



Cambridge International AS & A Level

PSYCHOLOGY

9990/22

Paper 2 Research methods

May/June 2026

MARK SCHEME

Maximum Mark: 60

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the syllabus. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document consists of **23** printed pages.

General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: - the specific content defined in the mark scheme - the specific skills defined in the mark scheme or in the level descriptions - the standard of response required as exemplified by the standardisation scripts.
2	Examiners must award whole marks (not half marks, or other fractions).
3	Examiners must award marks positively . This means that: - marks are not deducted for errors or omissions - marks are awarded for correct/valid answers as defined in the mark scheme and also for other valid answers which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate - the quality of spelling, punctuation and grammar are judged only when the mark scheme indicates that these features are specifically assessed in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must consistently apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the full range of marks defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and must not award marks with grade thresholds or grade descriptions in mind.

**Social Sciences-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 Calculation questions:

- The mark scheme will show the steps in the most likely correct method(s), the mark for each step, the correct answer(s) and the mark for each answer
- If working/explanation is considered essential for full credit, this will be indicated in the question paper and in the mark scheme. In all other instances, the correct answer to a calculation should be given full credit, even if no supporting working is shown.
- Where the candidate uses a valid method which is not covered by the mark scheme, award equivalent marks for reaching equivalent stages.
- Where an answer makes use of a candidate's own incorrect figure from previous working, the 'own figure rule' applies: full marks will be given if a correct and complete method is used. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.

4 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.

Annotations guidance for centres

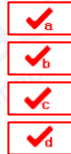
Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	Correct point
	Incorrect point
BOD	Benefit of doubt
REP	Repetition (of stem or within response)
	Unclear point
GM	Generic mark
L1 L2 L3 L4 L5	Used to show Level 1, 2, 3, 4, or 5 in the 10-mark planning Q
NAQ	Not answering question

Annotation	Meaning
	Acknowledge blank pages
	Something is missing
	Used for each point of description of a required feature in the 10-mark planning Q

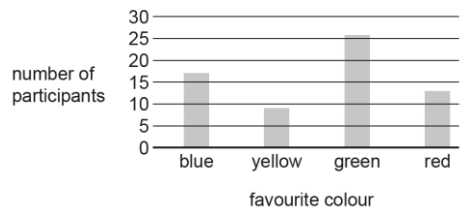
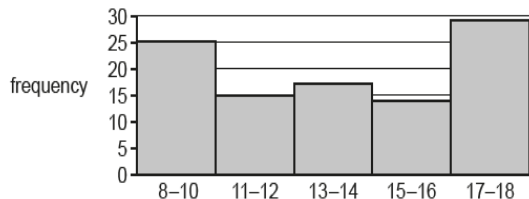
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Question	Answer	Marks	Guidance
1	Peter and Cicely are both testing attention but are conducting different studies.		
1(a)	Suggest <u>two</u> ways to measure attention. Way = 1 × 2 - Count number of words remembered from an (unexpected) memory test; [Andrade] - Use a noise distraction and time how long does the person lose focus for? - Rate how well a participant can keep their eyes on a (moving) object; - See how long a person can focus on a piece of work without distraction. - Participants listen to a lecture/audio recording and then answer questions on it (to get a score)	2	Must be measurable Measuring daydreaming is fine Score on a Stroop test is fine as it measures attentional control. 'score on a memory test' is fine to be credited.
1(b)	Peter and Cicely used different sampling techniques. Peter recruited his sample with an advertisement on social media. Cicely recruited her sample from the people who walked past her office door.		
1(b)(i)	Define 'sampling technique'. Define = 1 The way that participants are <u>chosen/selected/recruited</u> (from the population)	1	
1(b)(ii)	Name the sampling technique used by Peter. Name = 1 volunteer [definitive]	1	Accept self-selected.
1(b)(iii)	Name the sampling technique used by Cicely. Name = 1 opportunity [definitive]	1	

