

OXFORD

INTERNATIONAL
AQA EXAMINATIONS

INTERNATIONAL AS PSYCHOLOGY PS02

Unit 2 Biopsychology, Development and Research Methods 1

Mark scheme

June 2022

Version: 1.0 Final Mark Scheme



2 2 6 X P S 0 2 / 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.

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

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 © 2022 Oxford International AQA 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>Complete Figure 1 by writing the name of the missing division of the nervous system in the box.</p> <p>Central nervous system</p>	<p>1</p> <p>AO1 = 1</p>

Question	Marking guidance	Total marks
02	<p>Describe the function of a motor neuron.</p> <p>2 marks for a clear description of the function of a motor neuron. 1 mark for a limited/vague/muddled description of the function of a motor neuron.</p> <p>Possible content</p> <ul style="list-style-type: none"> • to carry motor commands from the CNS. • to the (skeletal) muscles/organs/glands (effectors). • allowing for movement/action. <p>Credit other relevant material.</p>	<p>2</p> <p>AO1 = 2</p>

Question	Marking guidance	Total marks															
<p>03</p>	<p>Describe what is meant by excitation in the process of synaptic transmission.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Excitation is an increase in the neural activity in the post-synaptic neuron. • Increasing the likelihood of an action potential to be triggered. • Some neurotransmitters have an excitatory effect making the receiving neuron more likely to fire. • Examples of excitatory neurotransmitters include dopamine, serotonin and acetylcholine. <p>Credit other relevant material.</p> <table border="1" data-bbox="284 775 1318 1200"> <thead> <tr> <th data-bbox="284 775 408 842">Level</th> <th data-bbox="408 775 1203 842">Description</th> <th data-bbox="1203 775 1318 842">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="284 842 408 938">3</td> <td data-bbox="408 842 1203 938">Description of excitation is detailed and appropriate. The answer is clear with appropriate use of terminology.</td> <td data-bbox="1203 842 1318 938">3</td> </tr> <tr> <td data-bbox="284 938 408 1034">2</td> <td data-bbox="408 938 1203 1034">Description of excitation is lacking detail. The answer lacks clarity in places.</td> <td data-bbox="1203 938 1318 1034">2</td> </tr> <tr> <td data-bbox="284 1034 408 1131">1</td> <td data-bbox="408 1034 1203 1131">Description of excitation is briefly presented. The answer is very limited/vague/muddled.</td> <td data-bbox="1203 1034 1318 1131">1</td> </tr> <tr> <td data-bbox="284 1131 408 1200">0</td> <td data-bbox="408 1131 1203 1200">No creditable content.</td> <td data-bbox="1203 1131 1318 1200">0</td> </tr> </tbody> </table>	Level	Description	Marks	3	Description of excitation is detailed and appropriate. The answer is clear with appropriate use of terminology.	3	2	Description of excitation is lacking detail. The answer lacks clarity in places.	2	1	Description of excitation is briefly presented. The answer is very limited/vague/muddled.	1	0	No creditable content.	0	<p>3</p> <p>AO1 = 3</p>
Level	Description	Marks															
3	Description of excitation is detailed and appropriate. The answer is clear with appropriate use of terminology.	3															
2	Description of excitation is lacking detail. The answer lacks clarity in places.	2															
1	Description of excitation is briefly presented. The answer is very limited/vague/muddled.	1															
0	No creditable content.	0															

Question	Marking guidance	Total marks
<p>04</p>	<p>Oleg had a bicycle accident. A scan of his brain showed damage to the motor centre of his right hemisphere.</p> <p>Explain how the damage to the motor centre in Oleg’s brain might affect his behaviour.</p> <p>Possible application</p> <ul style="list-style-type: none"> • The motor centres are responsible for initiating/coordinating Oleg’s voluntary movements. • Damage to this area might mean that Oleg experiences problems with muscle movement/ coordination or even paralysis. • Because the damage was only on the right side of Oleg’s brain, it will only affect the mobility of the left side of his body. <p>Credit other relevant material.</p>	<p>3</p> <p>AO2 = 3</p>

