

INTERNATIONAL AS PSYCHOLOGY PS02

Unit 2 Biopsychology, Development and Research Methods 1

Mark scheme

June 2026

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.

Further copies of this mark scheme are available from www.oxfordaqa.com

Copyright information

OxfordAQA retains the copyright on all its publications. However, registered schools/colleges for OxfordAQA are permitted to copy material from this booklet for their own internal use, with the following important exception: OxfordAQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Copyright © 2026 OxfordAQA International Examinations and its licensors. All rights reserved.

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.

Indicative 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 Indicative 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.

Section A: Biopsychology

Total for this section: 30 marks

Question	Marking Guidance	Total Marks
01	<p>Figure 1 is a diagram showing synaptic transmission.</p> <p>Complete Figure 1 by writing the names of the structures in the boxes provided.</p> <p>Award 1 mark for each of the following:</p> <p>A Neurotransmitter</p> <p>B Receptor/receptor site</p> <p>C Synapse/synaptic cleft/synaptic gap</p> <p>Accept alternative wording.</p>	<p>3</p> <p>AO1 = 3</p>

Question	Marking Guidance	Total Marks
02	<p>Which one of the statements below does not describe a function of a relay neuron?</p> <p>Shade one box only.</p> <p>Answer key:</p> <p>B – To detect stimuli from the environment.</p>	<p>1</p> <p>AO1 = 1</p>

Question	Marking Guidance	Total Marks															
03	<p>Describe the fight or flight response.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Fight or flight response is part of the autonomic nervous system (ANS). • Higher brain centres (cortex and limbic system) carry out an appraisal of a situation and identify it as potentially dangerous. • This activates the sympathetic branch of the ANS. • The somatic nervous system (SNS) sends a neural message to the adrenal medulla to instruct it to increase the release of adrenaline and noradrenaline into the bloodstream. • Adrenaline speeds up heart rate, constricts blood vessels and raises blood pressure. • Hypothalamus is instructed to stimulate the release of ACTH (adrenocorticotrophic hormones) from the pituitary gland. • ACTH stimulates the release of corticosteroids (cortisol and corticosterone) from the adrenal cortex into the bloodstream. • These physiological changes enable a person to escape from or face a perceived threat. There is energy for running or the body is prepared to minimise blood loss. • A negative feedback loop via the hypothalamus monitors the hormone levels. • Energy reserves are released, leading to raised levels of glucose and fatty acids. <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>3</td><td>Knowledge of the fight or flight response is detailed. The answer is clear with appropriate use of specialist terminology.</td><td>5–6</td></tr> <tr> <td>2</td><td>Knowledge of the fight or flight response is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.</td><td>3–4</td></tr> <tr> <td>1</td><td>Knowledge of the fight or flight response is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	3	Knowledge of the fight or flight response is detailed. The answer is clear with appropriate use of specialist terminology.	5–6	2	Knowledge of the fight or flight response is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4	1	Knowledge of the fight or flight response is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO1 = 6</p>
Level	Description	Marks															
3	Knowledge of the fight or flight response is detailed. The answer is clear with appropriate use of specialist terminology.	5–6															
2	Knowledge of the fight or flight response is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4															
1	Knowledge of the fight or flight response is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2															
0	No creditable content.	0															

