

**GCSE
PSYCHOLOGY
8182/1**

Paper 1 Cognition and Behaviour

Mark scheme

June 2023

Version: 1.0 Final



Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Possible content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the possible content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

Examiners are reminded that AO1 and AO2 are regarded as interdependent. When deciding on a mark in instances where there is an attempt at more than one assessment objective all attempts should be considered together using the best fit approach. In doing so, examiners should bear in mind the relative weightings of the assessment objectives.

When an answer only contains content related to one of the skills (AO1/AO2), then the levels descriptors for the award of marks for the skill attempted should be applied to the answer, up to the maximum mark available.

Section A

Memory

01	<p>Which of the following describes semantic memory?</p> <p>Shade one box.</p> <p style="text-align: right;">[1 mark]</p>
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Marks for this question: AO1 – 1 mark

Answer – D (It stores facts about general knowledge and meanings)

02	<p>Which of the following is the correct definition of a 'false memory'?</p> <p>Shade one box.</p> <p style="text-align: right;">[1 mark]</p>
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Marks for this question: AO1 – 1 mark

Answer – B (A memory for something that didn't happen but feels true)

03	<p>What is meant by 'encoding' as a process of memory?</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO1 – 2 marks

Up to **2 marks** for a definition of encoding as a process of memory.

2 marks: a clear and accurate definition.

1 mark: a limited or muddled definition.

Possible content

- Changing information into a form that can be stored in the brain.

Credit other relevant content.

NOTE: To be considered clear and accurate, answers should make reference to 'changing information' and 'storing in the brain'.

04.1	<p>A researcher wanted to investigate the effect of context on the accuracy of memory.</p> <p>Describe how she could design a laboratory experiment to do this.</p> <p>You need to include the following information in your answer:</p> <ul style="list-style-type: none"> • a task that she could ask participants to carry out and a description of the data she would collect • what the conditions of the independent variable would be • one extraneous variable that could affect the results and how the researcher could control this variable. <p style="text-align: right;">[6 marks]</p>
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Marks for this question: AO2 – 6 marks

Up to **2 marks** for a description of an appropriate task **and** a description of the data that would be collected.

2 marks for a clear and accurate description.

1 mark for a limited or muddled description.

PLUS

Up to **2 marks** for an outline of the conditions of the independent variable.

2 marks: a clear and accurate outline with both conditions of the independent variable.

1 mark: a limited or muddled outline.

Example

- Whether the students recalled the words in the same or different environment to where the learning took place. (2 marks)
- Environment. (1 mark)

NOTE: To be considered clear and accurate, reference must be made to more than one condition of the independent variable.

PLUS

Up to **2 marks** for a description of one relevant extraneous variable and how the researcher could control this variable.

2 marks for a clear and accurate description.

1 mark for a limited or muddled description.

Credit other relevant content.

NOTE: If the candidate has written about more than one extraneous variable, award marks to the **one** that is clearest and most effective.

04.2	<p>The researcher considered different experimental designs when planning her experiment.</p> <p>Identify and explain one strength and one weakness of an independent groups design.</p> <p>Write your answers in the correct spaces provided.</p> <p style="text-align: right;">[4 marks]</p>
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Marks for this question AO3 – 4 marks

Up to **2 marks** for an outline of a strength of independent groups.

2 marks: a clear and detailed outline.

1 mark: a limited or muddled outline.

Possible content

Strengths

- There are no order effects (e.g. practice effects). This is because participants only do the task once.
- Participants are less likely to work out the aim of the study. This is because they only take part in one condition.
- The same task can be carried out by both groups. This often allows the same materials to be used which saves the researcher time.

PLUS

Up to **2 marks** for an outline of a weakness of independent groups.

2 marks: a clear and detailed outline.

1 mark: a limited or muddled outline.

Possible content

Weaknesses

- There may be participant variables. This means that any difference in the results may be due to there being different people in each condition.
- More people are needed to take part. If we want 10 people in each condition, we need 20 people altogether.

Credit other relevant content.

NOTE: If the candidate has written about more than one strength or more than one weakness, award marks to the one that is clearest and most effective.

