

GCE 2004

June Series



Mark Scheme

Psychology A

(PYA4)

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Dr. Michael Cresswell Director General

UNIT 4 (PYA4)**PYA4 ASSESSMENT OBJECTIVE 1**

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

PYA4 ASSESSMENT OBJECTIVE 2

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

**QUALITY OF WRITTEN COMMUNICATION
(QoWC)**

Band 3	The work is characterised by a CLEAR expression of ideas, the use of a GOOD range of specialist terms, and FEW errors of grammar, punctuation and spelling.	4-3 marks
Band 2	The work is characterised by a REASONABLE expression of ideas, the use of SOME specialist terms, and REASONABLE grammar, punctuation and spelling.	2-1 marks
Band 1	The work is characterised by a POOR expression of ideas, the use of a LIMITED range of specialist terms, and POOR grammar, punctuation and spelling.	0 marks

TURN OVER FOR QUESTION 1

SECTION A - SOCIAL PSYCHOLOGY**1 Outline and evaluate *two* theories relating to the attribution of causality. (24 marks)**

Outline is an **AO1** injunction, which requires candidates to provide a summary description of two theories relating to the attribution of causality. The **AO2** injunction is *Evaluate*, which requires candidates to present evidence of **AO2** in relation to the two attribution theories previously outlined.

AO1

A number of attribution theories would be suitable for the **AO1** component of this question. include the correspondent inference theory (Jones and Davis, 1965), Kelley's (1972) co-variation model and his subsequent (1973) refinement of it, the causal schemata model, Weiner's attribution model (Weiner, 1979) and the more recent abnormal conditions focus model (Hilton and Slogoski, 1986). It is possible that some candidates may choose to write about attributional biases in response to this part of the question. This is permissible, although such content should attempt to demonstrate the theoretical basis of the chosen biases rather than simply describing them. It is possible that some candidates may describe attribution theories that are not concerned with the attribution of causality, e.g. the attribution of personal characteristics. These are not appropriate in this context and should not receive credit. If candidates outline more than two theories, the best two should be credited. If candidates present only one, then partial performance penalties apply (see AO1 mark allocations). Note that the injunction *Outline* does not require the same degree of descriptive detail as the Describe injunction.

AO2

Evaluation might be achieved by considering the feasibility of the assumptions of each theory, or the degree of research support for these assumptions. For example, typical experimental investigations of co-variation theory provide co-variation information that a person under normal circumstances would neither seek out nor use.

It is possible that some candidates whose evaluation only involves a description of research support (or research that challenges the theories in question), may simply describe research evidence for or against the theories in question (or alternative theories), whereas others might assess these theories using the same research evidence. Although both approaches are acceptable, the latter would receive more marks because the material is being used more effectively. Candidates who simply describe such research evidence or alternative theories should receive a maximum of 4 marks (top of Band 1) for this skill component.

It is also appropriate for candidates to evaluate their chosen theories of attribution by considering their applications. Thus, it is possible for candidates to evaluate theories in terms of their relevance to, for example, the assignation of legal responsibility, mental health, and interpersonal relationships. If candidates do choose this route, they should make it clear which aspects of their chosen theory are being supported by the application in question. Straightforward descriptions of applications that do not have this explicit connection should not receive credit. If candidates evaluate only one theory, then partial performance penalties apply (see AO2 mark allocations).

QUESTION 1: AO1*Outline of two theories relating to the attribution of causality*

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

QUESTION 1: AO2*Evaluation of two theories relating to the attribution of causality*

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

2

Total for this question: 24 marks

Discuss research (explanations *and/or* studies) into understudied relationships. (24 marks)

Discuss is an AO1 and AO2 term which requires the candidate to both describe and evaluate research (explanations and/or studies) into understudied relationships. In the *Terms Used in Examination Questions* document, the term ‘research’ is defined as ‘the process of gaining knowledge and understanding via either theory construction, examination, or empirical data collection’.

