GCSE
PSYCHOLOGY
8182/1

Paper 1 Cognition and Behaviour

Mark scheme

June 2024

Version: 1.1 Final

2 4 6 G 8 1 8 2 / 1 / M S

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.

No student should be disadvantaged on the basis of their gender identity and/or how they refer to the gender identity of others in their exam responses.

A consistent use of 'they/them' as a singular and pronouns beyond 'she/her' or 'he/him' will be credited in exam responses in line with existing mark scheme criteria.

Further copies of this mark scheme are available from aqa.org.uk

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, i.e. 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	One factor that can affect the accuracy of memory is context. Which **two** of the following are most likely to occur due to context? Shade **two** boxes. **[2 marks]**

Marks for this question: AO2 – 2 marks

Answers:
B (We cannot remember information during a class test because we revised for the test at home.)
E (We see the school librarian in the local supermarket and cannot remember his name.)

02	**Table 1** includes some of the main features of the multi-store model of memory. Three main features are missing from the table. Complete all **three** missing parts of **Table 1**. Write your answers in the correct spaces. **[3 marks]**

Marks for this question: AO1 – 3 marks

Memory store	Coding	Capacity	Duration
Sensory	The same way it is received from the senses	Very large	**Less than one second**
Short term	**(Mainly) acoustic**	7 +/– 2 items	Up to 30 seconds
Long term	Mainly semantic	**Unlimited**	Lasting up to a lifetime

NOTE: For duration of sensory memory, accept specific durations and ranges below 1 second (e.g. 0.5–0.8 seconds) and other appropriate forms of words.

NOTE: If the candidate has written more than one answer within a box, **only** mark the **first one**.

03	Explain what is meant by the 'primacy effect' in recall. **[2 marks]**

Marks for this question: AO1 – 2 marks

Up to **2 marks** for an explanation of the primacy effect.

2 marks: a clear and detailed explanation.
1 mark: a limited or muddled explanation.

Possible content

- Words that appear first in a list are more likely to be recalled than those in the middle of a list.
- More of the first information received is recalled than information received later.

Credit other relevant content.

NOTE: To be considered clear and detailed, reference to first information **and** subsequent information/middle of list must be made.

04.1	Write two fifths as a decimal. **[1 mark]**

Marks for this question: AO2 – 1 mark

1 mark for the correct answer:

0.4

NOTE: If the answer line contains more information than just the answer, mark in the following way:

- If the information appears to be workings, then mark the part that appears to be the answer.
- If all of the information appears to be alternative answers, mark the first answer.

04.2	There were 200 participants in the study. Calculate how many participants did **not** describe details of the wedding. Show your workings. **[3 marks]**

Marks for this question: AO2 – 3 marks

3 marks for the correct answer.

120

2 marks for correct workings ONLY.

1 – 0.4 = 0.6
0.6 × 200

OR

1 – 2/5 = 3/5
3/5 × 200

1 mark for some correct workings.

e.g. 1 – 0.4 = 0.6

OR

e.g. 5/5 – 2/5

NOTE: Accept other correct workings (e.g. 0.4 × 200 = 80 then 200 – 80 = 120).

04.3	The researcher claimed that his report on the study also contained qualitative data. Use the description of the study to justify the researcher's claim. **[2 marks]**

Marks for this question: AO3 – 2 marks

Up to **2 marks** for a justification of the researcher's claim that the report also contained some qualitative data.

2 marks: a clear and accurate justification.
1 mark: a limited or muddled justification.

Possible content

- Because qualitative data are in the form of words he could claim the data are qualitative because he has collected data in words during the discussions with the participants.

Credit other relevant content.

NOTE: The command term 'justify' requires answers to 'support the case with evidence'. Therefore, answers that **only** give a definition of qualitative data are to be considered as limited.

NOTE: Reference to detail / depth of data is not creditworthy as qualitative data does not always have more detail /depth than quantitative data.

04.4	Ivan was a participant in the study. The researcher asked Ivan about a primary school camping trip to Snowdonia. Ivan remembered that Snowdonia is in Wales. He also recalled celebrating his best friend's birthday during the trip and learning to paddle a canoe. As an adult, he still enjoys paddling a canoe on a nearby lake. Episodic, procedural and semantic are different types of long-term memory. Identify **one** example of **each** type from Ivan's discussion about his school trip. Write your answers in the correct spaces. **[3 marks]**

Marks for this question: AO2 – 3 marks

1 mark for a correct response for episodic memory.
1 mark for a correct response for procedural memory.
1 mark for a correct response for semantic memory.