05	Evaluate the multi-store model of memory.	[4 marks]
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Marks for this question: AO3 – 4 marks

Level	Marks	Description
2 Clear	3–4	Analysis and evaluation of the multi-store model of memory is effective. Any conclusions drawn are sound and fully expressed. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.
1 Basic	1–2	Analysis and evaluation of the multi-store model of memory is of limited effectiveness or muddled. Any attempts to draw conclusions are not always successful. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
0	0	No relevant content.

Possible content

- The multi-store model of memory does not explain how you can remember some information even though you have not rehearsed it and also struggles to explain why we can forget information that we have practised and rehearsed.
- There is research evidence to support the idea that there are distinct sensory, short-term and long-term memory stores. Research shows that sensory, short-term and long-term memory are usually encoded in different forms and also differ in their duration and capacity.
- It can provide practical ideas for how to remember things more effectively. For example, we need to pay attention when our teacher is talking to us because information is only passed from sensory to short-term memory if we pay attention to it.
- The multi-store model has been criticised for being oversimplified. For example, it states we have one single long-term memory store. However, other research evidence has shown that there are several types of long-term memory; procedural, episodic and semantic.
- Supportive evidence for the MSM often comes from studies involving lists of words which are not reflective of real-life memory.

Accept other relevant content.

06	Describe the method used by Bartlett in his ‘War of the Ghosts’ study.	[3 marks]
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Marks for this question: AO1 – 3 marks

Up to **3 marks** for a description of Bartlett’s method.

3 marks: a clear and detailed description.

2 marks: a limited description.

1 mark: a very limited/muddled description.

Possible content

- British participants were asked to read/listen to a Native American story called the ‘War of the Ghosts’.
- Bartlett then used different techniques to measure the accuracy of recall.
- In one method, participants were asked to retell the story to another person. This person then retold the story to another person, and so on.
- Bartlett made a record of the version of the story that each person told.
- In another method, participants were asked to recall the story after a 15-minute delay. They were then asked to recall the story again on several occasions over different time periods.
- Bartlett made a record of the version that was told each time.

Credit other relevant content.

NOTE: To be considered clear and detailed, reference to a record being made of each version of the story after each retelling must be made.

07	Use your knowledge of interference to explain why Uncle Bill cannot accurately remember what day of the week Dan was born on. [4 marks]
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Marks for this question: AO1 – 2 marks and AO2 – 2 marks

Level	Marks	Description
2 Clear	3–4	<p>AO1: Clear and accurate knowledge of interference as a factor affecting the accuracy of memory with some detail.</p> <p>AO2: Clear and accurate application of knowledge and understanding of interference as a factor affecting the accuracy of memory to Uncle Bill's confusion.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, and is clear, coherent and focused.</p>
1 Basic	1–2	<p>AO1: Limited or muddled knowledge of interference as a factor affecting the accuracy of memory is present.</p> <p>AO2: Limited or muddled application of knowledge and understanding of interference as a factor affecting the accuracy of memory to Uncle Bill's confusion.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

AO1

- Interference is when we have difficulty recalling information due to other information getting in the way.
- It is more likely to happen when the two memories are similar.
- This competing of information results in reduced accuracy of what we remember.
- Interference can be proactive (old information disrupts the recall of new information), or retroactive (new information disrupts the recall of old information).

AO2

- Uncle Bill cannot remember the day of the week that Dan was born because that information is being confused with the day of the week Dan's sister was born.
- The two pieces of information that Uncle Bill is trying to remember are very similar – they are both days of the week and birthdays.
- This may be explained by proactive interference. Dan's sister was born first, so this earlier information is disrupting the more recent information of Dan's birthday.

Credit other relevant content.

