

Question	Answer	Marks
5	**Explain why low reliability would be a problem in experiments.** 1 mark for identification of the problem with low reliability (**inconsistency**). 1 mark for detail explaining a reason why this is problematic. Examples can be useful as detail but are not required. • consistency is poor • so you cannot tell is differences are due to manipulations or are errors • this would also lower validity • e.g. (low consistency) between different researchers • e.g. (low consistency) for the same researcher over time • e.g. when the same behaviour is seen a different record might be made (if reliability is low)	**2**

Question	Answer	Marks
6	**Describe ways in which an interview can differ from a questionnaire, using any examples.** 1 mark for each definition, for each type of self report (maximum of 2 marks in total). 1 mark for each example that is linked to one type of self report (maximum of 2 marks in total). Examples can include examples from studies using such questionnaire / interviews, or of ways they *could* be used. Max 4 if only questionnaires or interviews. • interviews are (questions asked) face-to-face; (1 for definition) • questionnaires have (questions asked) in written form; (1 for definition) • e.g. Piliavin et al. asked people about their response to the victims when they were on the train • Baron-Cohen gave participants the AQ (Autism Quotient, a questionnaire) to complete themselves • (unstructured) interviews tend to use more open questions / ask for descriptions / detail / produce qualitative data than questionnaires • e.g. Schachter and Singer interviewed participants and asked 'how are you feeling?' • e.g. Dement and Kleitman asked participants to describe their dream • whereas the answers on the AQ are fixed-choice • unstructured interviews tend to follow the participant's lead and add new questions whereas questionnaires are much more structured • e.g. Dement and Kleitman sometimes went in to the participants to ask them more questions whereas in the questionnaires used by Laney et al. the responses were fixed choice, such as circling a number to say how likely they would be to order a food item.	**6**

Question	Answer	Marks
7	**Mikko is conducting an experiment to find out whether people are more easily persuaded by advertisements that are in colour or in black and white. He has put advertisements up in one town library that are all in colour and the same advertisements in black and white in a library in another town.**	
7(a)	**Explain the importance of <u>one</u> control in Mikko's experiment.** 1 mark for identifying the control 2 marks for explaining why it is important (one may be generic, one must be linked) • same location (= 1 mark for the control) • always a library (= 1 mark for the control) • this might matter because in different locations the type of people might be different (1st explanation mark, generic) • for example in an art shop people might prefer more coloured pictures (2nd explanation mark, linked) • same adverts (= 1 mark for the control) • adverts only differ in terms of colour (not content) (= 1 mark for the control) • this might matter because in different images might affect people differently (1st explanation mark, generic) • for example people might prefer adverts with animals to buildings (2nd explanation mark, linked)	**3**
7(b)	**Suggest how Mikko could operationalise the <u>dependent</u> variable in his experiment.** 1 mark for identifying way to operationalise. 1 mark for elaboration / justification e.g. how it would be quantified. • effectiveness of adverts could be operationalised as how much they like them; • e.g. by rating the advert on a scale of 0–10; • effectiveness of adverts could be operationalised by whether they choose the objects advertised; • e.g. by giving them a choice of free products and counting how many they choose;	**2**

Question	Answer	Marks
7(c)	**Explain whether Mikko's study is a field experiment or a natural experiment.** 1 mark for defining / describing a field experiment or a natural experiment 1 mark for identifying why Mikko's study *is* a field experiment or is *not* a natural experiment • a field experiment has a manipulated IV (= 1 mark definition) • a field experiment tests participants in the normal environment (for the behaviour being studied) (= 1 mark definition) • it is a field experiment because people would expect to see adverts in a library (= 2nd mark linked) • in a natural experiment the IV is *not* manipulated by the researcher / exists in the environment (= 1 mark definition) • it is not a natural experiment because the type of advert is being changed by Mikko (= 2nd mark linked)	**2**

Question	Answer	Marks
8	**Dr Gopal is planning a study about learning and wants it to follow ethical guidelines for the use of animals. He is testing rats in a maze.**	
8(a)	**Describe how Dr Gopal should follow the ethical guideline of 'housing' in his study.** 2 marks EITHER for a point with detail / an example OR for two simple points. • social company or not • space • food • water • warmth • exercise • security (somewhere to hide) • balance cleanliness and need for own smell Give them enough food and water = 2 marks He should not overcrowd them = 1 mark As they might fight and get distressed / hurt = 2nd mark He should house them in appropriate conditions in terms of isolation or company; as rats are social animals, this would be in a social group = 2 marks	**2**