AO1

Lea and Spears (1995) write that, to date, psychologists have “concentrated primarily on romance, friendship, and marriage among young, white, middle-class, heterosexual Westerners whose relationships are conducted in the open”. The notion of ‘understudied’ relationships, therefore, refers to any type of relationship that does not fit into this typical pattern.

It is a current assumption among social psychologists that relationship research privileges certain types of relationships whilst neglecting others, including relationships made through the Internet (CMC – computer mediated communication) and homosexual relationships – just two of the many understudied relationship types. Many social psychologists, claim Lea and Spears, assume that CMC relationships are casual, temporary, false and lacking deep (or any) emotion. For example, Stoll (1996) and others found CMC to be an inadequate way for people to share emotional content, let alone develop meaningful, long-lasting relationships, due to the lack of nonverbal ‘cues’. Although there are fewer paralinguistic cues in CMC, researchers (e.g. Rheingold, 1994, cited in Lea and Spears, 1995) have identified a learning curve, with ‘seasoned CMC communicators’ becoming adept at using and interpreting textual signs and paralinguistic codes. Also relevant as a form of ‘understudied’ relationship is research that illustrates the role of the mobile phone, and SMS messaging for the formation and maintenance of relationships. Kitzinger (2001) claims that “almost all psychological models of relationships have been based on heterosexual couples, so psychologists treat lesbian and gay relationships as pathological”. Kitzinger also suggests that lesbians and gay couples struggle to build and maintain relationships “in the context of a society which often denies their existence, condemns their sexuality, penalises their relationship and derides their love for each other”.

It is important that examiners should give equal status to material from research *studies* and from more theoretical sources. This may be particularly important for candidates who choose to write about gay and lesbian relationships where *empirical* studies are less evident. Note that there are other forms of ‘understudied’ relationship (e.g. non-Western relationships, relationships among the elderly etc.) that would be appropriate in this context. Heterosexual Western romantic relationships could not be considered ‘understudied’ in this respect *unless* so justified by the candidate. Note, it is not intended that this question requires a ‘plurality’ performance, but the number of theories/studies or even types of relationship considered will constitute the *breadth* of the response.

AO2

The nature of the ‘evaluation’ used in response to this question largely depends on the material being described in the first place. This might consider the degree to which claims for the distinctive nature of a particular ‘understudied’ relationship is supported by research evidence, or simply reflects investigator bias. It is likely that examiners will need to take a fairly liberal line in interpreting any form of ‘commentary’ (e.g. considering the *consequences* of societal attitudes to gay and lesbian couples, or drawing out the *differences* between on-line and ‘f2f’ - face-to-face relationships) as AO2 content.

QUESTION 2: AO1*Description of research into understudied relationships.*

Band	Mark allocation	Marks
Band 3 Top	Description of research into understudied relationships is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of research into understudied relationships is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of research into understudied relationships is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of research into understudied relationships is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of research into understudied relationships is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of research into understudied relationships is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 2: AO2*Evaluation of research into understudied relationships.*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of research into understudied relationships is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of research into understudied relationships is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of research into understudied relationships is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of research into understudied relationships is basic and there is some evidence of elaboration . The material is used in a restricted manner.	6-5
Band 1 Top	Evaluation of research into understudied relationships is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of research into understudied relationships is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

3

Total for this question: 24 marks

Outline and evaluate *two* explanations of human altruism.**(24 marks)**

Outline is an **AO1** injunction, which requires candidates to provide a summary description of two explanations of human altruism. The **AO2** injunction is *evaluate*, which requires the candidate to present evidence of **AO2**, in relation to the two theories previously outlined, in terms of relevant research evidence.

