Section C

Research methods

1 1 Is the diary primary or secondary data? Justify your answer.

[2 marks]

Marks for this question: AO2 = 2

1 mark for primary data.

PLUS

1 mark for an appropriate justification of why the diary data is primary data.

Possible justification:
- because the data was collected by the psychologist specifically for investigating children's play
- because the results came (directly) from the parents.

Credit other relevant answers that can be applied to the stem.

Note – Justification mark can only be awarded if primary data has been identified **and** the justification is in context (e.g. reference explicitly made to parents/play/diary/etc.)

1 2 Explain how the researcher could have used content analysis to analyse the parents' diaries.

[4 marks]

Marks for this question: AO2 = 4

Level	Marks	Description
2	3–4	Explanation of how the researcher could have used content analysis to analyse the parents' diaries is clear and mostly accurate. Application is explicit and appropriate. The answer is generally coherent with effective use of terminology.
1	1–2	Some explanation of how the researcher could have used content analysis to analyse the parents' diaries is evident. Application is limited. The answer lacks accuracy and/or detail. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:
- the researcher could have begun by reading through some of the parents' diaries to identify potential categories which emerged from the data of the different types of play the parents engaged in with their children
- such categories might include: hide and seek, board games, video games, sports, role-play, going to the park
- the researcher would then have read the diaries again and counted the number of examples which fell into each category to provide quantitative data.

Credit variations in so far as they explain the process.

1 3 How might the researcher have assessed the reliability of the content analysis in this study?

[4 marks]

Marks for this question: AO2 = 4

Award **1 mark** for **each** of the following points (up to 4 marks):
- **second person** could (independently) perform a content analysis on the **same diaries** (inter-observer/rater reliability)
- **repeat** content analysis on a second occasion using the **same diaries** (test-retest reliability)
- use the existing categories
- they could compare their tally charts looking for agreement/calculate the correlation between the two sets of data
- researchers generally accept 0.8 correlation (accept 0.7–0.9) between the two sets of data.

Note – for full marks there must be some explicit application

1 4 Explain why the data collected from the interview might have improved upon the data collected from the diaries.

[3 marks]

Marks for this question: AO3 = 3

3 marks for a clear and coherent explanation of why the interview might have improved upon the data collected from the diaries.
2 marks for an explanation that lacks the clarity of the 3-mark answer.
1 mark for a limited or muddled explanation.

Possible content:
- the interviewer could have asked follow-up questions to gain greater insight into some of the comments in the diary
- the interviewer may have gained rapport with the participant so they felt comfortable revealing more personal/sensitive information face-to-face.

Accept other valid points.

Full credit can be awarded for a single, elaborated point or a number of points in less detail.

1 5 Write **one** question that could be used in the researcher's interview that would produce qualitative data.

[2 marks]

Marks for this question: AO2 = 2

2 marks for an appropriate question which produces qualitative data about play.
1 mark for a muddled and/or limited question that produces qualitative data.

Note: can accept relevant items that are not phrased as questions, eg 'describe your child's play.'

1 6 Identify **one** limitation of qualitative data.

[1 mark]

Marks for this question: AO3 = 1

1 mark for stating an appropriate limitation of qualitative data.

Possible content:
- difficult to analyse
- analysis may be subjective.

Accept other valid limitations.

1 7 Explain how the researcher could have obtained informed consent from the parents for this study.

[4 marks]

Marks for this question: AO2 = 4

Level	Marks	Description
2	3–4	Explanation of how the researcher could have obtained informed consent from the parents for this study is clear and generally well detailed. The material is applied explicitly and appropriately. The answer is generally coherent with effective use of terminology.
1	1–2	Some explanation of how the researcher could have obtained informed consent from the parents for this study is evident. Application is limited. The answer lacks accuracy and/or detail. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:
- write to the parents/ring the parents/invite them in for a meeting
- tell them all the study details (aims, procedures, data use) so that they are fully informed what will happen and why, eg that the study was investigating age-related play differences, the children would be observed for 15 minutes while playing at nursery, the child would have three types of toy to choose from: building blocks, a sandpit or a slide
- ask for agreement/signed consent.

Accept other relevant content.

Note – bullet 3 must be covered for a level 2 response

1 8 Identify the type of experiment used in this study. Justify your answer.

[3 marks]

Marks for this question: AO2 = 3

1 mark for identification of the correct type of experiment – quasi.

PLUS

2 marks for identifying the IV as age with clear justification for the correct type of experiment.
1 mark for a limited and/or muddled justification for the type of experiment.

Possible justification:
- the IV is age which is pre-existing/naturally occurring/has not been manipulated/could not have been controlled by the researcher
- the IV is age so random allocation of the children to each condition is not possible.