Question	Answer	Marks
8(b)	**Dr Gopal is deciding how to train the rats to learn. He could reward them when they make a correct turn in the maze or he could punish them when they make an incorrect turn.** **Explain why <u>one</u> of these training methods is the most ethical choice for Dr Gopal to make.** 1 mark for reason why choice is more ethical 2nd mark for explanation • He should use food because it is nice (= 1 mark identification) • because noise is distressing / painful (and this is unethical) (= 2nd mark explanation linked to guideline = do not distress) • He should not use the noise (= 1 mark identification) • Because food is pleasant but noise is not (= 2nd mark explanation linked to guideline = no aversive stimuli) Using food is less distressing / harmful that the noise = 1 mark It is more ethical because this procedure improves the animal's experience rather than worsening it = 2nd mark He should not use the noise because animals find it frightening (= 1 mark); whereas food is pleasant (= 2nd mark explanation)	**2**
8(c)	**Dr Gopal plans to count the number of correct or incorrect turns each rat makes.** **Explain <u>two</u> advantages of collecting data in this way.** 1 mark for identifying an advantage 2nd mark for detail (may be linked to study but does not have to be) × 2 • it is numerical / quantitative so is objective • so does not need to be interpreted (detail: explanation) • it is numerical / quantitative so is easy to analyse • e.g. he could calculate means (detail: example) • it is easy / accurate to record (so is valid) • you would be unlikely to make a mistake about whether the rat turned or not (link to study)	**4**

Question	Answer	Marks
9	**Lotty and Nazeem are aiming to observe emotional responses to different films at the cinema. They have different ideas for recording people's emotions. Lotty wants to do a structured observation, with fixed behaviours to record. However, Nazeem wants to do an unstructured observation, and record whatever behaviours are shown.**	
9(a)	**Suggest <u>one</u> way the aim of Lotty and Nazeem's observation is ethical.** 1 mark for reason linked to study • people are often seen / heard crying or laughing in the cinema (privacy) • The participants know other people can see them so it is not intrusive to observe them (privacy) • It would not be necessary to know anything personal about the participants so their identity would be protected (confidentiality) • People have chosen to see the films, so if it is sad, it's not because of Lotty and Nazeem's study (protection)	**1**
9(b)	**Suggest how behaviours could be recorded using Lotty's idea to do a structured observation.** All for marks for suggestions relating to structured observation. Max 2 marks for examples (e.g. for behaviours, categories, the time intervals for time sampling) • a list of behaviours • e.g. crying / covering your eyes / laughing • these could be put into related categories • e.g. positive and negative emotions • using (a technique such as) time sampling or event sampling / tallying • e.g. ticking off each time a behaviour like screaming is observed	**4**
9(c)	**Explain <u>one</u> advantage of Lotty's idea to do a structured observation.** 1 mark for advantage (generic or linked) 1 mark for linked detail • objective (generic) • e.g. because less likely to choose to record particular emotional behaviours • e.g. because only those emotions on the list could be recorded • higher inter-rater reliability • so Nazeem and Lotty are more likely to be consistent • so they will tend to record the same behaviours when they see the same responses in people	**2**

Question	Answer	Marks
9(d)	**Explain <u>one</u> advantage of Nazeem's idea to do an unstructured observation.** 1 mark for advantage (generic or linked) 1 mark for linked detail • unlikely to miss important behaviours (generic) • e.g. because recording is not limited to the emotional behaviours that are on the decided list • e.g. because Nazeem could record anything he sees whereas Lotty could not • higher validity • e.g. because Nazeem can consider any responses that might be related to emotions	**2**

Question	Answer	Marks
10	**Cael and Elsie are working at a sleep laboratory and have read about external stimuli becoming part of people's dreams. Their aim is to test whether noises can more easily become part of a dream than smells.**	
10(a)	**Describe how Cael and Elsie could conduct a laboratory experiment to test their aim.** Three major omissions for a laboratory experiment are: What: – will be recorded, i.e. DV How: – IV – controls The minor omissions are: • where – location of participants when data is collected (e.g. sleep lab) • who – participants (sleepers) Indicative content for a laboratory 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 Other appropriate responses should also be credited.	**10**
10(a)	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.	

<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 <u>(a)</u> 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
• difficulty with demand characteristics
• difficulty with interpreting effect of stimuli on dreams

Reliability
• inter-rater consistency (re interpreting effect of stimuli on dreams)
• 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>