



## **General Certificate of Education**

# **Psychology 6181**

*Specification A*

### **Unit 4 (PYA4)**

**Social Psychology, Physiological Psychology,  
Cognitive Psychology, Developmental  
Psychology and Comparative Psychology**

## **Mark Scheme**

*2007 examination - June series*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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

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**QUALITY OF WRITTEN COMMUNICATION  
(QoWC)**

<b>Band 3</b>	The work is characterised by some or all of the following: <ul style="list-style-type: none"> <li>• clear expression of ideas</li> <li>• use of a good range of specialist terms</li> <li>• few errors of grammar, punctuation and spelling.</li> </ul>	<b>4-3 marks</b>
<b>Band 2</b>	The work is characterised by: <ul style="list-style-type: none"> <li>• reasonable expression of ideas</li> <li>• the use of some specialist terms</li> <li>• reasonable grammar, punctuation and spelling.</li> </ul>	<b>2-1 marks</b>
<b>Band 1</b>	The work is characterised by: <ul style="list-style-type: none"> <li>• poor expression of ideas</li> <li>• the use of a limited range of specialist terms</li> <li>• poor grammar, punctuation and spelling.</li> </ul>	<b>0 marks</b>

**PYA4 ASSESSMENT OBJECTIVE 1**

	<b>Content</b>	<b>Detail and accuracy</b>	<b>Organisation &amp; structure</b>	<b>Breadth and depth</b>
<b>12-11</b>	Substantial	Accurate and well-detailed	Coherent	Substantial evidence of both and balance achieved
<b>10-9</b>	Slightly limited	Accurate & reasonably detailed	Coherent	Evidence of both but imbalanced
<b>8-7</b>	Limited	Generally accurate & reasonably detailed	Reasonably constructed	Increasing evidence of breadth and/or depth
<b>6-5</b>	Basic	Generally accurate, lacks detail	Reasonably constructed	Some evidence of breadth and/or depth
<b>4-3</b>	Rudimentary	Sometimes flawed	Sometimes focused	
<b>2-0</b>	Just discernible	Weak/muddled/inaccurate	Wholly/ mainly irrelevant	

**PYA4 ASSESSMENT OBJECTIVE 2**

	<b>Evaluation is</b>	<b>Material is used</b>	<b>Selection and elaboration</b>
<b>12-11</b>	Thorough	Highly effective	Appropriate selection and coherent elaboration
<b>10-9</b>	Slightly limited	Effective	Appropriate selection and elaboration
<b>8-7</b>	Limited	Reasonably effective	Reasonable elaboration
<b>6-5</b>	Basic	Restricted	Some evidence of elaboration
<b>4-3</b>	Superficial and rudimentary	Not effective	No evidence of elaboration
<b>2-0</b>	Muddled and incomplete		Wholly or mainly irrelevant

### **General Note**

In general, and unless otherwise indicated by the specific question and its marking scheme, description of research studies may be credited as AO1 or AO2. The critical element for AO2 credit is whether the research study is *explicitly* introduced as part of evaluation/commentary and findings/conclusions similarly linked as part of sustained evaluation/commentary ('topped and tailed'). If this is the case then the *whole* presentation of a research study should be credited as AO2. Otherwise the study may earn AO1 marks.

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**SECTION A: SOCIAL PSYCHOLOGY****1****Total for this question: 24 marks**

Discuss <b>one or more</b> theories relating to the attribution of causality. (24 marks)
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**AO1**

There are several attribution theories relevant to the AO1 requirements of this question, including the correspondent inference theory (Jones & Davis), Kelley's co-variation and causal schemata models, and Weiner's attribution model. Candidates are often tempted in these questions to describe errors and biases in the attribution process; errors and biases are derived directly from theories and so may receive limited AO1 credit, which would increase to the extent that they are explicitly embedded in theories. Attribution approaches that do not focus on *causality*, but perhaps on personal characteristics, cannot earn marks.

For candidates covering more than one theory there will be a depth-breadth trade-off reflected in the marks awarded.

Description of studies may earn AO1 marks insofar as they *enhance* the description of a theory rather than being used explicitly as AO2 material.

**AO2**

Effective AO2 could consist of findings of research studies used explicitly to support or contradict models/theories. Otherwise such studies might earn AO1 marks (see above). Commentary on the feasibility or otherwise of assumptions of the model/theory would also be relevant, including methodological weaknesses of supporting evidence, eg whether laboratory studies convincingly replicate the ways people operate in real life. Also effective would be the introduction of alternative theories to contrast with the target theory (ies). AO2 marks earned in this way would depend upon the use of such alternatives as part of sustained and effective evaluation/commentary.

**AO1: Description of one or more theories relating to the attribution of causality.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Description of one or more theories relating to the attribution of causality is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Description of one or more theories relating to the attribution of causality is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Description of one or more theories relating to the attribution of causality is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Description of one or more theories relating to the attribution of causality is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Description of one or more theories relating to the attribution of causality is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Description of one or more theories relating to the attribution of causality is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of one or more theories relating to the attribution of causality.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of one or more theories relating to the attribution of causality is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of one or more theories relating to the attribution of causality is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of one or more theories relating to the attribution of causality is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of one or more theories relating to the attribution of causality is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of one or more theories relating to the attribution of causality is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of one or more theories relating to the attribution of causality is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**2****Total for this question: 24 marks**

(a)	Outline <b>two</b> explanations of interpersonal attraction (eg matching hypothesis, evolutionary explanations).	<i>(12 marks)</i>
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(b)	Evaluate <b>one</b> of the explanations of interpersonal attraction you have outlined in your answer to part (a).	<i>(12 marks)</i>
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**AO1**

Candidates are likely to focus on the two explanations mentioned in the question and taken directly from the Specification. Another popular area may be the factors that have been shown to be important in initial attraction, such as proximity and familiarity. Though these do not necessarily constitute an organised explanation of attraction they are usually presented together and are acceptable as an explanation for the purposes of this question (especially, of course, if embedded in the filter theory of attraction).