AO1

Two major explanations of human altruism are the empathy-altruism hypothesis (Batson, 1991) and negative-state relief model (Cialdini, 1997). Eisenberg's theory of prosocial reasoning might also be used in this context (Eisenberg et al, 1983). As it is difficult to separate out explanations of altruism from explanations of helping behaviour, it is likely that some candidates might present material that is more usually associated with explanations of bystander behaviour. Thus, examiners should be prepared to credit Latané and Darley's cognitive model (Latané and Darley, 1970) and the arousal: cost-reward model (Piliavin et al., 1981). Some candidates may draw upon explanations that are more rooted in studies of responses to social dilemmas (e.g. Van Vught's study of individual responses to water conservation requests). This is acceptable provided the theoretical basis of such material is obvious to the examiner. Other acceptable theories of human altruism include kin selection (and the selfish gene) and reciprocal altruism provided that the focus of discussion is on human altruism rather than altruistic behaviour in non-human animals. 'Biological' explanations can count as one explanation as can 'psychological' ones if so identified by the candidate.

If candidates describe more than two explanations of human altruism, the best two should be credited. If candidates describe only one, then partial performance penalties apply (see **AO1** mark allocations).

AO2

Evaluation may be accomplished in many ways, including the juxtaposition of alternative explanations (e.g. Cialdini's contention that Batson's research does not show real altruism), the ability of different explanations to explain real life examples of 'altruistic' behaviour, and the use of research evidence that supports or challenges the explanation in question. Both of the major explanations of human altruism have problems with research that appears to contradict their central assumptions. Research has, for example, suggested that the high personal cost of helping may sometimes direct attention away from concern for the other person and toward the participants themselves. This suggests that in some conditions empathy does not lead to altruism. There are also problems with the negative-state relief model. Research has shown that people are more likely to help when they are in a good mood (rather than a negative mood).

An alternative approach to the evaluation of the chosen theories is to consider the implications for increasing pro-social behaviour. If the empathy model is correct, then inducing empathy should increase pro-social behaviour towards stigmatised groups, such as the homeless, or those with AIDS. Research has found that attitudes towards such groups do become more positive when empathy is encouraged (Batson, 1999).

The degree to which candidates use this material as part of a developed critical argument, rather than simply presenting alternative explanations or incidental research findings, should constitute the effectiveness of the evaluation, and hence the number of marks awarded for this skill. If candidates evaluate only one explanation, then partial performance penalties apply (see **AO2** mark allocations).

QUESTION 3: AO1*Outline of two explanations of human altruism*

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

QUESTION 3: AO2*Evaluation of two explanations of human altruism*

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

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

Critically consider research (theories *and/or* studies) relating to lateralisation of function in the cerebral cortex. (24 marks)

Critically consider is an **AO1** and **AO2** term, which requires the candidate to describe and evaluate research (theories and/or studies) relating to lateralisation of function in the cerebral cortex. In the *Terms Used in Examination Questions* document, ‘research’ is defined as ‘the process of gaining knowledge and understanding via either theory construction, examination, or empirical data collection’.

AO1

The term ‘lateralisation’ is used to describe the process by which a neural function is ‘pushed to one side’ of the brain (Beaumont et al., 1999). Although this concept applies to any asymmetry of function, this question requires candidates to restrict discussion to the lateralisation of function in the cerebral cortex. Material that is concerned with asymmetry in any other brain structure should not receive marks unless the candidate makes an explicit argument for either a structural or functional link with the cerebral cortex.

As this question asks for *research*, it is permissible for candidates to use material derived from theoretical explanations of lateralisation and/or empirical studies of this phenomenon. Examples of the former would include possible explanations of *why* lateralisation has evolved in the human cerebral cortex. One explanation sees lateralisation as evolving because of the functional incompatibility of brain systems. It is possible that two functions (such as language and spatial processing) must be kept apart because optimal performance in one is somehow detrimental to optimal performance in the other. Cues that are important for language are irrelevant for spatial processing, and vice-versa. An alternative explanation emphasises that the ‘neural space’ of the left hemisphere is mostly taken up with language, therefore other important cognitive functions must be housed elsewhere, in this case the right hemisphere.

Candidates who concentrate more on the results of empirical investigations in this area have the results of a variety of research methodologies at their disposal. These include *unilateral hemispheric lesions* where hemispheric differences are inferred from the selective impairment following a right or left hemisphere lesion. Studies involving patients who have undergone *commissurotomies* (e.g. Sperry’s research on the ‘split brain’) are also important because they allow a direct test of each hemisphere working in isolation.