Level	Description	Marks
3	The effects of damage to the motor area are applied to Oleg's behaviour after the accident and explained in detail. The answer is clear with appropriate use of specialist terminology.	3
2	The effects of damage to the motor area caused by the accident are explained but detail is lacking. The answer lacks clarity in places.	2
1	The effects of damage to the motor area caused by the accident are briefly presented but there is little or no explanation. The answer is very limited/vague/muddled.	1
0	No creditable content.	0

Question	Marking guidance	Total marks															
<p>05</p>	<p>Describe the fight or flight response. Refer to the role of adrenaline in your answer.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Fight or flight response is part of the 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. • Hypothalamus is instructed to stimulate the release of adrenocorticotrophic hormones (ACTH) from the pituitary gland. • ACTH stimulates the release of corticosteroids (cortisol and corticosterone) from the adrenal cortex into the bloodstream. • 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. • Energy reserves are released, leading to raised levels of glucose and fatty acids. • 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. <p>Credit other relevant material.</p> <table border="1" data-bbox="284 1171 1318 1798"> <thead> <tr> <th data-bbox="284 1171 408 1236">Level</th> <th data-bbox="408 1171 1203 1236">Description</th> <th data-bbox="1203 1171 1318 1236">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="284 1236 408 1402">3</td> <td data-bbox="408 1236 1203 1402">Description of the fight or flight response is detailed and appropriate. There is reference to the role of adrenaline. The answer is clear with appropriate use of specialist terminology.</td> <td data-bbox="1203 1236 1318 1402">7–9</td> </tr> <tr> <td data-bbox="284 1402 408 1568">2</td> <td data-bbox="408 1402 1203 1568">Description of the fight or flight response is relevant but lacks detail. There may be some reference to adrenaline but the answer lacks clarity in places. Specialist terminology is occasionally used appropriately.</td> <td data-bbox="1203 1402 1318 1568">4–6</td> </tr> <tr> <td data-bbox="284 1568 408 1733">1</td> <td data-bbox="408 1568 1203 1733">Description of the fight or flight response is very limited. The answer is vague/muddled and the reference to adrenaline may be missing. Specialist terminology is either absent or inappropriately used.</td> <td data-bbox="1203 1568 1318 1733">1–3</td> </tr> <tr> <td data-bbox="284 1733 408 1798">0</td> <td data-bbox="408 1733 1203 1798">No creditable content.</td> <td data-bbox="1203 1733 1318 1798">0</td> </tr> </tbody> </table>	Level	Description	Marks	3	Description of the fight or flight response is detailed and appropriate. There is reference to the role of adrenaline. The answer is clear with appropriate use of specialist terminology.	7–9	2	Description of the fight or flight response is relevant but lacks detail. There may be some reference to adrenaline but the answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	4–6	1	Description of the fight or flight response is very limited. The answer is vague/muddled and the reference to adrenaline may be missing. Specialist terminology is either absent or inappropriately used.	1–3	0	No creditable content.	0	<p>9</p> <p>AO1 = 9</p>
Level	Description	Marks															
3	Description of the fight or flight response is detailed and appropriate. There is reference to the role of adrenaline. The answer is clear with appropriate use of specialist terminology.	7–9															
2	Description of the fight or flight response is relevant but lacks detail. There may be some reference to adrenaline but the answer lacks clarity in places. Specialist terminology is occasionally used appropriately.	4–6															
1	Description of the fight or flight response is very limited. The answer is vague/muddled and the reference to adrenaline may be missing. Specialist terminology is either absent or inappropriately used.	1–3															
0	No creditable content.	0															