Section B

Perception

08	<p>'Fiction' is one explanation for why people see visual illusions.</p> <p>Which of the following visual illusions is an example of fiction?</p> <p>Shade one box.</p> <p style="text-align: right;">[1 mark]</p>
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Marks for this question: AO1 – 1 mark

Answer – B (The Kanizsa triangle)

09	<p>Kishan is studying Food Preparation and Nutrition at school. During one of his lessons, he is asked to close his eyes and taste different foods. He then has to guess what the foods are. He thinks that one of them is very familiar and correctly recognises it as strawberry yogurt.</p> <p>State whether Kishan is experiencing sensation or perception when he correctly recognises the strawberry yoghurt.</p> <p>Explain your answer.</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO2 – 2 marks

1 mark for correctly stating that Kishan is experiencing **perception**.

PLUS

1 mark for an explanation.

Example

His brain interpreted the taste of the food using his past experiences of strawberry yoghurt.

Credit other relevant content.

NOTE: To be considered correct, answers should make reference to 'interpreted' and 'past experience'.

NOTE: Answers that incorrectly state 'sensation' can still receive the explanation mark for an **accurate** explanation of sensation.

10.1	Name the type of data that is shown in Table 1 . [1 mark]
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Marks for this question: AO2 – 1 mark

1 mark for any of the following (MAX 1):

- quantitative
- primary.

Accept other creditworthy answers such as numerical data, ordinal data, grouped discrete data, discrete data.

NOTE: The command term 'name' requires answers to 'identify using a recognised technical term'.

10.2	Calculate the number of participants who reported a temperature score between 6 and 10. Show your workings. [2 marks]
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Marks for this question: AO2 – 2 marks

2 marks for the correct number of participants.

11

1 mark for correct workings but incorrect/no answer.

$$40 - (6 + 16 + 1 + 2 + 2 + 1 + 1)$$

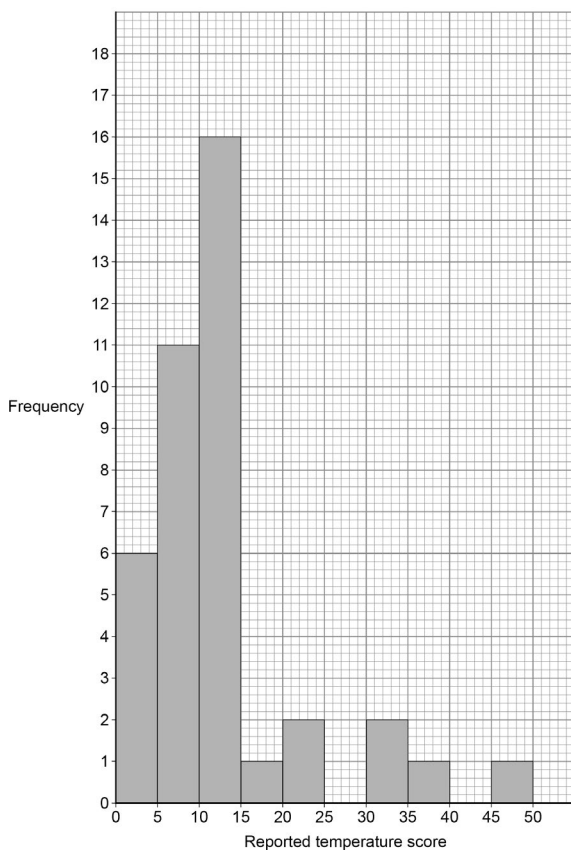
10.3	<p>Sketch a histogram to show the results in Table 1.</p> <p>Include the number of participants you wrote in answer to Question 10.2.</p> <p>Provide a suitable title and labels for your histogram.</p> <p style="text-align: right;">[4 marks]</p>
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Marks for this question: AO2 – 4 marks

1 mark for each of the following:

- Suitable graph (i.e. a histogram).
- An informative title with an element of both variables, for example ‘A histogram to show the reported temperature scores of 40 participants who listened to a Christmas song’.
- Correct labelling of **both** axes, for example Y axis labelled ‘Frequency’ or ‘Number of participants’, **and** X axis labelled ‘Reported temperature score’ PLUS suitable scale/numbers for **both** axes.
- Correct plotting of the results from **Table 1**.

Title: A histogram to show the reported temperature scores of 40 participants who listened to a Christmas song



NOTE: If bars are not touching then no credit can be given for ‘suitable graph’.