Possible content

- Episodic – He celebrated his best friend's birthday; Ivan remembered going on a camping trip/to Snowdonia.
- Procedural – Paddling a canoe.
- Semantic – Snowdonia is in Wales.

Credit other relevant responses.

05	The theory of reconstructive memory states that people recreate their memories by actively using what they already know and believe about the world. Describe **and** evaluate **one** study that has investigated reconstructive memory. **[9 marks]**

Marks for this question: AO1 – 4 marks and AO3 – 5 marks

Level	Marks	Description
3 Detailed	**7–9**	AO1: Relevant knowledge and understanding of one study that has investigated reconstructive memory is accurate with detail. AO3: Analysis and evaluation of one study that has investigated reconstructive 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.
2 Clear	**4–6**	AO1: Relevant knowledge and understanding of one study that has investigated reconstructive memory is present but there are occasional inaccuracies/omissions. AO3: There may be some effective analysis and evaluation of one study that has investigated reconstructive memory. There may be an attempt to draw conclusions. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning, and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1–3**	AO1: Knowledge and understanding of one study that has investigated reconstructive memory is present but limited. AO3: Analysis and evaluation of one study that has investigated reconstructive memory is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present. 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

AO1

- One study that has investigated reconstructive memory is Bartlett's 'War of the Ghosts' study.
- The study investigated how memory for an unfamiliar story is affected by cultural expectations **or** to see how memory is reconstructed.
- British participants were given a Native American story called 'War of the Ghosts'.
- 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.
- Bartlett found that participants remembered the key themes in the story. However, the story was shortened when it was retold and some parts were omitted.
- Participants altered some details of the story to fit in with their own cultural experiences. For example, they changed 'canoes' to 'boats'.
- Bartlett concluded that how stories are remembered depends on existing cultural knowledge or schemas.

AO3

- 'War of the Ghosts' was an unfamiliar and confusing story which may have caused participants to recall it inaccurately. Other research studies have shown that people often retell familiar events more accurately.
- Bartlett's method in which he asked participants to retell a story is a more meaningful way of testing memory than asking participants to learn word lists. This is because retelling stories is something we do in everyday life. This increases the validity of his findings.
- Bartlett's results have helped us to understand that memories are reconstructed because people try to add meaning when they recall events. This explains why eyewitnesses' accounts may be inaccurate because recall can be affected by beliefs and expectations.
- Bartlett analysed the recalled stories so the study may have shown researcher bias. This may reduce the validity of the findings.
- The sample was limited to students of English at Cambridge University so it may not be appropriate to generalise the findings to a wider group of people.
- The method was not carried out in a very controlled way, there were few standardised procedures and instructions about what was required were not very clear. It has been found that when participants are told from the beginning of the experiment that recall is important / going to be measured, then recall is more accurate.

Credit other relevant content.

Credit other studies that have investigated reconstructive memory (e.g. Allport and Postman 1947, Brewer and Tryens 1981).

NOTE: Description and/or evaluation of the theory of reconstructive memory rather than a research study should not receive credit.

Section B

Perception

06	Name **one** binocular depth cue. **[1 mark]**

Marks for this question: AO1 – 1 mark

1 mark for a correct name of **one** binocular depth cue.

Correct answers:

- convergence
- retinal disparity.

NOTE: If the candidate has written more than one answer, **only** mark the **first one**.

07	Jess is travelling by train and has a window seat. She likes to watch the trees and buildings pass by through the window. Explain why the speed of the passing trees and buildings helps Jess to perceive how far away they are. Use your knowledge of motion parallax. **[4 marks]**

Marks for this question: AO1 – 2 marks and AO2 – 2 marks

Level	Marks	Description
2 Clear	**3–4**	AO1: Clear and accurate knowledge of motion parallax with some detail. AO2: Clear and accurate application of knowledge and understanding of motion parallax. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, and is clear, coherent and focused.
1 Basic	**1–2**	AO1: Limited or muddled knowledge of motion parallax is present. AO2: Limited or muddled application of knowledge and understanding of motion parallax. 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

AO1
- When we are moving, the visual images we receive change.
- Objects that are close to us appear to move quickly in front of our eyes.
- Objects that are further away from us appear to move slower.
- We use this information to judge how far away an object is. This is known as motion parallax.
- Motion parallax is a monocular depth cue.

AO2
- Jess perceives that the trees and buildings are nearby when they appear to move quickly.
- Jess perceives that the trees and buildings are further away when they appear to move more slowly.
- The slower the speed of the trees and buildings, the further the distance.