Questions from this section of the Specification often elicit models drawn from relationship formation/maintenance. Such models can deal with the initial stages of relationships and be 'shaped' towards interpersonal attraction. If this link is explicit and coherent, such models should be accepted.

Candidates are required to present two explanations. Those outlining only one are exhibiting partial performance and can receive a maximum of 8 marks for AO1.

**AO2**

Research evidence is widely available in this area and is the likeliest source of AO2 material. Evaluation of the studies themselves should be credited to the extent that evaluation is elaborated and contextualised. If not contextualised, evaluation of studies can earn a maximum of 6 marks. Other relevant issues may be inherent cultural or gender biases in studies and explanations, and the power of explanations to deal with, eg understudied relationships and computer mediated communication. These latter issues could also form part of general commentary.

Alternative explanations may be introduced. Insofar as these form part of sustained and coherent commentary on the target explanation they may earn AO2 marks. If simply described they may be eligible for AO1 marks under the exporting rule, but otherwise would not earn marks.

If *both* explanations are evaluated in part (b), both should be marked and the best credited. Although unlikely, evaluation of the second explanation may contribute to AO1 marks *if* not used as *relevant* AO2 material in part (b).

Under the exporting rule, material that would not earn marks in the question part in which it is presented but would do so in the other question part, should be exported to that question part. This may particularly be the case with research studies that are explicitly presented in part (a) as evaluative material.



**AO1: Outline of two explanations of interpersonal attraction.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of two explanations of interpersonal attraction is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> with a reasonable balance in the coverage of two explanations.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of two explanations of interpersonal attraction is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> with a reasonable balance in the coverage of two explanations.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of two explanations of interpersonal attraction is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with a fair balance in the coverage of two explanations. <i>Partial performance is substantial, accurate and well-detailed (top of band) or slightly limited, accurate and reasonably detailed (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of two explanations of interpersonal attraction is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with a fair balance in the coverage of two explanations. <i>Partial performance is limited, generally accurate and reasonably detailed.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Outline of two explanations of interpersonal attraction is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> , with some coverage of two explanations. <i>Partial performance is basic, generally accurate and lacking detail.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of two explanations of interpersonal attraction is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> to the question's requirement. <i>Partial performance is rudimentary and sometimes flawed with little focus on the question.</i>	<b>2-0</b>

**AO2: Evaluation of one explanation of interpersonal attraction.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of one explanation of interpersonal attraction is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of one explanation of interpersonal attraction is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of one explanation of interpersonal attraction is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of one explanation of interpersonal attraction is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of one explanation of interpersonal attraction is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of one explanation of interpersonal attraction is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**3****Total for this question: 24 marks**

Outline and evaluate studies relating to human altruism <b>and/or</b> bystander behaviour.
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**(24 marks)****AO1**

Now that these two areas are combined, candidates have a wealth of AO1 material available. Studies of altruism (eg in the context of Batson's empathy-altruism model, Cialdini's negative state relief approach, Eisenberg's prosocial reasoning, kin selection) and bystander behaviour (eg Latane & Darley and Piliavin's work) are many and varied. Candidates may focus on human altruism, bystander intervention, or select studies from both areas. Answers will vary in the level of accurate detail, particularly important in relation to studies of empathy-altruism and negative-state relief. Kitty Genovese is an example of a real life incident that has been used consistently to illustrate aspects of bystander behaviour, and as such is acceptable as a relevant study although accurate description is a key issue.

Note that descriptions of explanations/models cannot earn AO1 credit, although they may form part of AO2 analysis and evaluation of studies.

**AO2**

The emphasis in this question is on research studies, but a key area for evaluation might be the relationship between findings and explanations/models. As such, the *implications* of research findings for explanations/models would be a likely route to marks in Band 3.

Candidates are likely to focus on evaluation of research studies, in terms of, eg ecological validity, reliability, sampling, gender and culture bias, etc. This is a legitimate approach to AO2 credit, but unless such limitations are elaborated and contextualised they are unlikely to move out of Band 1 for AO2. If done well, though, such answers could receive marks across the scale. Other commentary, such as the problems of defining and investigating altruism, may earn AO2 marks but must be discussed in relation to studies rather than explanations. The question is also about *human* altruism/bystander behaviour, and studies on non-human animals are unlikely to be creditworthy unless clearly embedded as AO2 commentary/evaluation relevant to human studies.

There are no partial performance issues on this question. The rare answer that refers only to one study is anyway likely to be superficial and rudimentary.

**AO1: Outline of studies relating to human altruism/bystander behaviour.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of studies relating to human altruism and/or bystander behaviour is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of studies relating to human altruism and/or bystander behaviour is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of studies relating to human altruism and/or bystander behaviour is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of studies relating to human altruism and/or bystander behaviour is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Outline of studies relating to human altruism and/or bystander behaviour is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of studies relating to human altruism and/or bystander behaviour is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of studies relating to human altruism/bystander behaviour.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of studies relating to human altruism and/or bystander behaviour is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of studies relating to human altruism bystander behaviour is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of studies relating to human altruism and/or bystander behaviour is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of studies relating to human altruism and/or bystander behaviour is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of studies relating to human altruism and/or bystander behaviour is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of studies relating to human altruism and/or bystander behaviour is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**SECTION B: PHYSIOLOGICAL PSYCHOLOGY****4****Total for this question: 24 marks**

Outline and evaluate methods used to investigate the brain.
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(24 marks)
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**AO1**

There is no requirement for candidates to select one invasive and one non-invasive method, but they must cover at least two methods. Non-invasive methods include electrical recording (EEG and evoked potentials), various scanning techniques (CT, MRI, PET, functional MRI, MEG, and the recent transcranial magnetic stimulation or TMS). Invasive techniques are less common now, but candidates are likely to introduce various types of lesioning methods, and perhaps invasive electrical stimulation and recording.

