

INTERNATIONAL AS PSYCHOLOGY

PS02

Unit 2: Biopsychology, Development and Research Methods 1

Mark scheme

January 2020

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 oxfordaqaexams.org.uk

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Level of response marking instructions

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

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

Step 1 Determine a level

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

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

Step 2 Determine a mark

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

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

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>Below is a diagram of a motor neuron (Figure 1). Name the structures labelled A–E. Write the name of each structure in the relevant box.</p> <p>A) dendrites; B) nucleus; C) cell body; D) axon; E) myelin sheath</p>	<p>5</p> <p>AO1=5</p>

Question	Marking guidance	Total marks
02	<p>Which of the following is not a division of the nervous system? Shade one box only.</p> <p>Answer: C Motor</p>	<p>1</p> <p>AO1=1</p>

Question	Marking guidance	Total marks									
03	<p>Explain how Ben’s somatic nervous system is involved in his behaviour.</p> <p>Application:</p> <ul style="list-style-type: none"> • Ben’s somatic nervous system connects his central nervous system (CNS) to his body’s muscles and allows control of voluntary movement. • Ben notices the hole in the road – his sensory receptors in his eyes detect the hole ahead and sensory neurons relay this information to the brain (CNS). • Ben’s brain then sends signals to his muscles to take appropriate action. Motor (efferent) neurons carry information from Ben’s brain and the spinal cord to muscle fibres in his body. • Ben is able to brake (he slowed down) and move the steering wheel to avoid the hole because the somatic nervous system allows voluntary movements through the skeletal muscles. <table border="1" data-bbox="300 1720 1158 2051"> <thead> <tr> <th>Level</th> <th>Descriptor</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>Application of the somatic nervous system is detailed and appropriate. The answer is clear with appropriate use of terminology.</td> <td>5–6</td> </tr> <tr> <td>2</td> <td>Application of the somatic nervous system is relevant but detail/application is lacking. The answer lacks clarity in places.</td> <td>3–4</td> </tr> </tbody> </table>	Level	Descriptor	Marks	3	Application of the somatic nervous system is detailed and appropriate. The answer is clear with appropriate use of terminology.	5–6	2	Application of the somatic nervous system is relevant but detail/application is lacking. The answer lacks clarity in places.	3–4	<p>6</p> <p>AO2=6</p>
Level	Descriptor	Marks									
3	Application of the somatic nervous system is detailed and appropriate. The answer is clear with appropriate use of terminology.	5–6									
2	Application of the somatic nervous system is relevant but detail/application is lacking. The answer lacks clarity in places.	3–4									

	1	Application is very limited. The answer is vague/muddled.	1–2
	0	No creditable content.	

Question	Marking guidance	Total marks
04	<p>Describe the function of the endocrine system.</p> <p>Content:</p> <ul style="list-style-type: none"> • The endocrine system is a network of glands throughout the body whose main function is to control or regulate the activity of particular cells or organs in the body. • Glands secrete hormones directly into the bloodstream or circulatory system. • Hormones released by these glands are vital to most of the physiological functions of the body. • The ‘master gland’ is the pituitary – rather than having a direct effect on tissues of the body the function of this gland is to control other endocrine glands. • The hypothalamus controls the release of hormones from the pituitary gland – and is thus considered to have general control of the endocrine system. • Examples of other key glands, their associated hormones and their functions include: <ul style="list-style-type: none"> ○ thyroid, releases the hormone thyroxine, function – regulates metabolic rate ○ testes, release androgens, function – development of male characteristics at puberty ○ ovaries, release Oestrogens, function – regulate female reproductive system etc ○ pineal, releases melatonin, function – regulates biological rhythms etc ○ adrenal_medulla, releases adrenaline and noradrenaline, function – fight or flight response ○ adrenal_cortex, (i) releases glucocorticoids eg cortisone, function – release glucose, suppress immune response etc (ii) releases mineralcorticoids, function – regulates water balance of the body. <p>Credit reference to the fight or flight response if linked to the endocrine system/glands/hormones.</p> <p>Credit other relevant material.</p>	<p>9</p> <p>AO1=9</p>

Level	Descriptor	Marks
3	Description of the function of the endocrine system is detailed and appropriate. The answer is clear with appropriate use of terminology.	7–9
2	Description of the function of the endocrine system is relevant but lacks detail. The answer lacks clarity in places.	4–6
1	Description is very limited. The answer is vague/muddled.	1–3
0	No creditable content.	