NOTE: If an incorrect score from Question **10.2** has been plotted accurately on the histogram (i.e. the second bar), a mark can be given for correct plotting.

NOTE: The command term ‘sketch’ only requires the graph to be ‘roughly’ drawn or plotted. Therefore, 100% accuracy is **not** required for the correct plotting mark.

10.4	<p>The researcher found that participants in Condition B reported the water felt warmer than participants in Condition A.</p> <p>Using your knowledge of ‘perceptual set’, outline one conclusion that the researcher could make from these findings.</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO3 – 2 marks

Up to **2 marks** for an outline of one conclusion.

2 marks: a clear and accurate outline.

1 mark: a limited or muddled outline.

Examples

Participants’ expectation about the temperature of the water was affected by which song they had heard.

Participants were predisposed to perceive that the water was warmer when they heard a song about summer.

Participants were ‘ready’ to feel that the water was colder when they heard a song about winter.

Credit other relevant content.

NOTE: To be considered as clear and accurate, an outline needs to clearly be referring to perceptual set (i.e. ‘readiness’, expectation, tendency or predisposition to perceive something in a certain way).

NOTE: If the candidate has written about more than one conclusion, award marks to the **one** that is clearest and most effective.

11	<p>Bruner and Minturn investigated the effect of expectation on perception.</p> <p>Describe Bruner and Minturn’s study.</p> <p style="text-align: right;">[4 marks]</p>
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Marks for this question: AO1 – 4 marks

Level	Marks	Description
2 Clear	3–4	<p>Clear and accurate knowledge of Bruner and Minturn’s study with some detail.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.</p>
1 Basic	1–2	<p>Limited or muddled knowledge of Bruner and Minturn’s study is present.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

- The aim was to see whether expectation is an important factor in how an ambiguous figure is perceived.
- 24 participants took part in an experiment on recognising numbers and letters using an independent groups design.
- Half of the participants were shown a sequence of letters with an ambiguous figure in the middle. The other half were shown a sequence of numbers with the same ambiguous figure in the middle.
- The ambiguous figure was a broken ‘B’ that could be seen as either the letter B or the number 13.
- Participants who saw a sequence of letters were more likely to report the ambiguous figure as a letter B.
- Participants who saw a sequence of numbers were more likely to report the ambiguous figure as a number 13.
- The researchers concluded that the participants’ expectations had directly affected how they interpreted the ambiguous figure.
- This shows that expectation affects perception.

Credit other relevant content.

12	Describe and evaluate Gibson’s direct theory of perception.	[9 marks]
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Marks for this question: AO1 – 4 marks and AO3 – 5 marks

Level	Marks	Description
3 Detailed	7–9	<p>AO1: Relevant knowledge and understanding of Gibson’s direct theory is accurate with detail.</p> <p>AO3: Analysis and evaluation of Gibson’s direct theory is effective. Any conclusions drawn are sound and fully expressed.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.</p>
2 Clear	4–6	<p>AO1: Relevant knowledge and understanding of Gibson’s direct theory is present but there are occasional inaccuracies/omissions.</p> <p>AO3: There may be some effective analysis and evaluation of Gibson’s direct theory. There may be an attempt to draw conclusions.</p> <p>Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning, and is clear, generally coherent and focused although structure may lack some logic.</p>
1 Basic	1–3	<p>AO1: Knowledge and understanding of Gibson’s direct theory is present but limited.</p> <p>AO3: Analysis and evaluation of Gibson’s direct theory is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

AO1

- Perceptual abilities are innate and do not have to be learnt through experience.
- Gibson claimed that sensation and perception are the same thing.
- We perceive things by using sensory information.
- We have enough information to understand the world around us by just using sensory information.
- Visual information such as light, texture and detail helps us to make judgements about distance, movement and depth.
- Motion parallax is a monocular depth cue which helps us understand movement. Things closer to us appear to move faster than things further away.
- Gibson’s reference to affordances is his way of explaining why inferences are not needed in perception.
- It is a bottom-up theory.