An issue in this area is that candidates may use superordinate categories such as 'scanning' or 'imaging'. As long as this is explicitly stated this approach is acceptable. A potential problem however is if they cover only *one explicit* superordinate category, such as scanning, despite outlining several types of scanning in their answer. In this case we should work on the candidate's behalf and partial performance would not be an issue.

There may also be breadth/depth trade-offs, with less depth required of candidates who cover several methods of investigating the brain.

Candidates who clearly outline only one method are exhibiting partial performance, and can receive a maximum of 8 marks for AO1 and AO2.

**AO2**

The Specification refers to strengths and limitations of methods, and these are likely to form the basis of evaluation. Answers in this area have improved over the years and answers may refer to the spatial and temporal resolution of scanning, imaging, and perhaps electrical recording methods. A key aspect is the difference between structural and functional imaging techniques. Practical issues such as the arduous nature of some procedures and ethical aspects of, eg lesioning work in non-human animals would also be relevant.

Another relevant area would be the contribution of methods to our understanding of brain function in normal and abnormal behaviour; eg identifying mechanisms underlying language and perception, or locating structural damage in disorders such as schizophrenia. To be fully effective such commentary should be clearly linked to evaluation rather than simply listing relevant studies.

Although candidates are likely to focus on evaluating the methods outlined, this is not explicitly required and evaluation related to other methods or to more general issues can receive marks across the scale.

**AO1: Outline of methods used to investigate the brain.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of methods used to investigate the brain is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of methods used to investigate the brain is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> with <b>evidence</b> of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of methods used to investigate the brain is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth. <i>Partial performance is substantial, accurate and well-detailed (top of band) or slightly limited, accurate and reasonably detailed (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of methods used to investigate the brain is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth. <i>Partial performance is limited, generally accurate and reasonably detailed.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Outline of methods used to investigate the brain is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> . <i>Partial performance is basic, generally accurate and lacking detail.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of methods used to investigate the brain is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> to the question's requirement. <i>Partial performance is rudimentary and sometimes flawed with little focus on the question.</i>	<b>2-0</b>

**AO2: Evaluation of methods used to investigate the brain.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of methods used to investigate the brain is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of methods used to investigate the brain is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of methods used to investigate the brain is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> . <i>Partial performance is thorough, coherent, and shows highly effective use of material (top of band) or slightly limited with effective use of material (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of methods used to investigate the brain is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> . <i>Partial performance is limited with reasonable elaboration, with reasonably effective use of material.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of methods used to investigate the brain is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> . <i>Partial performance is basic with some evidence of elaboration; restricted use of material.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of methods used to investigate the brain is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> . <i>Partial performance is superficial with no evidence of elaboration, and material is not used effectively.</i>	<b>2-0</b>

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**5****Total for this question: 24 marks**

<b>(a)</b>	Outline the restoration theory of sleep.	<b>(6 marks)</b>
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<b>(b)</b>	Outline findings from studies of sleep deprivation. Consider the implications of such findings for theories of sleep.	<b>(18 marks)</b>
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**(a) AO1**

The restoration theory of sleep is mainly associated with the ideas of Oswald and Horne, that sleep is a time for the restoration of psychological and physiological processes 'expended' during waking behaviour. Oswald's neat distinction between REM (for brain restoration) and SWS (for body restoration) is contradicted by Horne, who considers REM and deep SWS crucial for brain restoration, while body restoration occurs during relaxed wakefulness. There is no requirement for candidates to cover both accounts for marks across the scale. Ecological/evolutionary accounts are not creditworthy.

AO2 material in this section should be considered under the exporting rule. Material not earning marks in one section that would earn marks in another section should be exported to that section.

**(b) AO1**

Sleep deprivation is an area where a number of studies are available to candidates. The striking but uncontrolled early case studies of Tripp and Gardner are likely to figure centrally, and in addition the controlled studies of, eg Horne would be important. The question emphasises 'findings'; however some aspects of methods/procedures could be important in understanding and evaluating findings, in which case AO1 credit can be given.

Candidates are also likely to refer to the many non-human animal studies on sleep deprivation. These are directly relevant, but note that only 6 marks are available, and coverage of both human and non-human animal work is not necessary for marks across the range.

**(b) AO2**

Findings from studies of sleep deprivation are key elements in evaluating theories of the functions of sleep. The restoration ideas of, eg Horne and Oswald rely heavily on the effects of deprivation on behaviour in general and cognitive processes in particular, and for marks in Band 3 candidates should be able to describe the implications for theories of sleep function explicitly and accurately. The less controlled case studies provide evidence for the general effects of sleep deprivation, but to be fully effective such material needs to be linked to theories. If recognised theories are not mentioned, such answers are unlikely to move out of Band 1. There is no requirement for candidates to consider only the restoration theory. Findings may have implications for, eg ecological/evolutionary accounts, and if used in this way can earn AO2 marks.

The dominant finding from studies of sleep deprivation in non-human animals relate to the physical and terminal effects of sleep deprivation. Insofar as this relates to the overriding theory that sleep is essential for survival, such material can earn marks if the link is explicit.

Although AO2 should focus on the implications of findings for theories, evaluation of the studies themselves, in terms of methodological and ethical issues perhaps, could affect the validity of studies and their value in relation to theories. However, to move out of Band 1 for AO2, such evaluation must refer explicitly to the relationship between studies and theories.

Candidates discussing only **one** finding from **one** study are technically showing partial performance. However such answers are likely to be weak and muddled, and there are no formal partial performance criteria on this question.