Question	Marking guidance	Total marks
<p>06</p>	<p>Discuss research into plasticity and functional recovery after trauma.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Explanation of plasticity – the ability of the brain to change and adapt in the light of experiences, including trauma. • Description of studies investigating plasticity: eg Blakemore & Mitchell (1973) – development of visual cortex in cats demonstrating plasticity; Maguire (2000) – hippocampus changes in taxi drivers. • Explanation of functional recovery – recovery of function lost after brain damage. • Description of studies investigating functional recovery: eg Villablanca and Hovda (2000) – removal of one damaged hemisphere soon after birth; Kapar (1997) – doctors had better recovery after brain damage compared to general population. • Explanation of mechanisms of recovery: eg reduction of swelling of brain tissue; axonal sprouting from surviving neurons; neurogenesis – growth of new neurons. • Reference to the role of age – more significant change possible in younger brains (eg Teuber (1975) found that soldiers under 20 had a much better recovery of movement and visual problems. <p>Possible discussion</p> <ul style="list-style-type: none"> • Use of research to support argument. • Issues with generalisation of results from case studies or studies with small participant numbers. • Issues with generalisation from non-human animals to humans. • Application: knowledge about plasticity has given importance to rehabilitation and treatment in order to promote recovery. • Difficulty of predicting the level of recovery (low predictive validity). There are huge individual differences in recovery because many factors play a part, eg age, determination, practice, degree of damage. <p>Credit other relevant material.</p>	<p>12</p> <p>AO1 = 6 AO3 = 6</p>

Level	Description	Marks
4	Knowledge of research into plasticity and functional recovery after trauma is mostly accurate and generally well detailed. Minor detail and/or expansion of argument is sometimes lacking. Discussion is mostly effective. The answer is clear and focused. Specialist terminology is mostly used effectively.	10–12
3	Knowledge of research into plasticity and/or functional recovery after trauma is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised, but occasionally lacks focus. Specialist terminology is mostly used appropriately.	7–9
2	Limited knowledge of research into plasticity and/or functional recovery after trauma. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	4–6
1	Knowledge of research into plasticity and/or functional recovery after trauma is very limited. Discussion 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.	1–3
0	No creditable content.	0

Section B: Cognitive Development

Total for this section: 30 marks

Question	Marking guidance	Total marks
07	<p>In which of Piaget's stages of intellectual development, is a child most likely to demonstrate the ability to perform mental operations such as conservation?</p> <p>Correct Answer: A – Concrete operational stage</p>	<p>1</p> <p>AO1 = 1</p>

Question	Marking guidance	Total marks
08	<p>According to Piaget's stages of intellectual development, which age group is associated with the pre-operational stage?</p> <p>Correct Answer: B – 3–6 years</p>	<p>1</p> <p>AO1 = 1</p>