Credit other relevant content.

NOTE: The AO1 may be embedded in the AO2 or separate, both are equally acceptable.

NOTE: Answers must contain some understanding that objects only appear to move (rather than simply stating the 'objects move') in order to be awarded a mark of 4.

NOTE: To be considered relevant, the answer must contain more than just the information that is already given in the stem . Reference to just 'passing trees and buildings' on its own is not creditworthy.

08	Describe **one** result from Gilchrist and Nesberg's study into the effects of motivation on perception. **[2 marks]**

Marks for this question: AO1 – 2 marks

Up to **2 marks** for a description of **one** result from Gilchrist and Nesberg's study.

2 marks: a clear and accurate description.
1 mark: a limited or muddled description.

Possible content

- As the participants in the experimental group got hungrier, they judged the pictures of food to be brighter.
- The food-deprived participants altered the lighting in a way that suggested they perceived the pictures of the food to be brighter.
- The food-deprived participants judged the pictures of food to be brighter than they were.
- The food-deprived participants judged the pictures of food to be brighter than the control group did.

Credit other relevant content.

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

09	Outline **one** strength and **one** weakness of Gilchrist and Nesberg's study into the effects of motivation on perception. **[4 marks]**

Marks for this question AO3 – 4 marks

Up to **2 marks** for an outline of one strength of Gilchrist and Nesberg's study.

2 marks: a clear and accurate outline.
1 mark: a limited or muddled outline.

NOTE: Answers that are only a generic strength are considered to be limited (MAX 1 mark).

PLUS

Up to **2 marks** for an outline of one weakness of Gilchrist and Nesberg's study.

2 marks: a clear and accurate outline.
1 mark: a limited or muddled outline.

NOTE: Answers that are only a generic weakness are considered to be limited (MAX 1 mark).

Possible content

Strengths
- The study was carefully controlled, using the same pictures and timings for each condition. This means that the study can be easily replicated.
- Similar studies have found similar results, increasing the validity/reliability of Gilchrist and Nesberg's study. For example, a study by Sanford (1936) showed ambiguous images (such as a brown blob) to participants. Participants who were hungry were more likely to perceive the brown blob as a hamburger.
- The ecological validity of the study was increased by the fact that some participants really were hungry.

Weaknesses
- Participants were required to go without food for 20 hours. This means that the study may be unethical as the participants could feel some discomfort.
- Researchers need to ensure that the participants leave the experiment in the same state that they start it. Going without food for 20 hours would not allow this to be the case.
- The study does not reflect an everyday situation. The results may have been different if real food was used rather than pictures.
- The participants may have guessed the aim of the study. They may have exaggerated their responses to the brightness of the pictures to help the researcher.

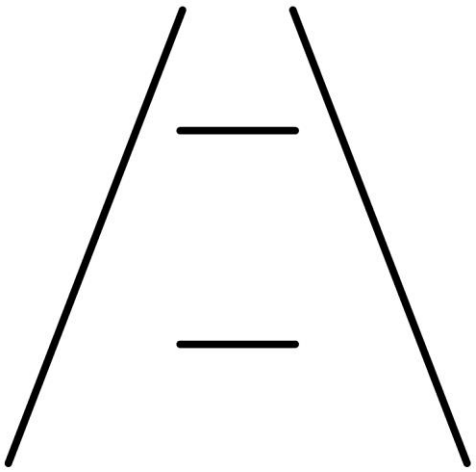
Credit other relevant content.

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

10.1	Sketch the Ponzo illusion. Use the space below for your sketch. **[1 mark]**

Marks for this question: AO1 – 1 mark

1 mark for a correct sketch of the Ponzo illusion.



NOTE: The command term 'sketch' only requires the illusion to be 'roughly' drawn. Therefore, 100% accuracy is **not** required for the length or angle of the lines BUT it does need to be sketched the correct way up (in order to be an illusion).

NOTE: To be correct, the sketch must include two short inner horizontal lines and two longer outer diagonal lines.

10.2	Outline how psychologists explain the Ponzo illusion. **[3 marks]**

Marks for this question: AO1 – 3 marks

Up to **3 marks** for a relevant explanation of the Ponzo illusion.

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

Possible content

- The illusion occurs due to misinterpreted depth cues.
- In the Ponzo illusion, we apply the rule of size constancy when it should not be used.
- The converging lines give us the impression of distance, similar to a road or railway track. This is the depth cue of linear perspective, where the two outer lines create an illusion of distance.
- We mentally scale up the inner top line, because it is perceived as further away, so that it appears longer than it actually is.