Question	Marking Guidance	Total Marks
04	<p>Saeed is 54 years old and recently suffered damage to the front of his left hemisphere. Saeed can understand what other people say and knows what he wants to say. However, when Saeed speaks, it is in short, broken phrases, rather than complete sentences.</p> <p>Describe and evaluate research into localisation of function. Refer to Saeed in your answer.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Specific functions are located in different areas of the brain. • Examples of specialised brain areas, eg the somatosensory cortex is specialised in receiving and processing sensory information and is located in the parietal lobe. • Description of research investigating localisation of function, eg Broca's research demonstrating that the speech production area was in the frontal lobe of (usually) the left hemisphere. • Wernicke's research that the area for understanding language was in the parietal lobe of (usually) the left hemisphere. • Case studies, eg Phineas Gage, Leborgne (Tan), H.M., suggesting particular functions are dealt with by certain brain areas or one hemisphere. • Imaging studies suggesting particular functions are dealt with by certain brain areas or one hemisphere. • Description of Sperry's (1968) split-brain research can be used if it has a focus on localisation of function. • Hemispheric lateralisation can be used to demonstrate localisation of function. <p>Possible application</p> <ul style="list-style-type: none"> • The area damaged in Saeed's left hemisphere is Broca's area, which is responsible for speech production and language expression. • Damage to Broca's area causes difficulties in speech production, which explains why Saeed struggles to form fluent sentences. • However, language comprehension is unaffected (Wernicke area), and that is why Saeed maintains his ability to understand language. <p>Possible evaluation</p> <ul style="list-style-type: none"> • Functions such as language are too complex to be assigned to just one area, and instead involve networks of brain regions. • Support from research studies, eg Sperry's split-brain studies (1965), Broca's case study on 'Tan' (1861). • Issues with generalisation from case studies or from patients with brain damage, eg participants in split-brain research. • Issues with generalisation from studies with small participant numbers. • Issues with generalisation from non-human animals to humans in lesion studies. • Alternative explanations, eg Lashley's (1929) Law of equipotentiality, through his research with rats finding their way through a maze. • Findings from plasticity studies that show compensation by undamaged regions on the opposite hemisphere suggest that localisation of function is not as fixed as some research suggests. 	<p>20</p> <p>AO1 = 8 AO2 = 4 AO3 = 8</p>

Credit other relevant material.		
Level	Description	Marks
4	Knowledge of research into localisation of function is accurate and generally well detailed. Evaluation is effective. Application is appropriate. Minor detail and/or expansion of argument is sometimes lacking. The answer is clear and focused. Specialist terminology is used effectively.	16–20
3	Knowledge of research into localisation of function is evident but there are occasional inaccuracies and/or omissions. There is some effective evaluation. There is some appropriate application. The answer is mostly clear and organised but occasionally lacks focus. Specialist terminology is used appropriately.	11–15
2	Limited knowledge of research into localisation of function is present. Any evaluation and application is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	6–10
1	Knowledge of research into localisation of function is very limited. Evaluation and application is limited, poorly focused or absent. The answer as a whole lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.	1–5
0	No creditable content.	0

Section B: Cognitive Development

Total for this section: 30 marks

Question	Marking Guidance	Total Marks
05	<p>What is meant by equilibration in Piaget’s theory of cognitive development?</p> <p>Award marks as follows: 2 marks for a clear definition of equilibration. 1 mark for a muddled or vague definition of equilibration.</p> <p>Possible content Equilibration is the balance achieved between using existing schemas to assimilate new information and accommodating schemas that do not work.</p> <p>Credit use of an example. Credit alternative wording.</p>	<p>2</p> <p>AO1 = 2</p>

Question	Marking Guidance	Total Marks
06	<p>What is meant by conservation in Piaget’s theory of cognitive development?</p> <p>Award marks as follows: 2 marks for a clear definition of conservation. 1 mark for a muddled or vague definition of conservation.</p> <p>Possible content Conservation is the understanding that quantity remains the same despite changes to the appearance of a substance.</p> <p>Credit use of an example. Credit alternative wording.</p>	<p>2</p> <p>AO1 = 2</p>

Question	Marking Guidance	Total Marks
07	<p>What is meant by object permanence in Piaget’s theory of cognitive development?</p> <p>Award marks as follows: 2 marks for a clear definition of object permanence. 1 mark for a muddled or vague definition of object permanence.</p> <p>Possible content Object permanence is the understanding that objects continue to exist even when they are out of sight.</p> <p>Credit use of an example. Credit alternative wording.</p>	<p>2</p> <p>AO1 = 2</p>