Question	Marking guidance	Total marks															
09	<p>Kemal is a 4-year-old boy who takes part in an experiment. The researcher puts a model of three mountains on a table in front of Kemal. A doll is placed on a chair opposite Kemal. The researcher shows Kemal a selection of pictures with different views of the mountains. Kemal's task is to choose the picture that he thinks is the same view as the doll's view of the mountains.</p> <p>Using your knowledge of Piaget's theory of cognitive development, explain the choice of picture you think Kemal is likely to make and why he is likely to make that choice.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Piaget's theory suggests because Kemal is 4-years-old he would most likely be in the pre-operational stage. • The pre-operational stage is characterised by egocentrism which means Kemal probably cannot see the world from someone else's viewpoint. • Kemal would probably select/be expected to select the picture representing his viewpoint instead of the doll's viewpoint. • Kemal probably cannot decentre – he does not realise yet that because the doll is sitting opposite to him, the doll will see a different representation of the mountains. • According to Piaget, it will not be until Kemal is approximately seven-years-old that he will be able to decentre and choose the correct picture. <p>Credit other relevant material.</p> <table border="1" data-bbox="284 1218 1318 1845"> <thead> <tr> <th>Level</th> <th>Description</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>The application of Piaget's theory of cognitive development to Kemal is explained in detail. The answer is clear with appropriate use of specialist terminology.</td> <td>5–6</td> </tr> <tr> <td>2</td> <td>The application of Piaget's theory of cognitive development to Kemal is explained but detail is lacking. The answer lacks clarity in places. There is some appropriate reference to specialist terminology.</td> <td>3–4</td> </tr> <tr> <td>1</td> <td>The application of Piaget's theory of cognitive development to Kemal is briefly presented but there is little or no explanation. The answer is very limited/vague/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	The application of Piaget's theory of cognitive development to Kemal is explained in detail. The answer is clear with appropriate use of specialist terminology.	5–6	2	The application of Piaget's theory of cognitive development to Kemal is explained but detail is lacking. The answer lacks clarity in places. There is some appropriate reference to specialist terminology.	3–4	1	The application of Piaget's theory of cognitive development to Kemal is briefly presented but there is little or no explanation. The answer is very limited/vague/muddled. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO2 = 6</p>
Level	Description	Marks															
3	The application of Piaget's theory of cognitive development to Kemal is explained in detail. The answer is clear with appropriate use of specialist terminology.	5–6															
2	The application of Piaget's theory of cognitive development to Kemal is explained but detail is lacking. The answer lacks clarity in places. There is some appropriate reference to specialist terminology.	3–4															
1	The application of Piaget's theory of cognitive development to Kemal is briefly presented but there is little or no explanation. The answer is very limited/vague/muddled. Specialist terminology is either absent or inappropriately used.	1–2															
0	No creditable content.	0															

Question	Marking guidance	Total marks												
10	<p>Baillargeon investigated violation of expectation in young children. Outline the procedure from one violation of expectation study.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Familiarisation stage: where the child becomes familiar with the task. • Habituation: repeated exposure of possible/expected event. • Conditions: the expected/possible event (the child views the expected/possible event) and the unexpected/impossible event (child views the impossible event). • Measurements taken: eg measuring how long child looks in the possible and impossible conditions. <p>The answer may be contextualized, referring to a specific study, eg drawbridge study, tall/short carrot study; truck and screen study; Minnie Mouse and the window; tall and short rabbit study. Accept relevant procedural detail (eg time spent looking) embedded in findings.</p> <p>Credit other relevant material.</p> <table border="1" data-bbox="284 958 1318 1352"> <thead> <tr> <th data-bbox="284 958 408 1025">Level</th> <th data-bbox="408 958 1203 1025">Description</th> <th data-bbox="1203 958 1318 1025">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="284 1025 408 1155">2</td> <td data-bbox="408 1025 1203 1155">Procedures of violation of expectation studies are described in some detail. The answer is clear with appropriate use of specialist terminology.</td> <td data-bbox="1203 1025 1318 1155">3–4</td> </tr> <tr> <td data-bbox="284 1155 408 1285">1</td> <td data-bbox="408 1155 1203 1285">Procedures of violation of expectation studies lack detail. The answer lacks clarity. Use of specialist terminology is sometimes inappropriate.</td> <td data-bbox="1203 1155 1318 1285">1–2</td> </tr> <tr> <td data-bbox="284 1285 408 1352">0</td> <td data-bbox="408 1285 1203 1352">No creditable content.</td> <td data-bbox="1203 1285 1318 1352">0</td> </tr> </tbody> </table>	Level	Description	Marks	2	Procedures of violation of expectation studies are described in some detail. The answer is clear with appropriate use of specialist terminology.	3–4	1	Procedures of violation of expectation studies lack detail. The answer lacks clarity. Use of specialist terminology is sometimes inappropriate.	1–2	0	No creditable content.	0	<p>4</p> <p>AO1 = 4</p>
Level	Description	Marks												
2	Procedures of violation of expectation studies are described in some detail. The answer is clear with appropriate use of specialist terminology.	3–4												
1	Procedures of violation of expectation studies lack detail. The answer lacks clarity. Use of specialist terminology is sometimes inappropriate.	1–2												
0	No creditable content.	0												