AO3

- Gibson's theory cannot explain why perception is sometimes inaccurate, for example when our brain is tricked by visual illusions.
- Despite Gibson's claim that sensation and perception are the same, we know from our experience of visual illusions that they are separate processes.
- Gibson's theory provides a good explanation for how we are usually able to perceive quickly and accurately in everyday life using information from the optic array.
- Gibson's theory has helped us to understand the richness of the optical information our eyes receive, such as texture and colour gradient.
- Gibson developed his theory using evidence collected in real-life settings such as using pilots rather than through laboratory experiments. This increases the validity of his theory.
- Evidence shows that factors such as expectation and culture affect perception. This challenges Gibson's theory and suggests that nurture (knowledge and past experience) also play an important role in perception.
- There is research evidence to support the idea that depth perception is innate. Gibson and Walk found that infants have abilities for perceiving depth even at a very young age. This supports the idea that perception may be due to nature.

Credit other relevant content.

Section C

Development

13	<p>Which of the following is a small structure at the base of the brain that coordinates movement and balance?</p> <p>Shade one box.</p> <p style="text-align: right;">[1 mark]</p>
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Marks for this question: AO1 – 1 mark

Answer – B (Cerebellum)

14	<p>Which of the following is a true statement about people who have a growth mindset?</p> <p>Shade one box.</p> <p style="text-align: right;">[1 mark]</p>
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Marks for this question: AO1 – 1 mark

Answer – B (They believe ability will improve with practice)

15.1	<p>Identify what the independent variable and dependent variable would be in your experiment.</p> <p>Write your answers in the correct spaces provided.</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO2 – 2 marks

Up to **2 marks** for identification of appropriate conditions of the independent variable and an appropriate dependent variable.

2 marks: clear and accurate identification of the IV and DV.

1 mark: limited or muddled identification.

Possible content

- IV is fixed or growth mindset.
- IV is whether or not they have a growth mindset.
- IV is whether or not they have a fixed mindset.
- DV is grades/score/marks in end of year exams.

Credit other relevant content.

NOTE: Only identifying the IV from one condition (e.g. 'fixed mindset') or just stating 'mindset' is not creditworthy.

NOTE: Only identifying the DV as 'performance' (in end of year exams) is not creditworthy as it is not measurable.

15.2	<p>The target population for your experiment is Year 8 students at a local school.</p> <p>There are 100 Year 8 students at this school.</p> <p>Describe how you could select 20 participants for your experiment using random sampling.</p> <p style="text-align: right;">[3 marks]</p>
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Marks for this question: AO2 – 3 marks

Up to **3 marks** for a description of how 20 participants could be selected using random sampling.

3 marks: a clear and detailed description.

2 marks: a limited description.

1 mark: a very limited/muddled description.

Possible content

- Get a list of all the Year 8 students (attending a local school).
- Split the list into individual names.
- Use a method of random selection, e.g. assigning a number to each student on the list, and then selecting students using a random number generator OR putting all the students' names into a hat, and then selecting students' names from the hat.
- Stop when 20 names have been selected.

Credit other relevant content.

NOTE: Generic answers that do not refer in any way to the described study (i.e. no mention of words such as 'school', 'students', '100' or '20') are to be considered very limited.

16	<p>Piaget’s stage theory describes cognitive development.</p> <p>Briefly outline the sensorimotor stage and the formal operational stage.</p> <p style="text-align: right;">[4 marks]</p>
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Marks for this question: AO1 – 4 marks

Level	Marks	Description
2 Clear	3–4	<p>Clear and accurate knowledge and understanding of the sensorimotor stage and the formal operational stage with some detail.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.</p>
1 Basic	1–2	<p>Limited or muddled knowledge and understanding of the sensorimotor stage and/or the formal operational stage is present.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

Sensorimotor stage

- The sensorimotor stage takes place between 0–2 years.
- In this stage children learn through using their senses and motor skills.
- Learning occurs through the information received through the senses and by engaging in physical activities.
- Object permanence (understanding that objects still exist when out of sight) develops from the age of 8 months.
- Object permanence occurs when a child develops a mental representation (schema) of an object.