Question	Marking Guidance	Total Marks												
08	<p>Jing, a 5-year-old, takes part in a research study. The researcher shows Jing a set of toy animals.</p> <p>The set includes five dogs and three cats. The researcher asks Jing, “Are there more dogs or more animals in the set?”. Jing replies, “There are more dogs”.</p> <p>Using your knowledge of Piaget’s theory of cognitive development, explain why Jing gave this response.</p> <p>Possible application</p> <ul style="list-style-type: none"> • Jing is 5-years old and therefore in the pre-operational stage (2–7 years) of Piaget’s theory of cognitive development and will struggle with understanding certain logical concepts, such as class inclusion. • The researcher is investigating class inclusion, to see if Jing understands that dogs belong to the overall category of animals as well as the subcategory of dogs. • Jing’s response shows that Jing does not yet understand class inclusion, as Jing is focusing on the smaller subcategory of dogs (as there are more toy dogs than cats), rather than the larger/broader category of animals, not showing an understanding that dogs and cats are also animals. <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>2</td><td>Application of Piaget’s theory of cognitive development to Jing is effective. The answer is clear with appropriate use of specialist terminology.</td><td>3–4</td></tr> <tr> <td>1</td><td>Application of Piaget’s theory of cognitive development to Jing is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	2	Application of Piaget’s theory of cognitive development to Jing is effective. The answer is clear with appropriate use of specialist terminology.	3–4	1	Application of Piaget’s theory of cognitive development to Jing is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>4</p> <p>AO2 = 4</p>
Level	Description	Marks												
2	Application of Piaget’s theory of cognitive development to Jing is effective. The answer is clear with appropriate use of specialist terminology.	3–4												
1	Application of Piaget’s theory of cognitive development to Jing is limited, vague or muddled. Specialist terminology is either absent or inappropriately used.	1–2												
0	No creditable content.	0												

Question	Marking Guidance	Total Marks															
09	<p>Describe Vygotsky's theory of cognitive development.</p> <p>Possible content</p> <ul style="list-style-type: none"> • It emphasises the role of social and cultural factors in cognitive development. • The child develops tools of their own culture, especially language. • It stresses the importance of the role of language in thought – language becomes internalised (about age 8 years) and becomes intellectual (inner) speech. • Children are born with elementary mental functions, which develop into higher mental functions. • The child learns through interaction with older or more knowledgeable others (like an apprentice). • Vygotsky's theory introduced the concept of the 'Zone of Proximal Development,' which is the difference between the actual and potential ability. • This has led to the development of the idea of scaffolding and the role of instruction. • Social interaction allows the child to internalise the perception of the world from the viewpoint of other people. <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>3</td><td>Knowledge of Vygotsky's theory of cognitive development is detailed. The answer is clear with appropriate use of specialist terminology.</td><td>5–6</td></tr> <tr> <td>2</td><td>Knowledge of Vygotsky's theory of cognitive development is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.</td><td>3–4</td></tr> <tr> <td>1</td><td>Knowledge of Vygotsky's theory of cognitive development is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	3	Knowledge of Vygotsky's theory of cognitive development is detailed. The answer is clear with appropriate use of specialist terminology.	5–6	2	Knowledge of Vygotsky's theory of cognitive development is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4	1	Knowledge of Vygotsky's theory of cognitive development is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO1 = 6</p>
Level	Description	Marks															
3	Knowledge of Vygotsky's theory of cognitive development is detailed. The answer is clear with appropriate use of specialist terminology.	5–6															
2	Knowledge of Vygotsky's theory of cognitive development is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4															
1	Knowledge of Vygotsky's theory of cognitive development is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2															
0	No creditable content.	0															

Question	Marking Guidance	Total Marks
10	<p>Explain one strength of Vygotsky's theory of cognitive development.</p> <p>Award marks as follows: 3 marks: the explanation of a strength is detailed. The answer is clear with appropriate use of specialist terminology. 2 marks: the explanation of a strength lacks detail. The answer lacks clarity in places. 1 mark: the explanation of a strength is briefly presented. The answer is very limited, vague and/or muddled.</p> <p>Possible strength</p> <ul style="list-style-type: none"> • Use of evidence to support Vygotsky's theory, eg scaffolding by Wood and Middleton (1975). • Application to education, eg peer tutoring, guided learning. • Guidance and instruction may not always have a positive influence as they may lead to a lack of motivation/independence. • Contrast with Piaget, eg Vygotsky believed (unlike Piaget's notion of readiness) that development could be accelerated to some extent, through the zone of proximal development and collaborative learning. <p>Credit other relevant strengths.</p>	<p>3</p> <p>AO3 = 3</p>