Question	Marking guidance	Total marks															
<p>11</p>	<p>Evaluate research into theory of mind.</p> <p>Possible evaluation</p> <ul style="list-style-type: none"> • Research is carefully controlled, eg children selected with matched mental ages, use of standardised procedures, therefore suggesting that the evidence supporting the theory has high (internal) validity. • Research into ToM is not suitable for very young children as it requires participants to have sufficiently developed language skills. Results gathered using very young children might be misattributed to ToM and it remains unclear to what extent language might have interfered with the results. • Supporting research, eg meta-analysis of 178 studies by Wellman et al (2001) suggests that children under the age of four have not developed ToM. • 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. • Evaluation of ToM, eg based on abstract concepts which have been inferred. <p>Credit other relevant material.</p> <table border="1" data-bbox="284 1010 1319 1603"> <thead> <tr> <th data-bbox="284 1010 408 1070">Level</th> <th data-bbox="413 1010 1203 1070">Description</th> <th data-bbox="1208 1010 1319 1070">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="284 1077 408 1240">3</td> <td data-bbox="413 1077 1203 1240">Evaluation of research into theory of mind is mostly thorough and effective. The answer is clear and organised. There is some effective use of specialist terminology.</td> <td data-bbox="1208 1077 1319 1240">5–6</td> </tr> <tr> <td data-bbox="284 1247 408 1411">2</td> <td data-bbox="413 1247 1203 1411">Evaluation of research into theory of mind is evident but lacks effectiveness in places. The answer lacks clarity and organisation in places. There is some appropriate use of specialist terminology.</td> <td data-bbox="1208 1247 1319 1411">3–4</td> </tr> <tr> <td data-bbox="284 1417 408 1538">1</td> <td data-bbox="413 1417 1203 1538">Evaluation of research into theory of mind is limited. The answer lacks clarity and is poorly organised. Specialist terminology is either absent or inappropriately used.</td> <td data-bbox="1208 1417 1319 1538">1–2</td> </tr> <tr> <td data-bbox="284 1545 408 1603">0</td> <td data-bbox="413 1545 1203 1603">No creditable content.</td> <td data-bbox="1208 1545 1319 1603">0</td> </tr> </tbody> </table>	Level	Description	Marks	3	Evaluation of research into theory of mind is mostly thorough and effective. The answer is clear and organised. There is some effective use of specialist terminology.	5–6	2	Evaluation of research into theory of mind is evident but lacks effectiveness in places. The answer lacks clarity and organisation in places. There is some appropriate use of specialist terminology.	3–4	1	Evaluation of research into theory of mind is limited. The answer lacks clarity and is poorly organised. Specialist terminology is either absent or inappropriately used.	1–2	0	No creditable content.	0	<p>6</p> <p>AO3 = 6</p>
Level	Description	Marks															
3	Evaluation of research into theory of mind is mostly thorough and effective. The answer is clear and organised. There is some effective use of specialist terminology.	5–6															
2	Evaluation of research into theory of mind is evident but lacks effectiveness in places. The answer lacks clarity and organisation in places. There is some appropriate use of specialist terminology.	3–4															
1	Evaluation of research into theory of mind is limited. The answer lacks clarity and is poorly organised. Specialist terminology is either absent or inappropriately used.	1–2															
0	No creditable content.	0															