Formal operational stage

- The formal operational stage is the final stage and takes place from 11 years of age.
- In this stage, children can reason/solve problems using abstract and hypothetical thought.
- This means they can manipulate ideas in their head without concrete objects.
- In this stage children think logically and systematically.

Credit other relevant content.

17	Evaluate Piaget’s stage theory of cognitive development.	[5 marks]
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Marks for this question: AO3 – 5 marks

Level	Marks	Description
3 Detailed	4–5	<p>Analysis and evaluation of Piaget’s stage theory of cognitive development is effective. Conclusions drawn are sound and fully expressed.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.</p>
2 Clear	2–3	<p>There may be some effective analysis and evaluation of Piaget’s stage theory of cognitive development. There may be an attempt to draw conclusions.</p> <p>Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning, and is clear, generally coherent and focused although structure may lack some logic.</p>
1 Basic	1	<p>Analysis and evaluation of Piaget’s stage theory of cognitive development is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

- Piaget underestimated children’s abilities in his first three stages of development.
- Critical research such as Hughes’ policeman doll study shows that children can think in more developed ways than Piaget suggested when they are tested in different ways.
- Piaget assumed that all children develop the ability to think in abstract and logical ways in the formal operational stage but research shows that this is not the case for all people.
- Piaget’s theory has been very influential in education. Child-centred learning with a focus on readiness and discovery learning has had a great impact on how children learn, particularly in early years and primary education.
- Piaget’s theory is not representative of all children because he developed his theory using a small sample of children who were middle-class and from Switzerland. This means his findings may not tell us about the cognitive development of children from different social classes or cultures.
- Piaget’s theory may be based on flawed data. A lot of his research was carried out on his own children and many of the questions he asked were not standardised because they were different for every child.

Credit other relevant content.

NOTE: Evaluation of one of Piaget’s studies with no link to his stage theory (MAX 1 mark).

18	<p>McGarrigle and Donaldson investigated the development of conservation in the 'naughty teddy study'.</p> <p>Describe this study.</p> <p>Evaluate the research method used in McGarrigle and Donaldson's study.</p> <p style="text-align: right;">[9 marks]</p>
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Marks for this question: AO1 – 4 marks and AO3 – 5 marks

Level	Marks	Description
3 Detailed	7–9	<p>AO1: Relevant knowledge and understanding of McGarrigle and Donaldson's 'naughty teddy study' is accurate with detail.</p> <p>AO3: Analysis and evaluation of the research method used in McGarrigle and Donaldson's 'naughty teddy study' is effective. Any conclusions drawn are sound and fully expressed.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, and is clear, coherent and focused.</p>
2 Clear	4–6	<p>AO1: Relevant knowledge and understanding of McGarrigle and Donaldson's 'naughty teddy study' is present but there are occasional inaccuracies/omissions.</p> <p>AO3: There may be some effective analysis and evaluation of the research method used in McGarrigle and Donaldson's 'naughty teddy study'. There may be an attempt to draw conclusions.</p> <p>Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning, and is clear, generally coherent and focused although structure may lack some logic.</p>
1 Basic	1–3	<p>AO1: Knowledge and understanding of McGarrigle and Donaldson's 'naughty teddy study' is present but limited.</p> <p>AO3: Analysis and evaluation of the research method used in McGarrigle and Donaldson's 'naughty teddy study' is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

AO1

- To investigate whether young children can conserve when accidental changes are made to the appearance of objects.
- Eighty children aged from four to six years were shown two identical rows of counters and were asked whether there were the same number of counters in each row.
- 'Naughty Teddy' then accidentally moved one row of counters so they were more spaced out. Again the children were asked whether there were the same number of counters in each row.
- Over 60% of the children gave the correct answer that there were the same number of counters in each row. A higher proportion of the older children gave the correct answer compared to the younger children.
- This suggests that children under the age of seven years old can conserve and that the ability to conserve number increases with age.