Credit other relevant content.

11.1	Identify the dependent variable in this study. **[2 marks]**

Marks for this question: AO2 – 2 marks

Up to **2 marks** for the correct identification of the dependent variable.

2 marks: a clear identification of an operationalised dependent variable.
1 mark: a limited identification of the dependent variable.

Examples

- (Estimated) distance in metres (2 marks).
- Distance (1 mark).

Credit other relevant content.

NOTE: Answers that appear to be just an aim, results or conclusion, are NOT creditworthy.

NOTE: 'The number of times the distance was correctly estimated' is NOT creditworthy. (This is a result.)

11.2	The psychologist claimed that the results of this study allowed conclusions to be drawn about the influence of past experience on perception. Outline **one** conclusion that the psychologist could draw. **[2 marks]**

Marks for this question: AO3 – 2 marks

Up to **2 marks** for an outline of one appropriate conclusion the psychologist could draw.

2 marks: a clear and detailed conclusion.
1 mark: a limited or muddled conclusion.

Examples

- Past experience is important in perception because previous knowledge and experience of objects help us to correctly perceive distance (2 marks).
- Past experience affects perception and therefore supports Gregory's constructivist theory of perception (2 marks).
- We are more likely to correctly perceive distance when objects are familiar to us (2 marks).
- Past experience affects perception (1 mark).
- Familiarity with an object affects our perception (1 mark)

Credit other relevant content.

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

12	You have been asked to investigate the effect of emotion on perception. Explain how you would design an experiment to do this. You need to include the following information in your answer: • what you would ask the participants to do **and** what data you would collect • the experimental design you would choose **and** why this would be suitable • the results you would expect to find from your experiment including both conditions of the independent variable. **[6 marks]**

Marks for this question AO2 – 4 marks and AO3 – 2 marks

AO2
1 mark for description of a suitable task.

NOTE: For a task to be suitable it must 1) include a sense of experimental conditions **and** 2) be investigating the effect of emotion on perception.

NOTE: If the task is not suitable, no marks can be awarded for data collection.

PLUS

1 mark for description of data collected.

PLUS

1 mark for identifying an experimental design.

Possible content.

- independent groups
- repeated measures
- matched pairs.

PLUS

1 mark for an appropriate justification of experimental design chosen.

NOTE: The experimental design marks can be awarded without a suitable task being given.

AO3
2 marks: a clear and accurate description of the expected results with both conditions of the IV.
1 mark: a limited or muddled description of the expected results.

NOTE: If an answer describes an experiment that is <u>not</u> investigating the effect of emotion on perception, the marks for the expected results can still be credited.

NOTE: If a student only describes a known experiment rather than basing their design on a known experiment (MAX 1 mark).

Section C

Development

13	Which **one** of the following is a feature of Willingham's ideas about learning? Shade **one** box. **[1 mark]**

Marks for this question: AO1 – 1 mark

Answer:
B (Learning is most effective when the teaching style used matches the content of the lesson.)

14	Briefly evaluate Dweck's Mindset Theory of learning. **[3 marks]**

Marks for this question: AO3 – 3 marks

Up to **3 marks** for a brief evaluation of Dweck's Mindset Theory of learning.

3 marks: a clear and detailed evaluation.
2 marks: a limited evaluation.
1 mark: a very limited/muddled evaluation.

Possible content

- One strength of mindset theory is that people can change their mindset and this can be used to improve performance in different contexts such as at school, in sports or in the workplace.
- There is evidence to support the idea that a growth mindset can improve performance.
- Dweck's research showed that teaching children to develop a growth mindset in schools increased their motivation and grades.
- Placing too much emphasis on 'having the correct mindset' potentially blames children for their own underperformance, rather than it being caused by lack of resources or poor-quality teaching.

Credit other relevant content.

NOTE: Answers based on the premise that a **weakness** of Dweck's theory is 'praise is damaging' are not creditworthy. This is because Dweck herself said in various written materials that some forms of praise can cause damage. The weight of current research evidence does NOT support the idea that ALL praise is damaging. However, it does support the idea that some forms of praise can be damaging, and therefore this is support for Dweck's theory.