Question	Marking guidance	Total marks
05	<p>Describe and evaluate one split-brain research study.</p> <p>Content:</p> <ul style="list-style-type: none"> • Early research by Sperry (1950s) and the experimental procedure known as divided field. • In the split-brain patient the corpus callosum has been cut, so a stimulus sent to the right hemisphere cannot be transmitted to the left hemisphere, and vice versa. Stimuli could be presented to each hemisphere separately. • Sperry, 1965 split brain study on word processing – showed the right hemisphere had some basic language ability. • Use of non-verbal stimuli (eg Gazzaniga 2005) – used faces as stimuli rather than words. Found right hemisphere was better at matching shapes and showed superiority on visuo-spatial tasks. • Evidence supported a verbal left hemisphere and a visuo-spatial right hemisphere. • Recent research (Turk et al, 2002) found that although the right hemisphere is generally better at face-processing, the left hemisphere appears to play an important role in self-recognition. <p>Evaluation:</p> <ul style="list-style-type: none"> • Research by Sperry and colleagues was groundbreaking and changed view of hemisphere function. • Findings from a variety of studies have now led to a general model of hemispheric lateralisation. • Small sample, there are very few split-brain patients and only 	<p>9</p> <p>AO1=5 AO3=4</p>

	<p>10–15 have been extensively researched. Difficult to generalise.</p> <ul style="list-style-type: none"> • Those studied have been a very varied group eg gender, age, handedness etc. In addition, their operations were not always comparable. For example, in some cases the anterior commissure was not cut, and this may allow for some limited communication between hemispheres. • Sperry’s techniques have been modified for use with intact participants (neurotypicals). <p>Credit other relevant material.</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%; text-align: center;">Level</th> <th style="width: 60%;">Descriptor</th> <th style="width: 30%; text-align: center;">Marks</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3</td> <td>Description and evaluation of one piece of split-brain research is detailed and appropriate. The answer is clear with appropriate use of terminology.</td> <td style="text-align: center;">7–9</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Description and evaluation of one piece of split-brain research is relevant, but detail is lacking. The answer lacks clarity in places. OR one skill at L3.</td> <td style="text-align: center;">4–6</td> </tr> <tr> <td style="text-align: center;">1</td> <td>Description and/or evaluation is very limited. The answer is vague/muddled. OR one skill at L2.</td> <td style="text-align: center;">1–3</td> </tr> <tr> <td style="text-align: center;">0</td> <td colspan="2">No creditable content.</td> </tr> </tbody> </table>			Level	Descriptor	Marks	3	Description and evaluation of one piece of split-brain research is detailed and appropriate. The answer is clear with appropriate use of terminology.	7–9	2	Description and evaluation of one piece of split-brain research is relevant, but detail is lacking. The answer lacks clarity in places. OR one skill at L3.	4–6	1	Description and/or evaluation is very limited. The answer is vague/muddled. OR one skill at L2.	1–3	0	No creditable content.	
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Section B: Cognitive development

Total for this section: 30 marks

Question	Marking guidance	Total marks												
06	<p>Explain what Kit's answer suggests about his development of a theory of mind.</p> <p>Content:</p> <ul style="list-style-type: none"> • Kit has not yet developed a theory of mind as he did not answer the 'belief' question correctly. • The incorrect answer given by Kit (behind the cushion) means that Kit cannot attribute false belief to Ben. • Kit is unable to take Ben's perspective/understand that Ben's mind has a different viewpoint. • Kit thinks Ben will know what he knows concerning the whereabouts of the red car after his mother had moved it. • If Kit had given the correct answer (toy box) it would have meant that Kit understood that Ben has a false belief. <table border="1" data-bbox="300 936 1158 1368"> <thead> <tr> <th data-bbox="300 936 408 1003">Level</th> <th data-bbox="408 936 1015 1003">Descriptor</th> <th data-bbox="1015 936 1158 1003">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="300 1003 408 1137">2</td> <td data-bbox="408 1003 1015 1137">Theory of mind is applied to the stem in some detail. The answer is clear with appropriate use of terminology.</td> <td data-bbox="1015 1003 1158 1137">3–4</td> </tr> <tr> <td data-bbox="300 1137 408 1305">1</td> <td data-bbox="408 1137 1015 1305">Theory of mind is applied to the stem, but the application lacks detail. The answer lacks clarity. Use of terminology is sometimes inappropriate.</td> <td data-bbox="1015 1137 1158 1305">1–2</td> </tr> <tr> <td data-bbox="300 1305 408 1368">0</td> <td colspan="2" data-bbox="408 1305 1158 1368">No creditable content.</td> </tr> </tbody> </table>	Level	Descriptor	Marks	2	Theory of mind is applied to the stem in some detail. The answer is clear with appropriate use of terminology.	3–4	1	Theory of mind is applied to the stem, but the application lacks detail. The answer lacks clarity. Use of terminology is sometimes inappropriate.	1–2	0	No creditable content.		<p>4</p> <p>AO2=4</p>
Level	Descriptor	Marks												
2	Theory of mind is applied to the stem in some detail. The answer is clear with appropriate use of terminology.	3–4												
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0	No creditable content.													