AO3

- This was a laboratory-based study under highly controlled conditions.
- This is useful for the researcher who has eliminated many extraneous variables so can be sure the IV has affected the DV if the results show an effect.
- Procedures are standardised so the study can be replicated. This means the reliability of the findings can be investigated with different groups of participants.
- Laboratory-based studies often use artificial tasks/materials (such as adults moving counters and asking children questions about this). Because this is not similar to using real-life tasks/real objects, this can reduce the validity of the results.
- High control can decrease the validity of the results because it increases the artificiality of the performance of the participants. This means it is difficult to generalise research findings to predict behaviour in a more normal setting.

Credit other relevant content.

NOTE: Evaluation of the study with no link to the research method used (MAX 1 AO3 mark).

Section D

Research Methods

19.1	Identify the type of experiment used in this study. Shade one box only.	[1 mark]
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Marks for this question: AO2 – 1 mark

Answer – A (Field)

19.2	Identify the experimental design used in this study. Shade one box only.	[1 mark]
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Marks for this question: AO2 – 1 mark

Answer – E (Repeated measures)

20	Explain one difference between primary and secondary data.	[3 marks]
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Marks for this question: AO1 – 3 marks

Up to **3 marks** for an explanation of one difference between primary **and** secondary data.

- 3 marks:** a clear and detailed explanation.
- 2 marks:** a limited explanation.
- 1 mark:** a very limited/muddled explanation.

Possible content

- Primary data is first-hand responses/information that researchers have collected directly from the participants in an investigation/that has been specifically collected for that investigation.
- Secondary data is second-hand information that researchers have collected from places such as public records or investigations published by other researchers.
- The difference is that primary data has been collected directly from participants by the researcher whereas secondary data has been collected by another person.
- The difference is that primary data has been collected for a specific investigation whereas secondary data has not.

Credit other relevant content.

NOTE: To be considered clear and detailed, the difference between primary and secondary data must be explicitly stated.

NOTE: If the candidate has written about more than one difference, award marks to the **one** that is clearest and most effective.

21.1	Explain one weakness of using a stratified sample when conducting research. [2 marks]
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Marks for this question: AO3 – 2 marks

Up to **2 marks** for an explanation of **one** weakness of using a stratified sample when conducting research.

2 marks: a clear and accurate explanation.

1 mark: a limited or muddled explanation.

Possible content

- Stratified sampling is a difficult and time-consuming method for a researcher because they need to identify relevant subgroups in the target population and then calculate the proportion of each subgroup in the target population.
- There may be bias when the researcher decides which subgroups in the target population are relevant which may reduce the representativeness of the sample.
- Not all of the participants who are selected will agree to take part in research which may reduce the representativeness of the sample.

Credit other relevant content.

NOTE: If the candidate has written about more than one weakness, award marks to the one that is clearest and most effective.

21.2	Calculate the percentage of participants who responded YES. State your answer using two significant figures and show your workings. [3 marks]
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Marks for this question: AO2 – 3 marks

3 marks for the correct percentage to two significant figures.

63

2 marks for the correct percentage but not rounded to two significant figures.

For example, 63.33 or 63.0

1 mark for correct workings but incorrect/no answer.

$19/30 \times 100$

Accept other creditworthy workings such as 3.333×19 or $100/30 \times 19$

21.3	<p>What is the ratio of time spent working compared to time spent chatting to friends?</p> <p>Write this ratio in its simplest form.</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO2 – 2 marks

2 marks for the correct ratio in simplest form.

6:1

1 mark for the correct ratio but not in its simplest form.

For example, 60:10, 30:5, 12:2.

Credit other relevant content.

21.4	<p>Identify two ethical issues that researchers should consider in observation studies.</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO1 – 2 marks

Up to **2 marks** for identifying **two** relevant ethical issues.

2 marks: a clear and accurate identification.

1 mark: a limited or muddled identification.

Possible content

- Respect
- Responsibility
- Integrity
- Confidentiality/anonymity/privacy
- Informed consent
- Parental consent
- Deception
- Right to withdraw
- Protection from harm
- Debrief

Credit other relevant content.

NOTE: If the candidate has written more than **two** ethical issues, **only** mark the **first two**.