**(a) AO1: Outline of the restoration theory of sleep.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of the restoration theory of sleep is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> .	<b>6</b>
<b>Band 3 Bottom</b>	Outline of the restoration theory of sleep is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> .	<b>5</b>
<b>Band 2 Top</b>	Outline of the restoration theory of sleep is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> .	<b>4</b>
<b>Band 2 Bottom</b>	Outline of the restoration theory of sleep is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> .	<b>3</b>
<b>Band 1 Top</b>	Outline of the restoration theory of sleep is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>2</b>
<b>Band 1 Bottom</b>	Outline of the restoration theory of sleep is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>0-1</b>

**(b) AO1: Outline of findings from studies of sleep deprivation.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of findings from studies of sleep deprivation is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> .	<b>6</b>
<b>Band 3 Bottom</b>	Outline of findings from studies of sleep deprivation is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> .	<b>5</b>
<b>Band 2 Top</b>	Outline of findings from studies of sleep deprivation is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> .	<b>4</b>
<b>Band 2 Bottom</b>	Outline of findings from studies of sleep deprivation is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> .	<b>3</b>
<b>Band 1 Top</b>	Outline of findings from studies of sleep deprivation is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>2</b>
<b>Band 1 Bottom</b>	Outline of findings from studies of sleep deprivation is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>0-1</b>

**(b) AO2: Consideration of the implications of such findings for theories of sleep.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Consideration of the implications of such findings for theories of sleep is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Consideration of the implications of such findings for theories of sleep is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Consideration of the implications of such findings for theories of sleep is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Consideration of the implications of such findings for theories of sleep is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Consideration of the implications of such findings for theories of sleep is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Consideration of the implications of such findings for theories of sleep is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>



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**6****Total for this question: 24 marks**

Discuss the role of brain structures in emotion.	(24 marks)
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**AO1**

Limbic structures such as the hippocampus, amygdala, septum, hypothalamus etc have always been linked to emotion and emotional behaviour. More recent work implicates forebrain areas such as the cingulate gyrus and prefrontal cortex, but more historical material would be sufficient for marks across the range. Description of the role of brain structures could include a range of methodologies, as much of the pioneering work focused on non-human animals and intense emotions such as rage and fear. More recent scanning techniques have told us more about human emotional behaviours such as face emotional expression recognition.

Some candidates may refer to theories of emotion such as James-Lange and Cannon-Bard. Unless there is explicit reference to *brain structures* (as in the role of thalamus and hypothalamus in Cannon-Bard's model), such material cannot receive credit.

In questions such as this candidates may use *studies* either as *illustrating* the role of brain structures in emotion (AO1), or as *explicit* support for the role of brain structures in emotion (AO2).

**AO2**

The most effective form of AO2 would be the use of empirical studies to support and inform the role of brain structures in emotion. There are many experimental studies on non-human animals, mainly lesion and electrical stimulation, and human case studies and some evidence from psychosurgery, (eg frontal lobotomy in schizophrenia). As pointed out above studies must be used explicitly as AO2 to earn marks in this category.

Higher level commentary could include the problems of defining emotion, methodological problems with many of the studies, (eg extrapolating from non-human animals to humans), and the role of factors *outside* the brain in emotional behaviour and experience, such as hormones and the ANS. Such material must be shaped to the question to earn marks.

**AO1: Description of the role of brain structures in emotion.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Description of the role of brain structures in emotion is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Description of the role of brain structures in emotion is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Description of the role of brain structures in emotion is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Description of the role of brain structures in emotion is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Description of the role of brain structures in emotion is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Description of the role of brain structures in emotion is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of the role of brain structures in emotion.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of the role of brain structures in emotion is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of the role of brain structures in emotion is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of the role of brain structures in emotion is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of the role of brain structures in emotion is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of the role of brain structures in emotion is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of the role of brain structures in emotion is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**SECTION C: COGNITIVE PSYCHOLOGY****7****Total for this question: 24 marks**

Outline and evaluate <b>one or more</b> theories of face recognition.
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*(24 marks)***AO1**

The most likely theory of face recognition is the Bruce and Young model (originally 1986 but variously developed over the next 15 years). Outline should include an awareness of the processing modules (eg structural encoding, expression analysis, facial speech analysis, face recognition units, cognitive system, Valentine's work on the role of motion in face recognition etc), and the idea of sequential and parallel processing. Answers are likely to vary in the depth of accurate detail. There are other models of face recognition, especially from the connectionist and computational modelling areas (eg Burton, 1994; Marr, 1982). The question does not rule out such alternative theories of face recognition, or others that might be rooted in, eg neurophysiology. Credit should be given for any theories that address the problem of face recognition.

**AO2**

As this is a fairly contemporary area of research, there is no shortage of research evidence carried out to test the assumptions of theories, including controlled experimental studies, scanning studies, and case studies of brain-damaged humans. The Bruce and Young model has been subjected to perhaps the most rigorous empirical testing, and therefore candidates should be aware of studies appropriate to this part of the question. Alternative theories/models may also be used to evaluate a target theory such as Bruce and Young, although such alternatives must be used explicitly as evaluative material to earn AO2 marks.

AO2 material may also include general commentary on theories, such as the lack of detail in the Bruce and Young model regarding the 'cognitive system'.

For candidates discussing more than one theory there will inevitably be a depth/breadth trade-off in AO1 and AO2 which should be taken into account in marking.

**AO1: Outline of one or more theories of face recognition.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of one or more theories of face recognition is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of one or more theories of face recognition is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of one or more theories of face recognition is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of one or more theories of face recognition is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Outline of one or more theories of face recognition is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of one or more theories of face recognition is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of one or more theories of face recognition.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of one or more theories of face recognition is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of one or more theories of face recognition is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of one or more theories of face recognition is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of one or more theories of face recognition is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of one or more theories of face recognition is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of one or more theories of face recognition is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**8****Total for this question: 24 marks**

Outline and evaluate studies of the development of perceptual abilities.
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(24 marks)
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**AO1**

There are a variety of studies available to candidates in the area of perceptual development, including classic work on face recognition, depth perception, and the development of perceptual constancies such as size and shape. Neurophysiological investigations of visual development would also be relevant. Candidates may be tempted to use cross-cultural work on, eg visual illusions and size constancy, but although this is an area directly relevant to the nature/nurture debate these studies are not themselves focused on perceptual *development*. Therefore, unless a candidate makes a coherent argument for their relevance to perceptual development (eg that they show differential development of abilities across cultures), they cannot earn credit. Similarly, work with eg non-human animals could earn credit if made relevant to perceptual development

The question concerns studies rather than theories/explanations. Description of theories/explanations is therefore not creditworthy as AO1 material.