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Question	Answer	Marks	Guidance
2	From the study by Pozzulo et al. (line-ups):		
2(a)	Explain how <u>one</u> independent variable (IV) was operationalised. Identify IV = 1 Operationalise IV = 1 Age; (identify) - Children and adults; (operationalise) Line up type (identify) - Target-present and target absent; (operationalise) Cognitive demand / familiarity/type (of target); (identify) - Cartoon and human (targets); (operationalise)	2	Descriptions of how the images were made = 0 = NAQ IV = children and adults and then give the ages for each = 2
2(b)	Explain how <u>one</u> dependent variable (DV) was operationalised. Identify DV = 1 Operationalise DV = 1 Correct identification; (identify) - Picking out the target when it was there; (operationalise) Correct rejection; (identify) - Picking no target when there was none; (operationalise)	2	Don't accept choosing a foil as an operationalisation point for correct rejection as this is incorrect need to say about pointing to the silhouette. Accept calculation of the mean for operationalisation

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Question	Answer	Marks	Guidance
3	Figure 3.1  Figure 3.2  Number of words recalled (out of 25)		
3(a)	Name the type of graph shown in Figure 3.1. Identify Figure 3.1 bar chart/bar graph = 1 [definitive]	1	
3(b)	Name the type of graph shown in Figure 3.2. Identify Figure 3.2 histogram = 1 [definitive]	1	

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Question	Answer	Marks	Guidance												
3(c)	Draw a table using the data in Fig. 3.2. You <u>must</u> label the rows and columns of your table. A 'number of words recalled' heading = 1 Units (up to 25) = 1 frequency = 1 Correct data = 1 Categories = 1 MAX 3 if frequency data is incorrect. <table><tr><td>Number of words recalled (out of 25)</td><td>8–10</td><td>11–12</td><td>13–14</td><td>15–16</td><td>17–18</td></tr><tr><td>frequency</td><td>25</td><td>15</td><td>17</td><td>14</td><td>29</td></tr></table>	Number of words recalled (out of 25)	8–10	11–12	13–14	15–16	17–18	frequency	25	15	17	14	29	4	
Number of words recalled (out of 25)	8–10	11–12	13–14	15–16	17–18										
frequency	25	15	17	14	29										

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Question	Answer	Marks	Guidance
4(a)	Define ‘subjectivity’. Definition = 1 • A biased personal viewpoint/opinion; • How an individual's perspective affects their perception of a situation; • The way two people/researchers could differ in their interpretation;	1	
4(b)	Suggest how subjectivity could have occurred in the study by Bandura et al. (aggression). Linked suggestion = 1 • The observers could have differed in what they reported as aggression; • The experimenter and nursery teacher might have rated a child differently;	1	Generic responses e.g. ‘the researcher might be biased’ = 0

Question	Answer	Marks	Guidance
5	Describe the following ethical guidelines in relation to human participants, using any example(s): - confidentiality - privacy. Confidentiality: - participants' information is anonymous/not made public; (1 for definition) i.e. removing names/using initials; (1) participants given codes; (1) locations such as schools/workplaces should be anonymised; (1) - number of researchers with access to this should be limited; - records should be stored safe / securely; Examples - The participants in Dement and Kleitman were identified by their initials. - Saavedra & Silverman's details known e.g. boy/Hispanic/age, it's not enough to identify him Privacy: participants have the right to not have their physical or psychological space invaded; (1 for definition) - do not observe people when they would not expect to be seen (detail) - they may not want to answer questions about personal lives; (detail) - for children that might mean explaining they can keep secrets; (detail) - Ps may be embarrassed /afraid and not want to reveal information; (detail) Examples In Dement and Kleitman participants may have had an embarrassing dream and not want to talk about it	6	1 mark for each definition/point of detail, up to max of 2 for each term/concept. 1 mark for each example, max 2 for each term/concept. Examples can include examples from any studies (core, other, candidate's own). Max 4 if no examples or if only about one term/concept. Only 1 example needed to access 6 marks.