21.5	<p>Sketch a frequency table the researcher and their assistant can use to collect information about the types of learning activity participants do during study lessons.</p> <p>Include two categories of behaviour about types of learning activity in your frequency table.</p> <p>Do not include ‘chatting to friends’ and ‘completing work’ as categories of behaviour.</p> <p style="text-align: right;">[4 marks]</p>
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Marks for this question: AO2 – 4 marks

Possible content

- A sketch of a (frequency) table with rows and columns. (1 mark)
- Row or column headings for ‘frequency’ or ‘tally’. (1 mark)
- Identification of **two** categories of behaviour for types of learning activity. (MAX 2 marks)

Example of frequency table:

Type of learning activity	Tally/frequency
Reading	
Taking notes	

Credit other relevant content.

NOTE: Do not credit ‘chatting to friends’ and ‘completing work’ as categories of behaviour.

21.6	<p>The psychologist and their assistant had high interobserver reliability in their observation study.</p> <p>Define what is meant by ‘interobserver reliability’ in observational research.</p> <p style="text-align: right;">[2 marks]</p>
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Marks for this question: AO1 – 2 marks

Up to **2 marks** for a definition of interobserver reliability.

2 marks: a clear and accurate definition.

1 mark: a limited or muddled definition.

Possible content

- The extent to which the record sheets of two or more people carrying out an observation match one another.

Credit other relevant content.

NOTE: To be considered clear and accurate, answers must make reference to both two or more observers/people **and** matching/similar record sheets/results.

21.7	<p>From the results of the observation, the researcher realised that students spent more time chatting to friends during study lessons than they had estimated on the questionnaire.</p> <p>Briefly evaluate the use of questionnaires in psychological research.</p> <p>In your answer, refer to the questionnaires about the use of study lessons that the sixth form students had filled in.</p> <p style="text-align: right;">[5 marks]</p>
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Marks for this question: AO2 – 2 marks and AO3 – 3 marks

Level	Marks	Description
3 Detailed	4–5	<p>AO2: Clear application of knowledge and understanding of evaluation of questionnaires to the investigation into the use of study lessons.</p> <p>AO3: Analysis and evaluation of the use of questionnaires in psychological research is effective. Any conclusions drawn are sound and fully expressed.</p> <p>Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.</p>
2 Clear	2–3	<p>AO2: Reasonable application of knowledge and understanding of evaluation of questionnaires to the investigation into the use of study lessons.</p> <p>AO3: There may be some effective analysis and evaluation of the use of questionnaires in psychological research. There may be an attempt to draw conclusions.</p> <p>Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning, and is clear, generally coherent and focused although structure may lack some logic.</p>
1 Basic	1	<p>AO2: Limited application of knowledge and understanding of evaluation of questionnaires to the investigation into the use of study lessons.</p> <p>AO3: Analysis and evaluation of the use of questionnaires in psychological research is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present.</p> <p>Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.</p>
0	0	No relevant content.

Possible content

AO2

- Students may have reported less time chatting to friends/more time working than they actually did to present themselves in a positive way.
- Students may have been unsure about how to answer a specific question. For example, should chatting about work have been recorded as time spent chatting or working?
- It may have been only the students who spent most of their study lessons working who completed and returned the questionnaire.

AO3

- People may provide socially desirable responses to the questions rather than truthful ones to try to gain social approval.
- Questionnaires are a quick and easy way to collect lots of information so they are reasonably cheap for a researcher to use.
- As questionnaires are often completed anonymously, the researcher is more likely to gain truthful responses than might be possible using more public self-report methods like interviews.
- There is no way to check that the data provided by participants in questionnaires is accurate. This means the data may not be valid.
- When filling in a questionnaire, respondents may be unable to ask the researcher for clarification of the questions. For example, if they do not understand a specific question the respondent may not give a valid response to it.
- Only a certain type of person may agree to fill in a questionnaire, such as a person with strong opinions about the issue the questionnaire is investigating. Therefore, the results may not be generalisable to everyone.

Credit other relevant evaluation.

NOTE: Credit relevant AO2 embedded within AO3 statements.