Question	Marking guidance	Total marks												
12	<p>Discuss Vygotsky's theory of cognitive development.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Emphasis on the role of social and cultural factors in cognitive development. • Child develops tools of their own culture, especially language. • Role of language in thought – language becomes internalised (about age 8 years) and becomes intellectual (inner) speech. • Children born with elementary mental functions which develop into higher mental functions. • Child's interaction with older or more knowledgeable others; introduction of the concept of the 'Zone of Proximal Development' – difference between actual and potential ability. • Scaffolding and role of instruction; child is seen as an apprentice to a more knowledgeable other. • Internalisation of world view of other people through social interaction. <p>Possible discussion</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 etc. • Guidance and instruction may not always have a positive influence as may lead to lack of motivation/independence etc. • Contrast with Piaget: eg Vygotsky believed (unlike Piaget's notion of readiness) that development could be accelerated to some extent, eg through the zone of proximal development and collaborative learning. • Focuses on the process of cognitive development rather than outcomes (Piaget). <p>Credit other relevant material.</p> <table border="1" data-bbox="284 1301 1318 1993"> <thead> <tr> <th data-bbox="284 1301 408 1361">Level</th> <th data-bbox="408 1301 1203 1361">Description</th> <th data-bbox="1203 1301 1318 1361">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="284 1361 408 1563">4</td> <td data-bbox="408 1361 1203 1563">Knowledge of Vygotsky's theory of cognitive development is mostly accurate and generally well detailed. Minor detail and/or expansion of argument is sometimes lacking. Discussion is mostly effective. The answer is clear and focused. Specialist terminology is mostly used effectively.</td> <td data-bbox="1203 1361 1318 1563">10–12</td> </tr> <tr> <td data-bbox="284 1563 408 1798">3</td> <td data-bbox="408 1563 1203 1798">Knowledge of Vygotsky's theory of cognitive development is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised, but occasionally lacks focus. Specialist terminology is mostly used appropriately.</td> <td data-bbox="1203 1563 1318 1798">7–9</td> </tr> <tr> <td data-bbox="284 1798 408 1993">2</td> <td data-bbox="408 1798 1203 1993">Limited knowledge of Vygotsky's theory of cognitive development. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.</td> <td data-bbox="1203 1798 1318 1993">4–6</td> </tr> </tbody> </table>	Level	Description	Marks	4	Knowledge of Vygotsky's theory of cognitive development is mostly accurate and generally well detailed. Minor detail and/or expansion of argument is sometimes lacking. Discussion is mostly effective. The answer is clear and focused. Specialist terminology is mostly used effectively.	10–12	3	Knowledge of Vygotsky's theory of cognitive development is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised, but occasionally lacks focus. Specialist terminology is mostly used appropriately.	7–9	2	Limited knowledge of Vygotsky's theory of cognitive development. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	4–6	<p>12</p> <p>AO1 = 6 AO3 = 6</p>
Level	Description	Marks												
4	Knowledge of Vygotsky's theory of cognitive development is mostly accurate and generally well detailed. Minor detail and/or expansion of argument is sometimes lacking. Discussion is mostly effective. The answer is clear and focused. Specialist terminology is mostly used effectively.	10–12												
3	Knowledge of Vygotsky's theory of cognitive development is evident but there are occasional inaccuracies/omissions. There is some effective discussion. The answer is mostly clear and organised, but occasionally lacks focus. Specialist terminology is mostly used appropriately.	7–9												
2	Limited knowledge of Vygotsky's theory of cognitive development. Any discussion is of limited effectiveness. The answer lacks clarity, accuracy and organisation in places. Specialist terminology is occasionally used appropriately.	4–6												

	1	Knowledge of Vygotsky’s theory of cognitive development is very limited. Discussion 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.	1–3	
	0	No creditable content.	0	

Section C: Research Methods 1

Total for this section: 30 marks

Question	Marking guidance	Total marks
13	<p>What is a pilot study?</p> <p>2 marks or a clear and coherent description of what a pilot study is. 1 mark for a limited or muddled description of what a pilot study is.</p> <p>Possible content</p> <ul style="list-style-type: none"> • A pilot study is a preliminary trial run. • Uses a small sample. • In a pilot study the researcher can check aspects of a study, eg if the instructions are clear. <p>Credit other relevant material.</p>	<p>2</p> <p>AO1 = 2</p>