**AO2**

The most straightforward source of AO2 for this question would be the evaluation of individual studies in terms of methodology (eg problems of extrapolating data from non-human animals), or in the interpretation of results (eg visual cliff infants not being totally naïve). Limitations such as ecological validity and cultural specificity should only earn marks if clearly contextualised and justified.

A further source would be their relevance to theories of perceptual development, in particular the nature/nurture debate. Either approach would be valid. However, to earn marks the latter approach would have to focus on studies and their relevance to theories, rather than on descriptions of the theories themselves. General commentary and discussion on the nature/nurture debate would be unlikely to earn marks.

Although the question refers to perceptual *abilities* it is not intended that this question should carry a plurality requirement for either studies or abilities. Candidates covering two or more abilities would be exhibiting breadth in their response and would also benefit from increasing their AO2 opportunities, while those restricting themselves to either single studies and/or single abilities would be likely to produce superficial answers.

**AO1: Outline of studies of the development of perceptual abilities.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of studies of the development of perceptual abilities is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of studies of the development of perceptual abilities is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of studies of the development of perceptual abilities is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of studies of the development of perceptual abilities is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Outline of studies of the development of perceptual abilities is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of studies of the development of perceptual abilities is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of research studies of the development of perceptual abilities.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of studies of the development of perceptual abilities is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of studies of the development of perceptual abilities is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of studies of the development of perceptual abilities is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of studies of the development of perceptual abilities is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of studies of the development of perceptual abilities is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of studies of the development of perceptual abilities is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

9

**Total for this question: 24 marks**Outline and evaluate **two** explanations of language development.**(24 marks)****AO1**

AO1 material is likely to focus on behaviourist (Skinner) and nativist (Chomsky) explanations of language development, or the nurture and nature approaches. These are well-established and accessible models, although answers will vary in the degree of accurate detail provided. Less likely but equally acceptable would be interactionist perspectives such as Slobin's.

Also popular may be approaches emphasising the *process* of language acquisition and focusing on the stages of acquisition and the characteristics of each stage. Although essentially *descriptive*, it can be difficult to distinguish these approaches from more explicit *explanations*. However unless such descriptions are explicitly linked to explanations or to the 'how' of language development, they are unlikely to move out of the Band 1 for AO1. Potentially, such descriptions may qualify as AO2 material if used to assess the *credibility* of particular explanations.

Questions on language and language development may also elicit material from topics such as language and thought, and language and language learning in non-human animals. Such material is not automatically excluded as long as the focus is on *developmental* aspects and not, for instance, on sign language acquisition in apes.

Two explanations are required and candidates outlining only one are showing partial performance and can earn a maximum of 8 marks for AO1. If candidates outline more than two, all should be assessed and the best two credited. There should be a reasonable balance in coverage of two explanations for marks in the top band.

**AO2**

Evaluation of explanations may take various forms. Empirical research support is not easily accessible in this area, and more likely would be more general commentary on how well an explanation explains the characteristics of language acquisition, eg the rate and stages (see above) of language acquisition, the existence of linguistic universals, the role of social and cultural factors, etc.

Evidence for critical periods for language development, such as privation and deprivation studies, would earn marks *only* if explicitly linked as evaluation of the target explanations.

Candidates are required to evaluate *two* explanations and those evaluating only one are exhibiting partial performance and can earn a maximum of 8 marks for AO2.



**AO1: Outline of two explanations of language development.**

Band	Mark Allocation	Marks
<b>Band 3 Top</b>	Outline of two explanations of language development is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> with a reasonable balance in the coverage of two explanations.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of two explanations of language development is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> with a reasonable balance in the coverage of two explanations.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of two explanations of language development is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with a fair balance in the coverage of two explanations. <i>Partial performance is substantial, accurate and well-detailed (top of band) or slightly limited, accurate and reasonably detailed (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of two explanations of language development is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with a fair balance in the coverage of two explanations. <i>Partial performance is limited, generally accurate and reasonably detailed.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Outline of two explanations of language development is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> , with at least some coverage of two explanations. <i>Partial performance is basic, generally accurate and lacking detail.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of two explanations of language development is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> to the question's requirement. <i>Partial performance is rudimentary and sometimes flawed with little focus on the question.</i>	<b>2-0</b>

**AO2: Evaluation of two explanations of language development.**

Band	Mark Allocation	Marks
<b>Band 3 Top</b>	Evaluation of two explanations of language development is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of two explanations of language development is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of two explanations of language development is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> . <i>Partial performance is thorough, coherent, and shows highly effective use of material (top of band) or slightly limited with effective use of material (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of two explanations of language development is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> . <i>Partial performance is limited with reasonable elaboration, with reasonably effective use of material.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of two explanations of language development is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> . <i>Partial performance is basic with some evidence of elaboration; restricted use of material.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of two explanations of language development is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> . <i>Partial performance is superficial with no evidence of elaboration, and material is not used effectively.</i>	<b>2-0</b>

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**SECTION D: DEVELOPMENTAL PSYCHOLOGY****10****Total for this question: 24 marks**

Discuss **one or more** theories of moral understanding **and/or** pro-social reasoning. (24 marks)

**AO1**

This question is taken from the subsection of the Specification covering the development of moral understanding, and theories of *cognitive development* making no reference to moral understanding cannot receive credit. Theories of the development of moral understanding and/or pro-social reasoning given as examples are Kohlberg and Eisenberg, while Piaget is also likely to be popular. Some candidates may introduce general approaches to the development of moral behaviour such as social learning or Freudian theory. Given the problem of distinguishing moral *understanding* from moral *behaviour* such approaches would be acceptable. Piaget and Kohlberg may also be considered as representing a single 'cognitive-developmental' perspective, and as long as this is clear this is also an acceptable approach to the question.