Question	Marking guidance	Total marks
07	<p>Briefly discuss two limitations of Sally-Anne studies.</p> <p>Possible limitations include:</p> <ul style="list-style-type: none"> • The Sally-Anne test can only be used on people with sufficiently developed language skills as they are required to understand the story and instructions. • The study could be said to lack mundane realism as it was a story about dolls and may lack relevance to real-life situations. • Bloom and German (2000) suggest the false belief tasks are not just testing Theory of Mind but also other cognitive processes eg memory. When children with ASD are given visual aids to help them remember they perform much better on false belief tasks. <p>Credit other relevant limitations.</p> <p>For each limitation award marks as follows:</p> <p>2 marks for a clear and detailed limitation.</p> <p>1 mark for a limited/vague/muddled limitation.</p>	<p>4</p> <p>AO3=4</p>

Question	Marking guidance	Total marks
08	<p>Explain what is meant by violation of expectation. Refer to the above study in your answer.</p> <p>Content:</p> <p>A01</p> <ul style="list-style-type: none"> • Violation of expectation is a technique used by psychologists to investigate very young infants' understanding of the physical world. An expectancy of a physical event is created then an unexpected event happens. • If the infant spends more time looking, it is assumed they have formed an expectation about what should happen and that this expectation has been violated. <p>Application:</p> <ul style="list-style-type: none"> • In the above study Group A were shown an expected event – they had previously seen a train enter a tunnel and reappear. • Group B have had their expectation violated as the train did not re-appear, leading to increased interest and looking at the event for longer. <p>Credit other relevant points.</p>	<p>4</p> <p>AO1=2 AO2=2</p>

Level	Descriptor	Marks
2	Violation of expectation is explained in some detail. The application is appropriate. The answer is clear with appropriate use of terminology.	3–4
1	Violation of expectation is limited, vague or muddled. Application lacks detail/is missing. The answer lacks clarity.	1–2
0	No creditable content.	

Question	Marking guidance	Total marks
09	<p>Outline the first two stages of Piaget’s stages of intellectual development.</p> <p>Content:</p> <p><u>Stage 1, Sensorimotor, 0–2 years</u></p> <ul style="list-style-type: none"> • Very young infants deal with the world by using simple reflexes eg sucking. At about 6 weeks these reflexes become ‘primary circular reactions’, initiated by the baby eg grasping a toy. These are followed by more complex secondary and tertiary reactions. • In the sensorimotor stage the child develops object permanence. Object permanence is the understanding that objects exist even when out of sight – which occurs around 9 months. <p><u>Stage 2, Pre-operational, 2–7 years</u></p> <ul style="list-style-type: none"> • By the age of 2 years the child is mobile and can use language but still lacks reasoning ability. Piaget identified several mental tasks that children appeared unable to do in this stage. • Egocentricity – inability to see things from other people’s viewpoints; as demonstrated in the ‘three mountains task’. • Class inclusion – children are unable to understand how categories of objects relate to each other. • Conservation – inability to understand that when the shape or appearance of an object changes, the overall quantity remains the same if nothing is added or taken away. <p>Credit other relevant points.</p>	<p>6</p> <p>AO1=6</p>

Level	Descriptor	Marks
3	Knowledge of the Sensorimotor and Pre-operational stages of Piaget's stages of intellectual development is accurate. The answer is clear and organised. There is some effective use of specialist terminology.	5–6
2	Knowledge of the Sensorimotor and Pre-operational stages of Piaget's stages of intellectual development is evident but there are occasional inaccuracies/omissions. The answer lacks clarity and organisation in places. There is some appropriate use of specialist terminology. OR one stage at L3.	3–4
1	Knowledge of the Sensorimotor and/or the Pre-operational stage of Piaget's stages of intellectual development is either limited or very limited. The answer lacks clarity and is poorly organised. Specialist terminology is either absent or inappropriately used. OR one stage at L2.	1–2
0	No creditable content.	