Question	Marking guidance	Total marks															
14	<p>Explain one possible reason why the psychologist decided to do a pilot study of his questionnaire.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The pilot study enables the psychologist to check that the content of his questions concerns outdoor activities students might enjoy doing. • The psychologist could check whether the students feel comfortable to answer questions about happiness because if they don't feel comfortable, this might lead to ethical issues. • The psychologist can check whether the students understand the questions about outdoor activities. <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>The explanation of one reason for using a pilot study in this case is explained in detail. The answer is clear with appropriate use of specialist terminology.</td> <td>3</td> </tr> <tr> <td>2</td> <td>The explanation of one reason for using a pilot study in this case is explained but detail is lacking. The answer lacks clarity in places.</td> <td>2</td> </tr> <tr> <td>1</td> <td>The explanation of one reason for using a pilot study in this case is briefly presented but there is little or no explanation. The answer may lack application to stem. The answer is very limited/vague/muddled.</td> <td>1</td> </tr> <tr> <td>0</td> <td>No creditable content.</td> <td>0</td> </tr> </tbody> </table>	Level	Description	Marks	3	The explanation of one reason for using a pilot study in this case is explained in detail. The answer is clear with appropriate use of specialist terminology.	3	2	The explanation of one reason for using a pilot study in this case is explained but detail is lacking. The answer lacks clarity in places.	2	1	The explanation of one reason for using a pilot study in this case is briefly presented but there is little or no explanation. The answer may lack application to stem. The answer is very limited/vague/muddled.	1	0	No creditable content.	0	<p>3</p> <p>AO2 = 3</p>
Level	Description	Marks															
3	The explanation of one reason for using a pilot study in this case is explained in detail. The answer is clear with appropriate use of specialist terminology.	3															
2	The explanation of one reason for using a pilot study in this case is explained but detail is lacking. The answer lacks clarity in places.	2															
1	The explanation of one reason for using a pilot study in this case is briefly presented but there is little or no explanation. The answer may lack application to stem. The answer is very limited/vague/muddled.	1															
0	No creditable content.	0															

Question	Marking guidance	Total marks
15	<p>Name one sampling technique and briefly explain how the psychologist could have used this technique in his pilot study.</p> <p>1 mark for naming a sampling technique.</p> <p>Possible content</p> <ul style="list-style-type: none"> • Opportunity sampling. • Random sampling. <p>Credit other sampling techniques.</p> <p>Plus</p> <p>2 marks for a clear and coherent explanation of how the psychologist could have used the technique in this investigation.</p> <p>1 mark for a limited or muddled explanation of how the psychologist could have used the technique in this investigation.</p> <p>Possible content</p> <ul style="list-style-type: none"> • He could have gone to a lecture at a local university. At the lecture, he could ask the students to take part by filling in a questionnaire (opportunity sampling). • He could have asked at a local university for an anonymised list of all students. Each student would be given a number, the numbers would be entered into a random number generator which would select the required sample size randomly (random sampling). <p>Credit other relevant material.</p>	<p>3</p> <p>AO1 = 1 AO2 = 2</p>

Question	Marking guidance	Total marks
16	<p>Write one question the psychologist could have used to collect qualitative data for this pilot study.</p> <p>2 marks for a relevant and coherent question that collects qualitative data, eg 'How does it make you feel when spending time doing outdoor activities? Explain in your own words.'</p> <p>1 mark for a relevant question that lacks clarity/coherence.</p> <p>0 marks for a question that would collect quantitative data.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
17	<p>Name and briefly explain the experimental design used by the psychologist in this experiment.</p> <p>Award 1 mark for the experimental design – independent groups (or similar, eg unrelated groups).</p> <p>And award up to 2 marks for a relevant and coherent explanation of independent groups, eg students took part in only one condition, either ‘in a gym’ or ‘in a park’.</p> <p>1 mark for a relevant explanation that lacks clarity/coherence.</p>	<p>3</p> <p>AO2 = 3</p>