15	Hassan is 8 years old and has asked his sister Rubi for help with his maths homework. Rubi is 13 years old. Rubi is able to solve the maths problems in her head, but Hassan has to count using his fingers. Explain why Hassan **and** Rubi use different methods when solving maths problems. Use your knowledge of Piaget's stage theory of cognitive development. **[6 marks]**

Marks for this question: AO1 – 3 marks and AO2 – 3 marks

Level	Marks	Description
3 Detailed	**5–6**	AO1: Relevant knowledge and understanding of Piaget's theory of cognitive development is accurate with detail. AO2: Clear application of knowledge and understanding of Piaget's theory of cognitive development to explain the reasoning methods of Hassan **and** Rubi. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning and is clear, coherent and focused.
2 Clear	**3–4**	AO1: Relevant knowledge and understanding of Piaget's theory of cognitive development is present but there are occasional inaccuracies/omissions. AO2: Reasonable application of knowledge and understanding of Piaget's theory of cognitive development to explain the reasoning methods of Hassan **and/or** Rubi. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1–2**	AO1: Knowledge and understanding of Piaget's theory of cognitive development is present but limited. AO2: Limited application of knowledge and understanding of Piaget's theory of cognitive development to explain the reasoning methods of Hassan **and/or** Rubi. 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

AO1
- Piaget suggested that children develop their intellect/understanding of their world in stages.
- At approximately 7–11 years of age, children are in the concrete operational stage of development.
- During this stage, children struggle to reason about abstract ideas and find it hard to imagine situations they cannot see.
- At approximately 11+ years, children are in the formal operational stage of development.
- During this stage, children are able to reason about abstract ideas and approach tasks in a systematic way.

AO2
- Hassan is 8 years old so he is in the concrete operational stage of development.
- Hassan is only able to solve maths problems by counting on his fingers because at this stage, children can only reason using objects they can see.
- Rubi is 13 years old so she is in the formal operational stage.
- Rubi is able to solve maths problems in her head because at this stage children can reason about situations they cannot see.

Credit other relevant content.

NOTE: The AO1 may be embedded in the AO2 or separate, both are equally acceptable.

NOTE: Answers that only address Hassan or Rubi cannot be considered to be a Level 3 answer.

NOTE: To be considered relevant, the answer must contain more than just the information that is already given in the stem. Reference to 'Rubi is able to solve the maths problems in her head, but Hassan has to count using his fingers' only, is not creditworthy.

16	A researcher wants to investigate the most common behaviours displayed by children during the sensorimotor stage of development. The researcher and an assistant decide to carry out a controlled observation study. One behaviour being observed is 'shaking a rattle'. Describe how you would carry out this controlled observation study. You need to: • identify a suitable age range of the target population • suggest **two** suitable behaviour categories that could be used during the observation. **Do not** include 'shaking a rattle' as one of your categories • briefly describe **two** ways the researcher could make sure there is interobserver reliability • identify **one** way the researcher could make sure her study is carried out in an ethical manner. **[6 marks]**

Marks for this question AO2 – 6 marks

1 mark for identifying an age range between 0 and 2 years.

PLUS

1 mark for the identification of each suitable category of behaviour (MAX 2 marks).

Possible content

Sucking thumb, rooting and sucking, kicking legs, looking for an object that has been hidden from view, throwing/dropping a ball/toy, clapping, pointing.

NOTE: Do not credit examples of behaviour that would only be displayed during later stages of development.

NOTE: Do not credit 'shaking a rattle' as a suitable category of behaviour.

PLUS

1 mark each for any of the following ways to ensure interobserver reliability (MAX 2 marks).

- Use the same record sheet to observe and record behaviour.
- Observe the same group at the same time.
- Observers should compare their data (if there are only two observers a correlation can be used to work out the similarity level).
- If the level of similarity is not high, the categories of behaviour need to be changed and the observation repeated.

Credit other relevant ways.

NOTE: To be considered creditworthy, the answer must contain more information than is already given in the stem. Reference to just 'the researcher and an assistant carrying out an observation' together, is not creditworthy.

PLUS

1 mark for a way to make sure the study is carried out in an ethical manner that is suitable, and fits the study.

Possible content

- Ask parents to sign a consent form.
- Be ready to stop the observation study if the child becomes distressed.
- Do not refer to the children by name when writing the report.

Credit other relevant content.