Question	Marking Guidance	Total Marks
11	<p>In an experiment, a researcher is measuring the brain activity of Paolo. When Paolo observes Lucia drinking a glass of water, the researcher measures neural activity in Paolo's brain as if he lifts up the glass and drinks water himself, even though he does not move.</p> <p>Using your knowledge of the mirror neuron system in social cognition, briefly explain Paolo's neural activity.</p> <p>Award marks as follows: 2 marks: for a clear explanation of Paolo's experience. 1 mark: for a muddled or vague explanation of Paolo's experience.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Paolo's mirror neurons are activated when he observes Lucia drinking a glass of water as though he was performing the action himself. • This can be seen by the researcher measuring Paolo's neural activity because the mirror neuron's fire as if he moved himself, regardless of Paolo not moving. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks															
12	<p>Describe the procedure and findings of one Sally-Anne study.</p> <p>Possible content</p> <ul style="list-style-type: none"> Children are shown two dolls, Sally and Anne. The children watch Sally place a marble in a basket and go for a walk. They see Anne take the marble and put it in a box. They see Sally come back. Children are then asked “Where will Sally look for the marble?” (crucial question); “Where is the marble really?” (reality question); “Where was the marble at the beginning?” (memory question). Baron-Cohen et al. (1985) found that the belief question was correctly answered by 86% of the Down’s syndrome children and by 85% of the typically developed children. However, only 20% of the autistic group were able to answer this correctly. <p>Credit other relevant material.</p> <table border="1"> <thead> <tr> <th>Level</th><th>Description</th><th>Marks</th></tr> </thead> <tbody> <tr> <td>3</td><td>Knowledge of the procedure and findings of a Sally-Anne study is detailed. The answer is clear with appropriate use of specialist terminology.</td><td>5–6</td></tr> <tr> <td>2</td><td>Knowledge of the procedure and/or findings a Sally-Anne study is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.</td><td>3–4</td></tr> <tr> <td>1</td><td>Knowledge of the procedure and/or findings a Sally-Anne study is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.</td><td>1–2</td></tr> <tr> <td>0</td><td>No creditable content.</td><td>0</td></tr> </tbody> </table>	Level	Description	Marks	3	Knowledge of the procedure and findings of a Sally-Anne study is detailed. The answer is clear with appropriate use of specialist terminology.	5–6	2	Knowledge of the procedure and/or findings a Sally-Anne study is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4	1	Knowledge of the procedure and/or findings a Sally-Anne study is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO1 = 6</p>
Level	Description	Marks															
3	Knowledge of the procedure and findings of a Sally-Anne study is detailed. The answer is clear with appropriate use of specialist terminology.	5–6															
2	Knowledge of the procedure and/or findings a Sally-Anne study is relevant but detail is lacking. The answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	3–4															
1	Knowledge of the procedure and/or findings a Sally-Anne study is very limited. The answer is vague and/or muddled. Specialist terminology is either absent or inappropriately used.	1–2															
0	No creditable content.	0															

Question	Marking Guidance	Total Marks
13	<p>Explain one limitation of the Sally-Anne studies.</p> <p>Award marks as follows: 3 marks: the limitation of Sally-Anne studies is detailed. The answer is clear with appropriate use of specialist terminology. 2 marks: the limitation of Sally-Anne studies lacks detail. The answer lacks clarity in places. 1 mark: the limitation of Sally-Anne studies is briefly presented. The answer is very limited, vague and/or muddled.</p> <p>Possible limitations</p> <ul style="list-style-type: none"> • Requires participants to have sufficiently developed language skills – not suitable for very young children or severely autistic children. • Generalisation issues using a sample of children with developmental deficits, eg children on autistic spectrum. • Individual differences/nurture – children from larger and/or more affluent families outperform their peers suggesting an environmental influence on theory of mind development. <p>Credit other relevant limitations.</p>	<p>3</p> <p>AO3 = 3</p>