Credit other relevant content.

If the type of experiment is wrong or absent, but the justification could apply to a quasi-experiment in this study, then this can receive credit up to a maximum of 2 marks.

1 9 Explain how a pilot study could be carried out to improve this study.

[4 marks]

Marks for this question: AO3 = 4

Level	Marks	Description
2	3–4	Explanation of how a pilot study could be carried out to improve this study is clear and mostly accurate. The answer is generally coherent with effective use of terminology.
1	1–2	Some explanation of how a pilot study could be carried out to improve this study is evident. The answer lacks accuracy and/or detail. Use of terminology is either absent or inappropriate.
	0	No relevant content.

Possible content:
- a small-scale trial version of the study could be conducted to identify any potential flaws/issues
- the procedures could have been checked to ensure they are appropriate and effective, e.g. the presence of the observer may have affected the behaviour seen
- if the child got bored the length of playtime could have been reduced
- the materials used could have been checked to ensure they are appropriate and effective
- if no children chose any of the types of play, then alternatives could have been chosen.

Credit other relevant content.

2 0 Explain how the researcher might have obtained the stratified sample of 4-year-old children from the two different nursery schools.

[4 marks]

Marks for this question: AO2 = 4

1 mark for **each** of the following:
- identification of strata/sub-groups (the sample should come from the different nurseries)
- calculate the required proportion from each nursery based on the proportion in the population: 3:2 (accept other examples of this ratio)
- select six children from nursery A and four children from nursery B
- identification of any reasonable method of selecting participants from each strata to form the sample e.g. random, opportunity, systematic.

Credit answers based on other strata/sub-groups, e.g. gender.

Note – bullet points 1 and 2 are covered within bullet point 3 and therefore credit for bullet points 1 and 2 should still be awarded if only bullet point 3 is presented and fully covered.

2 1 Identify the type of distribution shown in the data in **Table 1** for **each** age group. In **each** case justify your answer.

[4 marks]

Marks for this question: AO2 = 4

1 mark for **each** of the following points:
- 2-year-old scores indicate a negatively skewed distribution
- because the mean is lower than the median/mode (or to the left-hand side of the distribution)/the mode is higher than the mean/median

- 4-year-old scores indicate a normal distribution
- because the mean, median and mode are the same/the mean equals the mode. Accept the averages are the same.

2 2 What do the mean values in **Table 1** suggest about play preferences in 2-year-old and 4-year-old children? Justify your answer.

[2 marks]

Marks for this question: AO2 = 2

1 mark for suggesting 2 -year-olds prefer sandpit play (more than 4-year-olds)/4-year-olds prefer sandpit play less (than 2-year-olds).

Plus

1 mark for an appropriate justification of the play preference; because the mean time spent in the sandpit was higher for 2-year-olds (than for 4-year-olds)/ because the mean time spent in the sandpit was lower for 4-year-olds (than for 2-year-olds).

Note – simply re-stating data from the table is not sufficient for justification mark.

Note – no credit awarded for justification in isolation

2 3 Explain **three** reasons for this choice in the context of this study.

[6 marks]

Marks for this question: AO2 = 6

1 mark for each of the following reasons:
- experimental design is independent/unrelated
- the 2-year-old and 4-year-old children only took part in one condition/are different participants
- the data is interval
- measured time/minutes (spent in the sandpit is a universal/standardised measure)
- testing for a difference
- compared the times 2-year-old and 4-year-old children spend/play in the sandpit.

2 4 With reference to the critical values in **Table 2** above, explain whether or not there was a significant difference between the two age groups at the 5% level of significance.

[2 marks]

Marks for this question: AO2 = 2

1 mark for **each** of the following points:
- the difference is significant.
- the calculated value (3.576) is greater than the critical/table value of **2.101** (when df = 18, at p = 0.05)

Note – the table value of 2.101 can be identified in the table but candidate must still indicate that the calculated value is greater than this for credit for the second bullet point to be awarded.

2 5 Referring to the critical values in **Table 2**, explain why the researcher is very unlikely to have made a Type I error.

[3 marks]

Marks for this question: AO2 = 3

3 marks for a clear, coherent explanation which demonstrates some understanding of a Type I error with appropriate reference to the table.
2 marks for a coherent explanation which lacks the requirements of a 3-mark answer.
1 mark for a limited and/or muddled explanation.

Possible content:
- there is only a 1% probability/very low chance of making a Type I error because the result is (still) significant at p = 0.01 as 3.576 > 2.878
- at p = 0.05 there is only a 5% chance of making a Type I error which is low

Accept alternative wording.