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Question	Answer	Marks	Guidance
6	Dhivya is planning to observe the different ways that animals find food. She will record the behaviours in a checklist.		
6(a)	The behavioural categories in Dhivya's checklist will include finding food by: • digging • looking around • sniffing.		
6(a)(i)	Operationalise any <u>two</u> of Dhivya's three behavioural categories. 1 mark for an operational definition × 2 Digging • Digging is the animal using its paws/nose to make a hole; • Digging is moving earth/stones with their feet; • Digging is the making a hole in the ground. Looking around • Looking around is turning the head; • Looking around is moving the eyes; Sniffing • Sniffing is the animal getting its nose close to something; • Sniffing is wrinkling its nose/wriggling its whiskers;	2	

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Question	Answer	Marks	Guidance
6(a)(ii)	Suggest <u>one</u> other category that Dhivya could include about the different ways that animals find food. 1 mark for a behavioural category (must be observable and must relate to feeding) • Hearing, animals can use sound to detect prey. • Working in groups • Burying food; • Stealing food; • Climbing (trees for food)	1	

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Question	Answer	Marks	Guidance
6(b)	Explain how <u>two</u> ethical guidelines relating to the use of animals are relevant to Dhivya's study. 1 mark for an ethical guideline relating to animals × 2 1 mark for <u>linking one guideline</u> to Dhivya's study × 2 Harm / pain / distress OR feeding; (guideline) - It might them make them feed less (causing harm); (link) - Must ensure that the animal is given food to ensure that they are not hungry (whether they found food or not in the study) (link) Deprivation; (guideline) - Observers may scare away their prey (so hungry); (link) - Dhivya must ensure that animals are fed properly and not deprived of food in. the course of observation (link) Species; (guideline) - She should choose animals that are not worried by people/overtly search for food; (link) - Numbers; (guideline) - Dhivya should only observe enough to get valid data about feeding; (link) Procedures; (guideline) - Dhivya should be a covert observer to not disturb them; (link) Do not accept human guidelines i.e. protection from harm.	4	minimising harm (and maximising benefit) - replacement - species - numbers - procedures - pain, suffering and distress - housing - reward, deprivation and aversive stimuli Has to have a link i.e. sleep/digging/food etc for two marks. The link they use has to be related to the guideline identified

Question	Answer	Marks	Guidance
7	Gill is planning a case study of a man known worldwide for his helpfulness.		
7(a)	Some case studies use triangulation.		
7(a)(i)	Explain what is meant by triangulation, using Gill's study as an example. 1 mark for meaning of triangulation 1 mark for any three sources of data linked to Gill's study (techniques or different uses of one technique) (triangulation is) the use of three (or more) sources of data about the same phenomenon; (meaning) - Gill could use observations, interview and questionnaire with the man; (example) - Interview him, his family and the people he has helped; (example)	2	Accept: Triangulation is the use of different types of data within the same study = 1
7(a)(ii)	Explain <u>one</u> strength of using triangulation in a case study. 1 mark for identifying a strength 1 mark for detail It helps to raise validity; (strength) - because if the different sources show the same effect, this suggests the effect is real / they are measuring the same thing; (detail) It confirms reliability; (strength) - As the researcher is likely to have been being consistent if the sources agree; (detail)	2	

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Question	Answer	Marks	Guidance
7(b)	Explain one strength of the case study research method, other than the use of triangulation. 1 mark for identifying a strength 1 mark for detail Can study one person in depth /detail; (ID) - meaning that complex issues can be explored providing a much richer understanding (detail) Only studying one instance/ person who is special/unique/interesting; (ID) - e.g. a rare condition so something can be investigated that it would be impossible to study otherwise; (detail)	2	NB 'Only studying one instance/ person / unit' is description, not a strength Study complex issues in depth (1) which will provide a greater understanding of that issue as can obtain more data (1)
7(c)	Explain <u>two</u> weaknesses of the case study research method, using Gill's study as an example. 1 mark for weakness x 2 1 mark for link x 2 Gill has an expectation that he is exceptionally helpful, so will interpret data in a biased way; (link) - So low validity; (2nd mark only) The man Gill is studying is exceptionally helpful, so her findings won't apply to normal helping; (link) - So low generalisability; (2nd mark only) Gill believes he is helpful, so will interpret her results that way but another researcher might not; (link) - So low reliability; (2nd mark only)	4	Generic = 0 For example, Gill's study may be low in validity due to bias = 0 Gills study may be biased as she may expect him to be helpful = 1 Gills study may be biased as she may expect him to be helpful so will be low in validity = 2