Section C: Research Methods 1

Total for this section: 30 marks

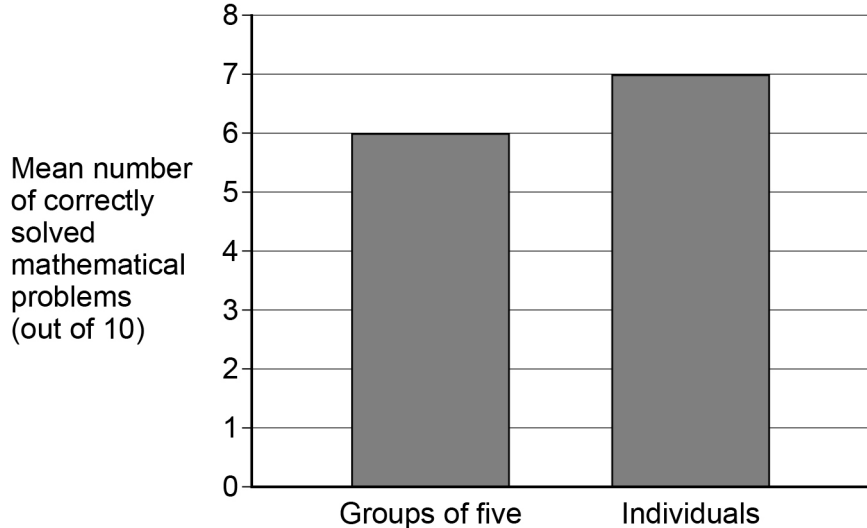
Question	Marking Guidance	Total Marks
14.1	<p>A psychologist had read a research report which suggested that children solve problems more effectively in a group. The psychologist wanted to investigate this.</p> <p>The psychologist approached a local primary school and was given access to two classes of 7-year-olds.</p> <p>The teachers of both classes were asked to set the same 10 mathematical problems for the children to solve.</p> <p>The children in Class A were put into groups of five to solve the 10 mathematical problems.</p> <p>The children in Class B were asked to solve the 10 mathematical problems as individuals.</p> <p>Identify the experimental method used by the psychologist in this investigation. Justify your answer.</p> <p>Award marks as follows: 1 mark: for identifying a field experiment. Do not credit 'experiment'.</p> <p>PLUS</p> <p>2 marks: for a clear justification of the experimental method used. 1 mark: for a muddled or vague justification of the experimental method used.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The study was conducted in the children's classroom in their school. • The children were completing a typical school-type task which was solving mathematical problems. • The children might be unaware that they were taking part in an experiment. <p>Credit other relevant material.</p>	<p>3</p> <p>AO2 = 3</p>

Question	Marking Guidance	Total Marks
14.2	<p>Explain one strength and one limitation of the experimental method you identified in Question 14.1.</p> <p>Award marks as follows: 2 marks: for a clear strength/limitation of a field experiment. 1 mark: for a muddled or vague strength/limitation of a field experiment.</p> <p>Possible strengths</p> <ul style="list-style-type: none"> • The task (mathematical problems) and environment (classroom) have mundane realism and therefore results are representative of normal behaviour and have higher (ecological) validity. • The researchers can still control some variables, which increases the (internal) validity of the study. • There are fewer demand characteristics as participants may be unaware that they are being studied. <p>Possible limitations</p> <ul style="list-style-type: none"> • A field experiment has less control over extraneous variables (compared to a laboratory experiment), lowering the (internal) validity. • Random allocation of participants to conditions may not be possible, which can lead to a sample bias in the conditions. • A field experiment can be unethical as participants might be unaware that they are being studied. <p>Credit other relevant strengths/limitations.</p> <p>Note: If the wrong method is named in Question 14.1, give credit for a strength or limitation relevant to that method.</p>	<p>4</p> <p>AO3 = 4</p>