17	Psychologists have developed many ways to study the brain. A psychologist called Penfield used a method called the Montreal procedure to study the cortex. The method involved gently stimulating parts of the cortex with electricity. Participants were asked to describe any sensations that they experienced. Outline early brain development. Discuss the appropriateness of Penfield's method to investigate the brain before birth **and** during the early years of life. **[9 marks]**

Marks for this question: AO1 – 4 marks and AO3 – 5 marks

Level	Marks	Description
3 Detailed	**7–9**	AO1: Relevant knowledge and understanding of early brain development is accurate with detail. AO3: Analysis and discussion of the appropriateness of Penfield's method to investigate the brain before birth **and** during the early years of life 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.
2 Clear	**4–6**	AO1: Relevant knowledge and understanding of early brain development is present but there are occasional inaccuracies/omissions. AO3: There may be some effective analysis and discussion of the appropriateness of Penfield's method to investigate the brain before birth **and/or** during the early years of life. There may be an attempt to draw conclusions. Relevant terminology is usually used. The answer frequently demonstrates substantiated reasoning, and is clear, generally coherent and focused although structure may lack some logic.
1 Basic	**1–3**	AO1: Knowledge and understanding of early brain development is present but limited. AO3: Analysis and discussion of the appropriateness of Penfield's method to investigate the brain before birth **and/or** during the early years of life is of limited effectiveness or may be absent. Any attempts to draw conclusions are not always successful or present. 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

AO1

- Brain development begins during the 3rd week of pregnancy.
- The foetal brain and spine begin as a neural tube. During the 4th week of pregnancy, the neural tube begins to divide into a spinal cord, forebrain, midbrain and hindbrain.
- During the 6th week of pregnancy, the forebrain divides to form the cortex (the outer covering of the brain where mental processing takes place) and the thalamus (responsible for sensory processing and sending/receiving sensory messages to/from other parts of our brain).
- By the 15th week of pregnancy, the cerebellum and part of the brain stem has formed from the hindbrain. The midbrain also develops into part of the brain stem.
- The cerebellum coordinates our movement and balance, as well as having a role in language and emotion. The brain stem controls our basic autonomic functions such as breathing and digestion.
- The brain is fully formed by the 6th month of pregnancy, although it has not reached its full size yet. At birth, a baby's brain is about a quarter of the size of the average adult brain. It doubles in size in the first year and keeps growing to about 80% of adult size by age 3.
- Research suggests that brain function continues to develop long after birth. It may not be fully developed until a person reaches their mid-twenties or even thirties.

NOTE: If answers only address parts of the brain and not early brain development, the AO1 component can only be considered to be Level 1/Basic

AO3

- Penfield's original investigations using the Montreal procedure took place during open brain surgery whilst treating patients for epilepsy. It would be very difficult to carry out the Montreal procedure on an unborn baby still in the womb.
- An unborn baby would be unable to give consent for the procedure to take place. Similarly, a young child in the early years of life would not understand the implications of the procedure so would also not be able to fully consent.
- The cortex continues to develop throughout childhood and early adulthood. Therefore, using Penfield's method to study the function of a young child's cortex would be inappropriate.
- The Montreal procedure is invasive. Modern brain scanning techniques (such as an fMRI) would be more appropriate and ethical for studying the functions of the brain in children.
- During Penfield's original investigations, participants were asked to describe the sensations they were experiencing during the procedure. It is doubtful that young children would be able to adequately put their experiences into words.
- Adult participants in the original studies described memories from throughout their lives. Child participants would not have the same extensive catalogue of memories to draw on, making Penfield's method inappropriate for them.

Credit other relevant content.

NOTE: If the candidate has discussed the appropriateness of the procedure **ONLY** before birth **OR** during the early years of life the AO3 component can only be considered to be Level 1/Basic.

Section D

Research Methods

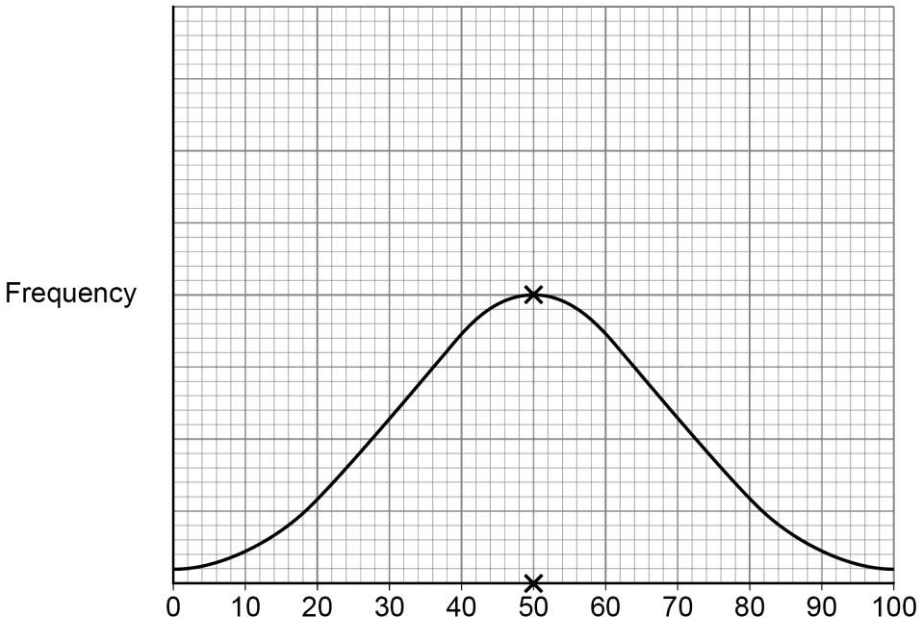
18	Which of the following is a reason why the range might be calculated in psychological research? Shade **one** box. **[1 mark]**