Question	Marking guidance	Total marks									
10	<p>Describe and evaluate Vygotsky's theory of cognitive development.</p> <p>Possible content:</p> <ul style="list-style-type: none"> • Vygotsky's sociocultural theory emphasised the role of social and cultural factors in cognitive development. • A child develops tools of their own culture, especially language. • The role of language in thought – language becomes internalized (about age 8 years) and becomes intellectual (inner) speech. • Children born with elementary mental functions which develop into higher mental functions. • Vygotsky was particularly interested in the child's interaction with older or more knowledgeable others and introduced the concept of the Zone of Proximal Development. • Scaffolding and role of instruction have been applied to Vygotsky's theory. The child is seen as an apprentice to a more knowledgeable other. • Vygotsky's theory of concept formation. <p>Possible evaluation:</p> <ul style="list-style-type: none"> • There is evidence to support Vygotsky's theory eg scaffolding (Wood and Middleton, 1975). • Vygotsky's ideas have been applied to education eg peer tutoring 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) that development could be accelerated to some extent, eg through the zone of proximal development and collaborative learning. • Vygotsky's theory of cognitive development focuses on the process of cognitive development rather than outcomes (Piaget). <p>Credit other relevant points.</p> <table border="1" data-bbox="300 1503 1190 2011"> <thead> <tr> <th>Level</th> <th>Descriptor</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>Knowledge of Vygotsky's theory of cognitive development is accurate and generally well detailed. Evaluation is effective. The answer is clear, organised and focused. Specialist terminology is mostly used effectively.</td> <td>10–12</td> </tr> <tr> <td>3</td> <td>Knowledge of Vygotsky's theory of cognitive development is evident but there are occasional inaccuracies/omissions. There is some appropriate evaluation. The answer is mostly clear and organised. Specialist terminology is mostly used appropriately.</td> <td>7–9</td> </tr> </tbody> </table>	Level	Descriptor	Marks	4	Knowledge of Vygotsky's theory of cognitive development is accurate and generally well detailed. Evaluation is effective. The answer is clear, organised 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 appropriate evaluation. The answer is mostly clear and organised. Specialist terminology is mostly used appropriately.	7–9	<p>12</p> <p>AO1=6 AO3=6</p>
Level	Descriptor	Marks									
4	Knowledge of Vygotsky's theory of cognitive development is accurate and generally well detailed. Evaluation is effective. The answer is clear, organised 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 appropriate evaluation. The answer is mostly clear and organised. Specialist terminology is mostly used appropriately.	7–9									

	2	Limited knowledge of Vygotsky's theory of cognitive development is present. There is some limited evaluation. 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. Evaluation is limited, poorly focused or absent. The answer lacks clarity, has many inaccuracies and is poorly organised. Specialist terminology is either absent or inappropriately used.	1–3
	0	No creditable content.	

Section C: Research Methods 1

Total for this section: 30 marks

Question	Marking guidance	Total marks
11	<p>What do the mean and standard deviation values in Table 1 suggest about the participants' performances with sleep disruption and without sleep disruption? Justify your answer.</p> <p>Mean: 1 mark for interpreting the mean ie participants perform better on learning and recall without sleep disruption than with sleep disruption.</p> <p>Plus 1 mark for justification ie the mean number of words recalled in Condition 2 (without sleep disruption) is greater than in Condition 1 (with sleep disruption) OR the mean number of words recalled in Condition 1 (with sleep disruption) is lower than in Condition 2 (without sleep disruption).</p> <p>Standard deviation: 1 mark for interpreting what the standard deviations suggest about the spread of scores in each condition eg recall is more consistent/less variable in Condition 2 (without sleep disruption) than Condition 1 (with sleep disruption) OR recall is less consistent/more variable in Condition 1 (with sleep disruption) than Condition 2 (without sleep disruption).</p> <p>Accept alternative wording.</p> <p>Plus 1 mark for justification about the difference in standard deviations between the two conditions ie the standard deviation is smaller in Condition 2 (without sleep disruption) than in Condition 1 (with sleep disruption) OR standard deviation is greater in Condition 1 (with sleep disruption) than Condition 2 (without sleep disruption).</p> <p>Note: 0 marks for just stating the data from the table eg the mean recall for Condition 1 is 9 words whereas for Condition 2 it is 17 words.</p>	<p>4</p> <p>AO2=2 AO3=2</p>