Question	Marking Guidance	Total Marks
15	<p>The psychologist used a directional hypothesis.</p> <p>Briefly explain why a directional hypothesis was suitable for this investigation.</p> <p>Award marks as follows: 2 marks: for a clear explanation of why a directional hypothesis is suitable. 1 mark: for a muddled or vague explanation.</p> <p>Possible content There was previous research (published in a research report) which tells the psychologist that solving problems in a group is better, providing an expected direction for the results.</p> <p>Credit alternative wording.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks
16	<p>Write a suitable directional hypothesis for this investigation.</p> <p>Award marks as follows: 3 marks: for an appropriate directional hypothesis with both the IV and DV operationalised. 2 marks: for an appropriate directional hypothesis that lacks clarity or where only the IV or DV is operationalised. 1 mark: for muddled directional hypothesis.</p> <p>Note: no marks for a null, non-directional hypothesis or correlational hypothesis.</p> <p>Possible content The children solving problems in groups of five (Class A) will solve more mathematical problems (out of 10) than the children solving the mathematical problems as individuals (Class B).</p> <p>Credit alternative wording, eg reference to time taken to solve mathematical problems as the dependent variable (faster/slower).</p>	<p>3</p> <p>AO2 = 3</p>

<p>The teachers marked the number of mathematical problems that had been correctly solved out of 10.</p> <p>The psychologist calculated the range and mean number of correctly solved mathematical problems for Class A and Class B.</p> <p>The results are presented in Table 1.</p> <p>Table 1: Mean and range of correctly solved mathematical problems for groups of five and as individuals.</p> <table border="1"> <tr> <th></th><th>Class A: Groups of five</th><th>Class B: As individuals</th></tr> <tr> <td>Mean</td><td>6</td><td>7</td></tr> <tr> <td>Range</td><td>2</td><td>8</td></tr> </table>				Class A: Groups of five	Class B: As individuals	Mean	6	7	Range	2	8
	Class A: Groups of five	Class B: As individuals									
Mean	6	7									
Range	2	8									

Question	Marking Guidance	Total Marks						
17	<p>Draw a suitable graph to show the mean data from the results shown in Table 1.</p> <p>Your graph must include a title and labelled axes.</p> <p>Award marks as follows:</p> <p>1 mark: for a title with fully operationalised variables, eg Bar graph to show the mean number of correctly resolved mathematical problems (out of 10) for groups of five and as individuals.</p> <p>1 mark: for correctly labelling the Y-axis; mean number of correctly solved mathematical problems (out of 10).</p> <p>1 mark: for correctly labelling the X-axis; groups of five (Class A) or as individuals (Class B).</p> <p>1 mark: for correctly plotting the data in a bar chart.</p> <p>Title: Bar graph to show the mean number of correctly resolved mathematical problems (out of 10) for groups of five and as individuals.</p>  <table><caption>Data for Bar Chart</caption><tr><th>Group</th><th>Mean number of correctly solved mathematical problems (out of 10)</th></tr><tr><td>Groups of five</td><td>6</td></tr><tr><td>Individuals</td><td>7</td></tr></table>	Group	Mean number of correctly solved mathematical problems (out of 10)	Groups of five	6	Individuals	7	<p>4</p> <p>AO2 = 4</p>
Group	Mean number of correctly solved mathematical problems (out of 10)							
Groups of five	6							
Individuals	7							