Question	Answer	Marks	Guidance
8	Mitul is investigating whether there is a relationship between mindfulness and sleep quality (how well people sleep). He is planning for his participants' sleep quality to be measured in their own homes.		
8(a)	Suggest <u>one</u> way that sleep quality could be measured in the participants' homes. 1 mark for way (measure must be possible at home and produce continuous data) 1 mark for linked detail (e.g. if scale must be complete) (questionnaire/interview) using a rating scale; (generic way) - State sleep quality last night, 0 (poor sleep) to 5 (slept very well; (detail) Use mobile phone sleep app; (way) - Which assesses sleep disturbances / snoring; (detail) Rate sleep quality from 0 (poor) to 5 (excellent) = 2 marks	2	EOG/EEG not feasible in a home so do not credit Stopwatch is fine if a little difficult as when do you know when to start it!
8(b)	Suggest <u>one</u> practical advantage of measuring sleep quality in participants' homes compared to measuring sleep quality in a laboratory. 1 mark for identifying an advantage (can be generic) 1 mark for detail Needs one link to sleep to get two marks. - Ps will be less disturbed / sleep more naturally/can go to bed at their normal time; (linked advantage/ detail) - The results will have ecological validity; (generic ad/ detail) - So, their sleep quality will be more representative of normal sleep; (linked advantage/detail)	2	

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Question	Answer	Marks	Guidance
8(c)	Suggest <u>one</u> practical disadvantage of measuring sleep quality in participants' homes compared to measuring sleep quality in a laboratory. 1 mark for identifying a disadvantage 1 mark for detail Need some link to sleep to get two marks. Ps may not record sleep quality accurately; (linked disadvantage) • So, their sleep quality could appear better /worse than it really was; (detail) • Which means that the results gained are low in reliability (and don't represent their actual sleep quality) Ps could lie/be affected by social desirability; (generic disadvantage) • So, their sleep quality could appear better /worse than it really was; (detail) • Which means that the results gained may be low in validity (as they don't represent normal sleep patterns) Participants could be affected by extraneous variables • such as outside noise unlike in a lab where everything is controlled (linked disadvantage) • Which means that the results gained may be low in validity (as they don't represent normal sleep patterns)	2	Do not accept a term alone as a disadvantage it can only be in addition to an identified disadvantage (i.e. the detail mark)

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Question	Answer	Marks	Guidance						
9	Sydney is planning a longitudinal study using a group of children. The children use a centre where they choose activities such as cooking, stories, sports and a maths club. Sydney is investigating whether the children’s choice of activities changes as they get older.								
9(a)	Describe how Sydney could conduct a longitudinal study to investigate changes in children’s choice of activities as they get older. He will test each of the participants within one week of their birthday each year. Do <u>not</u> describe sample / sampling technique or ethical issues/guidelines in your answer. The four required features for a longitudinal study are: (a) tests/tasks: measures used for interests/hobby choices (e.g. description of tasks, tests, questions, examples). (b) scoring: how the tasks/tests/questions will be scored or analysed (e.g. ratings, adding up totals, interpretation of qualitative data, comparing scores on the same tests over time such as with averages). (c) recontacting of participants: method named e.g. post/email/phone/social media (information in communication, how records are kept, updated) (d) controls/standardisation: ways to maintain parity across testing intervals. Note: an experiment is not acceptable, i.e. cannot just be a repeated measures design with one test and one retest of a single measure of a dependent variable. Note: There are no marks for frequency/interval. It is REP, as it is in the question	10	To mark Question 9(a), create four ‘imaginary columns’ down one margin, using one column for each of the four required features. Tick each feature (tick-a, tick-b, tick-c, tick-d) when it appears, then underline the letter () for detail. Use L1, L2, L3, L4, L5 at the end of the response to indicate the level. Use the table below to mark candidate responses to this question. <table><tr><th>Level</th><th>The response:</th></tr><tr><td>Level 5 9–10 marks</td><td> - has all the required features, all with <u>detail</u>, with mostly appropriate terminology. - AND <i>clearly applies</i> knowledge of methodology involved in planning an investigation. </td></tr><tr><td>Level 4 7–8 marks</td><td> - has all the required features, but only some of these with <u>detail</u>, with some appropriate terminology. - AND <i>applies</i> knowledge of methodology involved in planning an investigation. </td></tr></table>	Level	The response:	Level 5 9–10 marks	- has all the required features, all with <u>detail</u>, with mostly appropriate terminology. - AND <i>clearly applies</i> knowledge of methodology involved in planning an investigation.	Level 4 7–8 marks	- has all the required features, but only some of these with <u>detail</u>, with some appropriate terminology. - AND <i>applies</i> knowledge of methodology involved in planning an investigation.
Level	The response:								
Level 5 9–10 marks	- has all the required features, all with <u>detail</u>, with mostly appropriate terminology. - AND <i>clearly applies</i> knowledge of methodology involved in planning an investigation.								
Level 4 7–8 marks	- has all the required features, but only some of these with <u>detail</u>, with some appropriate terminology. - AND <i>applies</i> knowledge of methodology involved in planning an investigation.								