Due to question-setting rules the term *development* does not occur in the question. Therefore non-developmental approaches to moral understanding and/or pro-social reasoning are acceptable.

**AO2**

Theories may be evaluated in a variety of ways. Research findings may support or contradict, and research studies themselves may be evaluated as their validity influences how relevant they can be. However, credit for evaluation of studies is limited to Band 1 *unless* it is explicitly linked to evaluation of the theory. Other more general issues include gender and culture bias in theories.

An effective method of accessing AO2 marks would be to introduce alternative theories and/or explanations. These may receive AO2 credit if their use is explicit and part of sustained and effective evaluation. If alternatives are simply described they may earn AO1 marks.

**AO1: Description of one or more theories of moral understanding and/or pro-social reasoning.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Description of one or more theories of moral understanding and/or pro-social reasoning is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Description of one or more theories of moral understanding and/or pro-social reasoning is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Description of one or more theories of moral understanding and/or pro-social reasoning is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Description of one or more theories of moral understanding and/or pro-social reasoning is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Description of one or more theories of moral understanding and/or pro-social reasoning is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Description of one or more theories of moral understanding and/or pro-social reasoning is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of one or more theories of moral understanding/pro-social reasoning.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of one or more theories of moral understanding and/or pro-social reasoning is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of one or more theories of moral understanding and/or pro-social reasoning is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of one or more theories of moral understanding and/or pro-social reasoning is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of one or more theories of moral understanding and/or pro-social reasoning is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of one or more theories of moral understanding and/or pro-social reasoning is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of one or more theories of moral understanding and/or pro-social reasoning is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**11****Total for this question: 24 marks**

Outline and evaluate research into the formation of identity in adolescence.	(24 marks)
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**AO1**

This question allows for both *theories* and *studies* related to identity formation in adolescence. Thus, candidates are likely to outline Erikson's psychosocial theory, Coleman's focal theory, as well as Marcia's research on identity formation. Whichever theory and/or studies are chosen, it is important that candidates focus only on *adolescence*, and specifically on identity formation as the primary task of adolescence. An issue in this part of the Specification is that candidates may present essays on adolescence that fail to focus on the specific topic of the question. In these cases examiners should identify and only credit material relevant to identity formation.

Alternative approaches to development, such as psychodynamic and social learning, are unlikely to be relevant, but can be credited for any material relevant to identity formation in *adolescence*.

**AO2:**

Evaluation may be accomplished in many ways, including research support for a particular theoretical position, the ability of a particular position to 'fit the facts' (such as its view on the 'storm and stress' assertion), methodological problems of research studies (although issues such as ecological validity or androcentrism can only earn AO2 marks if contextualised), or the conclusions that might be drawn from these studies. It is possible that candidates may use research studies to demonstrate support (or challenge) for a particular theoretical position. These can earn AO2 credit if used as part of sustained and contextualised commentary. However, candidates who merely *describe* these research studies or theories should have such material credited as AO1.

**AO1: Outline of research into the formation of identity in adolescence.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of research into the formation of identity in adolescence is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of research into the formation of identity in adolescence is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of research into the formation of identity in adolescence is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of research into the formation of identity in adolescence is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Outline of research into the formation of identity in adolescence is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of research into the formation of identity in adolescence is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of research into the formation of identity in adolescence.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of research into the formation of identity in adolescence is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of research into the formation of identity in adolescence is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of research into the formation of identity in adolescence is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of research into the formation of identity in adolescence is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of research into the formation of identity in adolescence is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of research into the formation of identity in adolescence is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**12****Total for this question: 24 marks**

‘Research has shown that coping with bereavement usually involves a series of stages, and may vary across different cultures.’

Discuss research into how people cope with bereavement.

(24 marks)

**AO1**

Candidates may describe research studies and/or theories for AO1 credit. This is an area where much work is more *descriptive*, although based on interview data (eg Kubler-Ross’s research), but can reflect theoretical insights and as such the work of eg Kubler-Ross on the stages of dying, Ramsay & de Groot’s components of grief, Stroebe et al’s analysis of the effects of bereavement on social functioning, or Murray-Parkes stages of grieving may earn AO1 credit. Additionally more focused research on the role of, for instance, social support or the psychological and/or illness outcomes of bereavement, would also be directly relevant to this question. Whether this type of material qualifies for AO1 or AO2 credit will depend on precisely how it is used.

The Specification also refers to cultural differences in coping with bereavement and the quote is intended to remind candidates of this aspect. If cultural differences are simply described without additional commentary they should be credited as AO1.

**AO2**

Evaluation may involve a variety of approaches, including empirical support for theoretical models, evaluation of coping strategies, development of bereavement counselling on the basis of models, and individual differences (eg gender) in coping strategies. Cultural differences would be an effective means of accessing AO2 credit if used explicitly as commentary on the nature and variation in coping with bereavement across cultures. For marks in the higher bands candidates might be expected to develop their discussion of cultural differences, eg by considering underlying belief systems and/or the implications of such differences.