Marks for this question: AO1 – 1 mark

Answer:
D (To tell us how widely dispersed the scores are within a set of data)

19	Sketch the shape of a normal distribution on the graph paper. Clearly label where the mean score would be on your sketch. **[2 marks]**

Marks for this question: AO1 – 2 marks



1 mark for a correct sketch of a normal distribution curve (i.e. bell shaped).

PLUS

1 mark for correct labelling of the mean score (i.e. at a point that indicates the middle of the bell).

NOTE: The mean score can **only** be credited if a normal distribution curve has been sketched.

NOTE: The label may be on the curve or on the x axis, both are equally acceptable.

NOTE: The command term 'sketch' only requires the normal distribution curve to be 'roughly' drawn or plotted. Therefore, 100% accuracy is **not** required for the sketch mark.

20.1	Write a suitable **alternative** hypothesis for this study. **[2 marks]**

Marks for this question: AO2 – 2 marks

2 marks: there must be both conditions of the IV and a clear DV which makes the statement operational.
1 mark: the hypothesis lacks some clarity.

Examples

- There will be a difference in the number of people visiting the park in the 7 days before and after the app is introduced (2 marks).
- More people will visit the park in the 7 days after the introduction of the app than in the 7 days before (2 marks).
- Fewer people will visit the park in the 7 days after the introduction of the app than in the 7 days before (2 marks).
- The introduction of the app will affect the number of people visiting the park (1 mark).
- More people will visit the park after the introduction of the app (1 mark).
- Fewer people will visit the park after the introduction of the app (1 mark).

NOTE: Do not accept null hypotheses, aims, questions, correlational statements or statements of the results (e.g. was/did/used).

Credit other suitable alternative hypotheses.

20.2	Identify **one** extraneous variable that might affect the results of this experiment. **[1 mark]**

Marks for this question: AO2 – 1 mark

1 mark for a suitable extraneous variable.

Possible content

Weather, school holidays, time of year.

Credit other suitable extraneous variables.

NOTE: If the candidate has identified more than one extraneous variable, **only** mark the **first** one.

20.3	State the number of people who visited the park on the Tuesday (Tu) **after** the DinoCatch app was introduced. **[1 mark]**

Marks for this question: AO2 – 1 mark

1 mark for the correct answer:

40

20.4	Outline **two** conclusions that can be drawn from the data in the bar chart. **[2 marks]**

Marks for this question: AO3 – 2 marks

1 mark for each suitable conclusion (MAX 2 marks).

Possible content

- DinoCatch is a popular app.
- The app has motivated people to exercise.
- The introduction of the app affected people's likelihood of visiting the park.

Credit other relevant content.

NOTE: If the candidate has written more than **two** conclusions, award marks to the **two** that are clearest and most effective.

20.5	Use the graph paper to sketch a scatter diagram to show the results given in **Table 3**. Provide a suitable title for your scatter diagram **and** a label for the **x** axis. **[4 marks]**

Marks for this question: AO2 – 4 marks

Up to **4 marks** for drawing and labelling a scatter diagram.

- Drawing a correct graph type (1 mark).
- Informative title (1 mark) (e.g. Scatter diagram to show the relationship between number of hours spent outdoors playing DinoCatch and Mood Improvement Rating).
- Correct labelling of the x axis and appropriate scaling of both axes (1 mark).
- Correct plotting of the results (1 mark).

NOTE: The command term 'sketch' only requires the scatter diagram to be 'roughly' drawn or plotted. Therefore, 100% accuracy is **not** required for the sketch mark.