Question	Marking guidance	Total marks
18	<p>Briefly explain how the independent variable in this experiment was operationalised.</p> <p>2 marks for operationalising the independent variable, such as being in a park or being in a gym.</p> <p>1 mark for partially operationalising the independent variable, eg location, or for a muddled answer.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
19	<p>Explain one possible problem with asking students to rate their happiness.</p> <p>2 marks for a clear and coherent explanation of one problem with rating happiness.</p> <p>1 mark for a limited or muddled explanation of one problem with rating happiness.</p> <p>Possible content</p> <ul style="list-style-type: none"> • This rating is subjective to the rater; unable to compare happiness ratings of people objectively. • The happiness rating might be subject to demand characteristics as students might want to be perceived as being happy. • A problem could be protection from harm because the students might realise how unhappy they are when providing a happiness rating. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
20	<p>Identify one possible extraneous variable in this experiment and explain why it should have been controlled.</p> <p>1 mark for naming a possible extraneous variable, eg weather, difference in types of gym/park, how busy the gym/park is, time of day, how they feel on the day etc Plus 2 marks for a clear and coherent explanation of why it was important to control this variable. 1 mark for a limited or muddled explanation of why it was important to control this variable.</p>	<p>3</p> <p>AO2 = 3</p>

Question	Marking guidance	Total marks
21.1	<p>Calculate the range for the happiness ratings for Condition 1. Show your working.</p> <p>Award marks as follows: 2 marks for the correct answer: 4. Also accept 5 (4+1=5). 1 mark if the answer is incorrect but there are some appropriate calculations.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
21.2	<p>Explain why the range is an appropriate measure of dispersion for the happiness ratings for Condition 1.</p> <p>2 marks for a relevant and coherent explanation of why the range is an appropriate measure of dispersion for this set of data. 1 mark for a relevant explanation that lacks clarity/coherence.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The data set has no outliers. • The range is a good representation of the spread of data. • The range is not affected by extreme scores in Condition 1. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
21.3	<p>Calculate the median for the happiness ratings for Condition 2. Show your working.</p> <p>2 marks for correctly calculated median of 4.5. 1 mark if the answer is incorrect but there are some appropriate calculations.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
21.4	<p>Explain why the median is an appropriate measure of central tendency for the happiness ratings for Condition 2.</p> <p>2 marks for a relevant and coherent explanation of why the median is an appropriate measure of central tendency for this set of data. 1 mark for a relevant explanation that lacks clarity/coherence.</p> <p>Possible content</p> <ul style="list-style-type: none"> • The median of the happiness ratings is not affected by the outlier in this data (rating of 1). • The students chose the number for their happiness rating, it was not objectively measured/it was self-reported. <p>Credit other relevant material.</p>	<p>2</p> <p>AO2 = 2</p>

Question	Marking guidance	Total marks
22	<p>Name an appropriate graph to display the medians for Condition 1 and Condition 2. Briefly explain why the graph you have named is appropriate.</p> <p>Award 1 mark for naming bar chart. (Accept pie chart) Award a further 1 mark for the reason, eg the data are in two conditions/categorical/frequency/discrete data.</p> <p>Credit other relevant reason.</p>	<p>2</p> <p>AO2 = 2</p>

PS02 grid

	AO1	AO2	AO3	Total
Section A				
01	1			1
02	2			2
03	3			3
04		3		3
05	9			9
06	6		6	12
Section B				
07	1			1
08	1			1
09		6		6
10	4			4
11			6	6
12	6		6	12
Section C				
13	2			2
14		3		3
15	1	2		3
16		2		2
17		3		3
18		2		2
19		2		2
20		3		3
21.1		2		2
21.2		2		2
21.3		2		2
21.4		2		2
22		2		2
Unit total	36	36	18	90