**AO1: Description of research into how people cope with bereavement.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Description of research into how people cope with bereavement is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Description of research into how people cope with bereavement is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Description of research into how people cope with bereavement is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Description of research into how people cope with bereavement is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Description of research into how people cope with bereavement is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Description of research into how people cope with bereavement is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of research into how people cope with bereavement.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of research into how people cope with bereavement is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of research into how people cope with bereavement is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of research into how people cope with bereavement is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of research into how people cope with bereavement is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of research into how people cope with bereavement is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of research into how people cope with bereavement is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**SECTION E: COMPARATIVE PSYCHOLOGY****13****Total for this question: 24 marks**

(a)	Outline the nature of classical <b>and</b> operant conditioning.	(12 marks)
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(b)	Evaluate the role of conditioning in the behaviour of non-human animals.	(12 marks)
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**AO1**

At a basic level, candidates should be aware of key elements of classical and operant conditioning, such as automatic reflexive behaviour versus voluntary operant behaviour, and the notion of associating stimuli, responses and rewards. Description of the original paradigms (Pavlov and Skinner/Thorndike) would be effective ways of outlining the main principles, while better answers should be able to refer to generalisation, extinction, discrimination, schedules of reinforcement, etc. There will be great variation in the level of understanding and accurate description, while the question requires the candidate to address both classical and operant conditioning. Answers covering only one can earn a maximum of 8 marks for AO1.

**AO2**

Candidates often find this question difficult, and may simply re-describe the original work of Pavlov and Skinner/Thorndike. This is technically relevant and can earn AO2 marks, but the same *description* should not be credited under both AO1 and AO2. Classical conditioning is relevant to areas such as taste aversion learning, but there is probably more material available for the role of operant conditioning, in particular the function of rewards and punishment in foraging, mating, hunting, etc. Comparison with other forms of learning such as cognitive mapping and observational learning (imitation) would be an excellent way of *evaluating* the role of conditioning in animal behaviour.

Examples of the use of conditioning by animals are basic to evaluating the role and can earn AO2 marks. However answers limited to examples can earn a maximum of 8 marks for AO2 if detailed and accurate. To access Band 3 there must be some explicit attempt to *assess* the role of conditioning in the behaviour of non-human animals.

There is no partial performance associated with part (b).

If a candidate includes material that is clearly relevant and would earn *some* marks in one part of a question, it should remain there for the purposes of determining marks regardless of whether it might earn *more* marks in the other question part. If the material would earn *no* marks in one part of the question but would earn marks in the other, it should be '*exported*' for the purposes of determining marks to that part.



**AO1: Outline of the nature of classical and operant conditioning.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of the nature of classical and operant conditioning is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with a reasonable balance in the coverage of classical and operant conditioning.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of the nature of classical and operant conditioning is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with a reasonable balance in the coverage of classical and operant conditioning.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of the nature of classical and operant conditioning is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with a fair balance in the coverage of classical and operant conditioning. <i>Partial performance is substantial, accurate and well-detailed (top of band) or slightly limited, accurate and reasonably detailed (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of the nature of classical and operant conditioning is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with a fair balance in the coverage of classical and operant conditioning. <i>Partial performance is limited, generally accurate and reasonably detailed.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Outline of the nature of classical and operant conditioning is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> , with at least some coverage of classical and operant conditioning. <i>Partial performance is basic, generally accurate and lacking detail.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of the nature of classical and operant conditioning is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> . <i>Partial performance is rudimentary and sometimes flawed with little focus on the question.</i>	<b>2-0</b>

**AO2: Evaluation of the role of conditioning in the behaviour of non-human animals.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of the role of conditioning in the behaviour of non-human animals is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of the role of conditioning in the behaviour of non-human animals is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of the role of conditioning in the behaviour of non-human animals is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of the role of conditioning in the behaviour of non-human animals is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of the role of conditioning in the behaviour of non-human animals is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of the role of conditioning in the behaviour of non-human animals is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

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**14****Total for this question: 24 marks**

Outline and evaluate the role of memory in navigation and foraging behaviour in non-human animals. (24 marks)

**AO1**

There are many studies in the areas of navigation and foraging for candidates to refer to, and work on cognitive maps and spatial memory is likely to be popular. These studies may be used as AO1 material to *illustrate* the role of memory in navigation and foraging, or explicitly as *supporting evidence* for relevant explanations/models, ie as AO2. Description of explanations/models would also qualify for AO1 marks.

It is essential that candidates focus on the role of memory in these behaviours rather than producing general descriptions of, eg methods of navigation, or different patterns of foraging behaviour. Answers that do not refer to memory cannot receive marks.

Candidates are required to consider the role of memory in both navigation and foraging behaviour. Those who clearly consider only one are exhibiting partial performance and can receive a maximum mark of 8 for AO1 and 8 for AO2.

**AO2**

As explained above, research studies used explicitly as supporting or contradicting particular theoretical perspectives would be an effective source of AO2, as would evaluation of the studies themselves insofar as it affects their validity. Alternative sources of AO2 would be a general consideration of the role of memory in navigation and foraging, perhaps in contrast with alternative explanations/models. These alternatives must be used as part of sustained and effective commentary to earn marks. Comparative studies would also be relevant, covering differences in the role of memory between species.

Many candidates are now alert to recent research studies on hippocampal enlargement in proportion to memory use. Such studies in non-human animals would be directly relevant, but work with humans (eg taxi drivers) can only earn AO2 marks if used explicitly as commentary on the role of memory in non-human animals.

**AO1: Outline of the role of memory in navigation and foraging behaviour in non-human animals.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of the role of memory in navigation and foraging behaviour in non-human animals is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of the role of memory in navigation and foraging behaviour in non-human animals is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of the role of memory in navigation and foraging behaviour in non-human animals is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth. <i>Partial performance is substantial, accurate and well-detailed (top of band) or slightly limited, accurate and reasonably detailed (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of the role of memory in navigation and foraging behaviour in non-human animals is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth. <i>Partial performance is limited, generally accurate and reasonably detailed.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Outline of the role of memory in navigation and foraging behaviour in non-human animals is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> . <i>Partial performance is basic, generally accurate and lacking detail.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of the role of memory in navigation and foraging behaviour in non-human animals is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> . <i>Partial performance is rudimentary and sometimes flawed with little focus on the question.</i>	<b>2-0</b>