Question	Part	Marking guidance	Total marks
12		<p>Name an appropriate graph to display the mean values shown in Table 1.</p> <p>1 mark for: A bar chart</p>	<p>1</p> <p>AO2=1</p>

Question	Marking guidance	Total marks
13	<p>Briefly explain why the researcher should not generalise these results to all university students.</p> <p>2 marks for a clear explanation.</p> <p>1 mark for a relevant but limited explanation.</p> <p>Content:</p> <ul style="list-style-type: none"> • The sample is only representative of male university students studying a particular subject. • Any results can only therefore be generalised to a similar population of male psychology undergraduates and not females, students on a different subject, non-students etc. <p>Accept other appropriate points.</p>	<p>2</p> <p>AO2=2</p>

Question	Marking guidance	Total marks
14	<p>Identify the type of experiment used in this study. Shade one box only.</p> <p>Answer: B Laboratory</p>	<p>1</p> <p>AO2=1</p>

Question	Marking guidance	Total marks
15	<p>Name the experimental design used in this study. Justify your answer.</p> <p>1 mark for experimental design – repeated measures.</p> <p>1 mark for justification – the same participants took part in Condition 1 (sleep disruption) and Condition 2 (no sleep disruption).</p>	<p>2</p> <p>AO2=2</p>

Question	Marking guidance	Total marks															
16	<p>Write a non-directional hypothesis for this study.</p> <p>There is a difference in the number of words recalled between participants who learned the list of 25 words with sleep disruption (Condition 1) and participants who learned without sleep disruption (Condition 2).</p> <p>Credit null version.</p> <table border="1"> <thead> <tr> <th>Level</th> <th>Descriptor</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>For an appropriate non-directional hypothesis, with both the IV and DV operationalised.</td> <td>3</td> </tr> <tr> <td>2</td> <td>For a non-directional hypothesis with both IV and DV, but lacking clarity or where only one variable is operationalised.</td> <td>2</td> </tr> <tr> <td>1</td> <td>For a muddled non-directional hypothesis with both IV and DV but neither operationalised.</td> <td>1</td> </tr> <tr> <td>0</td> <td>No creditable content.</td> <td></td> </tr> </tbody> </table> <p>Note: no marks for a directional hypothesis.</p>	Level	Descriptor	Marks	3	For an appropriate non-directional hypothesis, with both the IV and DV operationalised.	3	2	For a non-directional hypothesis with both IV and DV, but lacking clarity or where only one variable is operationalised.	2	1	For a muddled non-directional hypothesis with both IV and DV but neither operationalised.	1	0	No creditable content.		<p>3</p> <p>AO2=3</p>
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1	For a muddled non-directional hypothesis with both IV and DV but neither operationalised.	1															
0	No creditable content.																

Question	Marking guidance	Total marks
17	<p>Outline one reason why researchers use counterbalancing.</p> <p>1 mark for each bullet point:</p> <ul style="list-style-type: none"> • To control for a potentially confounding variable (order effects/occurring in repeated measures design) due to the order in which conditions are presented. • Participants can perform better in the second condition due to effects of practice/learning AND/OR participants can perform worse in the second condition due to effects of fatigue/boredom. 	<p>2</p> <p>AO1=2</p>

Question	Marking guidance	Total marks
18	<p>Explain how counterbalancing could have been carried out in this study.</p> <p>1 mark for each bullet point:</p> <ul style="list-style-type: none"> • Half the participants (participants 1–5) first learned a list of 25 words after sleep disruption (Condition 1) followed by learning a list of words without sleep disruption (Condition 2). • The other half of the participants (participants 6–10) first learned a list of 25 words without sleep disruption (Condition 2) followed by learning a list of words with sleep disruption (Condition 1). 	<p>2</p> <p>AO2=2</p>

Question	Marking guidance	Total marks
19	<p>Explain how the five participants could have been randomly selected for the interviews.</p> <p>1 mark for each bullet point:</p> <ul style="list-style-type: none"> • The names of the 10 participants from the original experiment could be placed in a container. • Five names would then be pulled out one at a time from the container. • These five would then be the random sample for the unstructured interview. <p>OR</p> <ul style="list-style-type: none"> • Each of the original 10 participants could be given a number. • These numbers are put into a random number generator (RNG). • Instructions to select five numbers are given and these are the five participants for the random sample. <p>Credit explanation based on alternative methods.</p>	<p>3</p> <p>AO2=3</p>