Question	Marking Guidance	Total Marks
18	<p>Explain what the mean and range values in Table 1 suggest about solving mathematical problems in a group of five or as individuals. Justify your answers.</p> <p>Award marks as follows:</p> <p>Mean 1 mark: individuals can solve more problems than working in groups of five. AND 1 mark: the mean number of correctly solved mathematical problems for the groups of five was 6, which is less than the mean number of correctly solved mathematical problems as individuals which was 7.</p> <p>Range 1 mark: the ability to solve problems when working will be more consistent in groups of five than working as individuals. AND 1 mark: the range of correctly solved mathematical problems for groups of five was 3, which is smaller than the range for individuals, which was 8.</p> <p>Credit alternative wording, eg reference to little difference between the two conditions for the mean.</p> <p>Npte: The description of the findings on its own (second bullet point) cannot gain credit</p>	<p>4</p> <p>AO2 = 4</p>

Question	Marking Guidance	Total Marks
19	<p>Name the sampling technique used by the psychologist. Briefly explain your answer.</p> <p>Award marks as follows:</p> <p>1 mark: for naming opportunity sampling. 1 further mark: for a brief explanation: The psychologist approached the local primary school and tested whichever children were in the classes on the day of the experiment.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks
20	<p>The psychologist was not concerned about a possible sample bias.</p> <p>Briefly explain why the psychologist might have concerns about a possible sample bias in this experiment.</p> <p>Award marks as follows: 2 marks: for a clear explanation of why the psychologist might have concerns about a possible sample bias. 1 mark: for a muddled or vague explanation of why the psychologist might have concerns about a possible sample bias.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The researchers selected all children from one primary school, and it is possible that there are specific demographics for children attending this school. That means that the sample is likely to be biased and that the results are not representative of 7-year-olds who live in another area. • The researchers only studied 7-year-olds and therefore the results may not be representative of other age groups. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking Guidance	Total Marks
21	<p>Outline one ethical issue the psychologist needed to consider when conducting this experiment, and explain how the psychologist might have dealt with this ethical issue.</p> <p>Award marks as follows: 2 marks: for a clear outline of an ethical issue. 1 mark: for a muddled or vague outline of an ethical issue.</p> <p>Possible content</p> <ul style="list-style-type: none"> • A child might have been embarrassed for not being able to solve the mathematical problems, which would have been more obvious in the group of five (protection from harm). • The children are only 7-years old and are therefore not able to consent for themselves (consent). • The data collection took place in the classroom and the children might have been unaware that they can withdraw from the study (withdrawal). <p>Credit other relevant material.</p> <p>AND</p> <p>2 marks: for a clear explanation of how the psychologist might have dealt with this ethical issue. 1 mark: for a muddled or vague explanation of how the psychologist might have dealt with this ethical issue.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Protection from harm: the psychologist could have explained in the brief before the experiment that there is no pressure for the children to complete the problems and that some problems are difficult to complete. • Consent: the psychologist should have contacted the parents. The psychologist should have told the parents all aspects of the experiment, enabling the parents to give full informed consent for their children. • Withdrawal: the psychologist should also have told the children that they could withdraw from the exercise (of solving problems) at any point. <p>Credit other relevant material.</p>	<p>4</p> <p>AO2 = 4</p>

Question	Marking Guidance	Total Marks
22	<p>The psychologist was not concerned about possible demand characteristics.</p> <p>Briefly explain why demand characteristics are unlikely to be an issue in this experiment.</p> <p>Award marks as follows: 2 marks: for a clear explanation of why the children are unlikely to have been affected by demand characteristics. 1 mark: for a muddled or vague explanation of why the children are unlikely to have been affected by demand characteristics.</p> <p>Possible content</p> <ul style="list-style-type: none"> • It was a field experiment as it was conducted in the children's classes at school. • The parents consented for their children. Therefore, it is unlikely that the children were aware of being investigated, so they should have behaved naturally. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

PS02 grid

	AO1	AO2	AO3	Total
Section A				
01	3			3
02	1			1
03	6			6
04	8	4	8	20
Section B				
05	2			2
06	2			2
07	2			2
08		4		4
09	6			6
10			3	3
11		2		2
12	6			6
13			3	3
Section C				
14.1		3		3
14.2			4	4
15		2		2
16		3		3
17		4		4
18		4		4
19		2		2
20		2		2
21		4		4
22		2		2
Unit total	36	36	18	90