**A02: Evaluation of the role of memory in navigation and foraging behaviour in non-human animals.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of the role of memory in navigation and foraging behaviour in non-human animals is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of the role of memory in navigation and foraging behaviour in non-human animals is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of the role of memory in navigation and foraging behaviour in non-human animals is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> . <i>Partial performance is thorough, coherent, and shows highly effective use of material (top of band) or slightly limited with effective use of material (bottom of band).</i>	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of the role of memory in navigation and foraging behaviour in non-human animals is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> . <i>Partial performance is limited with reasonable elaboration, with reasonably effective use of material.</i>	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of the role of memory in navigation and foraging behaviour in non-human animals is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> . <i>Partial performance is basic with some evidence of elaboration; restricted use of material.</i>	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of the role of memory in navigation and foraging behaviour in non-human animals is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> . <i>Partial performance is superficial with no evidence of elaboration, and material is not used effectively.</i>	<b>2-0</b>

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**15****Total for this question: 24 marks**

‘Animals with large brains, such as whales and elephants, are not necessarily more intelligent than animals with smaller brains.’

Discuss the relationship between brain size and intelligence.

(24 marks)

**AO1**

This question is taken directly from the Specification. It is extremely open-ended with a variety of potential and relevant sources of material. An evolutionary approach would emphasise the correlation between increases in relative brain size and behavioural complexity, especially in the primate/hominid line. Comparative studies on living species have also been used to assess the link between brain size and intelligence/behavioural complexity, eg the work of Jerison on comparative brain evolution. Candidates are not required to refer to studies, but may instead outline models/explanations of the relationship as part of their AO1 material.

Candidates may introduce material on *evolutionary factors* affecting the development of human intelligence, the other topic in this section. As long as there is explicit reference to *brain size* such material is creditworthy.

**AO2**

AO2 is likely to focus on general commentary and analysis. Examples might include the lack of correlation between absolute brain size and behavioural complexity (eg whales and elephants, as in the quote), and the need to take body size into account. Other studies indicate that neuronal complexity within the brain might be more important than overall size, while there has been a consistent failure to find a substantial correlation between brain size and intelligence within a single species.

If candidates introduce evolutionary factors affecting the development of intelligence, such as social complexity, analysis and evaluation of their relative contributions could earn AO2 marks if *brain size* is the explicit focus rather than intelligence per se.

**AO1: Outline of the relationship between brain size and intelligence.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Outline of the relationship between brain size and intelligence is <b>substantial</b> . It is <b>accurate and well-detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with <b>substantial evidence</b> of breadth and/or depth.	<b>12-11</b>
<b>Band 3 Bottom</b>	Outline of the relationship between brain size and intelligence is <b>slightly limited</b> . It is <b>accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>coherent</b> , with evidence of breadth and/or depth.	<b>10-9</b>
<b>Band 2 Top</b>	Outline of the relationship between brain size and intelligence is <b>limited</b> . It is <b>generally accurate and reasonably detailed</b> . The organisation and structure of the answer are <b>reasonably constructed</b> , with <b>increasing evidence</b> of breadth and/or depth.	<b>8-7</b>
<b>Band 2 Bottom</b>	Outline of the relationship between brain size and intelligence is <b>basic</b> . It is <b>generally accurate but lacks detail</b> . The organisation and structure of the answer are <b>reasonable</b> , with <b>some evidence</b> of breadth and/or depth.	<b>6-5</b>
<b>Band 1 Top</b>	Outline of the relationship between brain size and intelligence is <b>rudimentary and sometimes flawed</b> . There is <b>some focus</b> on the question. The organisation and structure of the answer are <b>reasonable</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Outline of the relationship between brain size and intelligence is <b>just discernible and mainly irrelevant</b> . It is <b>weak and shows muddled</b> understanding. The answer may be <b>wholly irrelevant</b> .	<b>2-0</b>

**AO2: Evaluation of the relationship between brain size and intelligence.**

<b>Band</b>	<b>Mark Allocation</b>	<b>Marks</b>
<b>Band 3 Top</b>	Evaluation of the relationship between brain size and intelligence is <b>thorough</b> . The material is used in a <b>highly effective</b> manner and shows evidence of <b>appropriate selection and coherent elaboration</b> .	<b>12-11</b>
<b>Band 3 Bottom</b>	Evaluation of the relationship between brain size and intelligence is <b>slightly limited</b> . The material is used in an <b>effective</b> manner and shows evidence of <b>appropriate selection and elaboration</b> .	<b>10-9</b>
<b>Band 2 Top</b>	Evaluation of the relationship between brain size and intelligence is <b>limited</b> . The material is used in a <b>reasonably effective</b> manner and shows <b>reasonable elaboration</b> .	<b>8-7</b>
<b>Band 2 Bottom</b>	Evaluation of the relationship between brain size and intelligence is <b>basic</b> . The material is used in a <b>restricted</b> manner and shows <b>some evidence of elaboration</b> .	<b>6-5</b>
<b>Band 1 Top</b>	Evaluation of the relationship between brain size and intelligence is <b>superficial and rudimentary</b> . The material is <b>not used effectively</b> and shows <b>no evidence of elaboration</b> .	<b>4-3</b>
<b>Band 1 Bottom</b>	Evaluation of the relationship between brain size and intelligence is <b>muddled and mainly irrelevant</b> . The material may be <b>wholly irrelevant</b> .	<b>2-0</b>

**A LEVEL/A2 UNIT 4: ASSESSMENT GRID**

<b>Question Number</b>	<b>AO1</b>	<b>AO2</b>
1	12	12
2(a)	12	
2(b)		12
3	12	12
4	12	12
5(a)	6	
5(b)	6	12
6	12	12
7	12	12
8	12	12
9	12	12
10	12	12
11	12	12
12	12	12
13(a)	12	
13(b)		12
14	12	12
15	12	12

<b>Marks</b>	<b>AO1</b>	<b>AO2</b>	<b>QoWC</b>
Total marks for 3 questions	36	36	4
A-Level total weighting (15%)	7.8%	7.2%	