Question	Marking guidance	Total marks												
20	<p>Briefly discuss one limitation of using unstructured interviews in this study.</p> <p>Possible limitations include:</p> <ul style="list-style-type: none"> • Interviewers need considerable training and skill to conduct unstructured interviews; it is important in this study that the participants are put at ease as learning a word list may have caused anxiety in the study. The interviewer would need to be skilled at this. • Interviewers may unconsciously bias answers; in this study the interviewer might ask a leading question such as “why do you think you performed better without sleep disruption?”. • Unstructured interviews are subject to demand characteristics and social desirability bias. Demand characteristics are particularly relevant to repeated measures design and as the participants in this study learned two lists of words (with and without sleep disruption) they could work out what they thought the researcher was investigating and then provide a ‘please you’ or ‘screw you’ effect. • Unstructured interviews may have ethical implications eg by leading participants to reveal more than they intended. In this study if participants did get anxious when learning lists of words, they may have divulged information about their mental health that they then regretted. • Unstructured interviews are not suitable for participants who have difficulty communicating. In this study participants would be required to talk to the interviewer about their feelings following sleep disruption etc and they may be unable/unwilling to communicate. • Analysis of data can be difficult. The interviews would present qualitative data about learning the lists of words with/without sleep disruption and that would need to be carefully analysed thematically, for example, and this is open to bias etc. <p>Credit other relevant limitations.</p> <table border="1" data-bbox="300 1576 1189 2011"> <thead> <tr> <th data-bbox="300 1576 408 1641">Level</th> <th data-bbox="413 1576 1043 1641">Descriptor</th> <th data-bbox="1048 1576 1189 1641">Marks</th> </tr> </thead> <tbody> <tr> <td data-bbox="300 1648 408 1776">2</td> <td data-bbox="413 1648 1043 1776">A limitation is discussed with some detail. The answer is clear with appropriate use of terminology and link to the study.</td> <td data-bbox="1048 1648 1189 1776">4–3</td> </tr> <tr> <td data-bbox="300 1783 408 1944">1</td> <td data-bbox="413 1783 1043 1944">A limitation is briefly presented but there is little or no discussion or the link to the study may be missing. The answer is limited/vague/muddled.</td> <td data-bbox="1048 1783 1189 1944">2–1</td> </tr> <tr> <td data-bbox="300 1951 408 2011">0</td> <td colspan="2" data-bbox="413 1951 1189 2011">No creditable content.</td> </tr> </tbody> </table>	Level	Descriptor	Marks	2	A limitation is discussed with some detail. The answer is clear with appropriate use of terminology and link to the study.	4–3	1	A limitation is briefly presented but there is little or no discussion or the link to the study may be missing. The answer is limited/vague/muddled.	2–1	0	No creditable content.		<p>4</p> <p>AO2=2 AO3=2</p>
Level	Descriptor	Marks												
2	A limitation is discussed with some detail. The answer is clear with appropriate use of terminology and link to the study.	4–3												
1	A limitation is briefly presented but there is little or no discussion or the link to the study may be missing. The answer is limited/vague/muddled.	2–1												
0	No creditable content.													

Question	Marking guidance	Total marks
21	<p>During the interviews one student reported feeling anxious about the sleep experiment. Briefly explain how the researcher could have dealt with this issue at the end of the study.</p> <p>2 marks for a clear and coherent outline of how the issue would be dealt with.</p> <p>1 mark for a limited or muddled explanation.</p> <p>0 marks if the explanation is not related to after the study.</p> <ul style="list-style-type: none"> • At the end of the interview (as part of the debrief) all the participants would be asked if they felt any harm. • Participants could then be offered counselling (or similar) to deal with the anxiety experienced. <p>The answer may be verbatim.</p>	<p>2</p> <p>AO2=2</p>

Question	Marking guidance	Total marks
22	<p>Explain how this research involved the collection of both qualitative and quantitative data.</p> <p>1 mark for assigning each type of data appropriately (the experiment involved quantitative and the interviews involved qualitative).</p> <p>1 mark for each explanation related to each type of research. In the experiment the number of words recalled was measured and this was numerical data and therefore quantitative; the data collected from the unstructured interviews would be in words – what the participants actually said (non-numerical) and therefore was qualitative.</p>	<p>4</p> <p>AO2=4</p>

PS02 grid

	AO1	AO2	AO3	Total
Section A				
	20	6	4	30
Section B				
	14	6	10	30
Section C				
	2	24	4	30
Unit total	36	36	18	90