NOTE: For a title to be considered suitable, it needs to have a reference to 'relationship' (correlation, comparison etc) and an appropriate reference to both of the variables.

20.6	Estimate the mood improvement rating for someone who played the app for 20 hours. Use the results from the study to help you. **[1 mark]**

Marks for this question: AO2 – 1 mark

1 mark for an appropriate estimate between 7.5 and 9.5.

Accept numbers (e.g. 8.5) or ranges (e.g. 8–8.5).

20.7	The researcher concluded that playing DinoCatch **caused** participants' mood to improve. Suggest why the researcher is **not** correct to draw this conclusion. **[2 marks]**

Marks for this question: AO3 – 2 marks

Up to **2 marks** for suggestion(s) of why the researcher is not correct to draw this conclusion.

2 marks: a clear and accurate suggestion(s).
1 mark: a limited or muddled suggestion(s).

Possible content

- We cannot determine cause and effect from a correlation.
- These results show a relationship only/positive correlation.
- A third variable may have caused participants to play DinoCatch and improved their mood (e.g. sunny weather).

Credit other relevant content.

NOTE: Suggestions that do not address the described scenario cannot be considered to be clear and accurate (MAX 1).

21.1	Explain what is meant by the psychological term 'sample'. **[2 marks]**

Marks for this question: AO1 – 2 marks

Up to **2 marks** for a definition of the term 'sample':

2 marks: a clear and accurate definition.
1 mark: a limited or muddled definition.

Possible content

- A (small) group of people taken from the target population and who are used by the researchers in their investigation.

NOTE: To be considered clear and accurate, reference to 'a group of people' **plus** 'taken from the target population' **or** 'are used by the researchers in their investigation/that take part in the study' must be made.

Credit other relevant wording.

21.2	Name **one** sampling method that psychologists might use in their research. **[1 mark]**

Marks for this question: AO1 – 1 mark

1 mark for naming **one** relevant sampling method.

Possible content

- Random
- Opportunity
- Systematic
- Stratified

Accept other creditworthy answers such as volunteer, self-selected, convenience, snowball.

NOTE: If the candidate has written more than one answer, **only** mark the **first one**.

22	Outline **and** evaluate the use of interviews in psychological research. **[6 marks]**

Marks for this question: AO1 – 3 marks and AO3 – 3 marks

Level	Marks	Description
3 Detailed	**5–6**	AO1: Relevant knowledge and understanding of the use of interviews in psychological research is accurate with detail. AO3: Analysis and evaluation of the use of interviews in psychological research is effective. Relevant terminology is used consistently throughout. The answer demonstrates a high level of substantiated reasoning, is clear, coherent and focused.
2 Clear	**3–4**	AO1: Relevant knowledge and understanding of the use of interviews in psychological research is present but there are occasional inaccuracies/omissions. AO3: There may be some effective analysis and evaluation of the use of interviews in psychological research. Relevant terminology is occasionally used. The answer occasionally demonstrates substantiated reasoning, but may lack clarity, coherence, focus and logical structure.
1 Basic	**1–2**	AO1: Knowledge and understanding of the use of interviews in psychological research is present but limited. AO3: Analysis and evaluation of the use of interviews in psychological research is of limited effectiveness or may be absent. Relevant terminology may not be used at all or may be muddled.
0	**0**	No relevant content.

Possible content

AO1

- An interview is a research method in which a researcher collects data by asking questions (open/closed) directly to the respondent.
- This can be carried out face-to-face, over the telephone or via video link.
- There are various types of interview, including structured, semi-structured and unstructured.
- In a structured interview, the questions are pre-set and every interviewee will be asked the same questions in the same order.
- In a semi-structured interview, some of the questions are pre-set but the researcher can also ask follow-up questions.
- In an unstructured interview, the interviewer may have a few questions prepared in advance, but generally new questions are developed based on the answers given. Therefore, each interviewee answers a unique set of questions.

AO3

- A lot of information can be gathered from interviews, particularly during an unstructured interview.
- The data gathered is often qualitative and can be detailed and insightful.
- Interviews are useful when collecting data from people who cannot write or express themselves well on paper.
- Data from structured interviews can be collated and easily analysed.
- The researcher cannot be sure that an interviewee is always telling the truth during an interview.
- During structured interviews, the interviewer cannot ask follow-up questions, so important material may be missed.
- A semi-structured interview, allows researchers to address certain topics in detail as well as allowing participants to elaborate on their answers.
- In unstructured interviews, irrelevant data may be collected which is time consuming and difficult to analyse.

Credit other relevant content.