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Question	Answer	Marks	Guidance								
9(a)			<table><tr><td>Level 3 5–6 marks</td><td> - has some of the required features with <u>detail</u> / all of the required features with <u>no detail</u>, and some appropriate terminology. - AND <i>applies a basic</i> knowledge of methodology involved in planning an investigation. </td></tr><tr><td>Level 2 3–4 marks</td><td> - has at least two of the required features, with little appropriate terminology. - AND <i>attempts</i> to use knowledge of methodology involved in planning an investigation. </td></tr><tr><td>Level 1 1–2 marks</td><td> - has one of the required features and uses little appropriate terminology. - AND - makes a <i>limited attempt</i> to use knowledge of methodology involved in planning an investigation, eg may not use the method required by the question. </td></tr><tr><td>0 marks</td><td>No creditable response.</td></tr></table> Other appropriate responses should also be credited.	Level 3 5–6 marks	- has some of the required features with <u>detail</u> / all of the required features with <u>no detail</u>, and some appropriate terminology. - AND <i>applies a basic</i> knowledge of methodology involved in planning an investigation.	Level 2 3–4 marks	- has at least two of the required features, with little appropriate terminology. - AND <i>attempts</i> to use knowledge of methodology involved in planning an investigation.	Level 1 1–2 marks	- has one of the required features and uses little appropriate terminology. - AND - makes a <i>limited attempt</i> to use knowledge of methodology involved in planning an investigation, eg may not use the method required by the question.	0 marks	No creditable response.
Level 3 5–6 marks	- has some of the required features with <u>detail</u> / all of the required features with <u>no detail</u>, and some appropriate terminology. - AND <i>applies a basic</i> knowledge of methodology involved in planning an investigation.										
Level 2 3–4 marks	- has at least two of the required features, with little appropriate terminology. - AND <i>attempts</i> to use knowledge of methodology involved in planning an investigation.										
Level 1 1–2 marks	- has one of the required features and uses little appropriate terminology. - AND - makes a <i>limited attempt</i> to use knowledge of methodology involved in planning an investigation, eg may not use the method required by the question.										
0 marks	No creditable response.										

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Question	Answer	Marks	Guidance
9(b)(i)	Explain <u>one</u> strength of the measure(s) you described in 9(a) to collect data about the children's choice of activities. Do <u>not</u> refer to sampling in your answer. Identification of strength = 1 detail (generic or linked) = 1 Part of procedure may relate to: • operationalisation • situational / participant variables factors • standardisation • consistency within/between raters • ethical benefits. Accept other practical influences on validity, reliability or ethics. No marks for sampling technique as instructed not to.	2	Measure in part bi and bii do not have to be the same.

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Question	Answer	Marks	Guidance
9(b)(ii)	Explain <u>one</u> weakness of the measure(s) you described in 9(a) to collect data about the children's choice of activities. Do <u>not</u> refer to sampling in your answer. Identification of problem = 1 explanation (generic or linked) = 1 Part of procedure may relate to: • operationalisation • situational / participant variables factors • standardisation • consistency within/between raters • ethical benefits. Accept other practical influences on validity, reliability or ethics. No marks for sampling technique as instructed not to.	2	