It is also appropriate for candidates to focus on behavioural disorders that allow us to infer lateralisation of function for a particular skill. For example, speech disorders are generally related to damage in one or the other hemisphere. A lesion in either the corpus callosum or the left hemisphere will, for example, produce various disturbances including an inability to perform skilled behaviours on verbal command (*apraxia*). Research into the origins of apraxia has demonstrated that the left hemisphere is also important in the organisation of complex volitional movements. Damage to an area of the inferior left frontal lobe (Broca’s area) causes *Broca’s aphasia*.

AO2

Appropriate **AO2** content will reflect the particular approach that a candidate has taken in answering this question. For example, theoretical explanations might be supported by, or challenged by empirical research evidence. Split-brain studies may be criticised for the small number of research participants available and the presence of severe pre-operative brain pathology in many of these patients. Techniques that involve temporary inactivation of one hemisphere (WADA) are also affected by individual differences in the spread of the anaesthetic or the relatively short time available for testing. Candidates may point out that although apraxia and Broca's aphasia demonstrate the primacy of the left hemisphere in these underlying processes, the fact that they show independent recovery following brain damage is testimony to their independence of function.

Diagrams are acceptable as elaboration of a topic, although the same criteria of detail and coherence would apply in their assessment.

QUESTION 4: AO1*Description of research relating to lateralisation of function in the cerebral cortex*

Band	Mark allocation	Marks
Band 3 Top	Description of research relating to lateralisation of function in the cerebral cortex is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of research relating to lateralisation of function in the cerebral cortex is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of research relating to lateralisation of function in the cerebral cortex is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of research relating to lateralisation of function in the cerebral cortex is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of research relating to lateralisation of function in the cerebral cortex is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of research relating to lateralisation of function in the cerebral cortex is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 4: AO2*Evaluation of research relating to lateralisation of function in the cerebral cortex*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of research relating to lateralisation of function in the cerebral cortex is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of research relating to lateralisation of function in the cerebral cortex is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of research relating to lateralisation of function in the cerebral cortex is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of research relating to lateralisation of function in the cerebral cortex is basic and there is some evidence of elaboration . The material is used in a restricted manner .	6-5
Band 1 Top	Evaluation of research relating to lateralisation of function in the cerebral cortex is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of research relating to lateralisation of function in the cerebral cortex is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

TURN OVER FOR QUESTION 5

5

Total for this question: 24 marks

- (a) Outline and evaluate *one* ecological account of the function of sleep (e.g. Meddis).
(12 marks)
- (b) Outline and evaluate *one* restoration account of the function of sleep (e.g. Oswald).
(12 marks)

(a) *Outline* is an **AO1** injunction, which requires candidates to provide a summary description (**AO1**) of research studies into *one* ecological account of the function of sleep. The **AO2** injunction is *Evaluate*, which requires the candidate to present evidence of **AO2** in relation to this account.

(b) *Outline* is an **AO1** injunction, which requires candidates to provide a summary description (**AO1**) of research studies into *one* restoration account of the function of sleep. The **AO2** injunction is *Evaluate*, which requires the candidate to present evidence of **AO2** in relation to this account.

(a) AO1

The two theories most likely to be described for the first part of the question are Webb's hibernation theory (Webb, 1982) and Meddis' predator avoidance theory (Meddis, 1975). In Webb's theory, sleep serves the purpose of providing a period of enforced inactivity in which the animal conserves energy. Meddis (1975) suggests that sleep helps animals that are predated upon to stay out of harms way at times when they are most vulnerable. For diurnal animals this means sleeping during the hours of darkness. Some candidates may offer a 'meta' theory (e.g. the evolutionary account). This is acceptable.

AO2

Evaluation might take the form of challenging the assumptions of the chosen theory. For example, the assumption that sleep conserves energy might be challenged by the finding that sleep reduces energy rates by only about 5-10%. This suggests that rest would be as useful in this respect as sleeping. Likewise, the risks associated with sleeping (e.g. more vulnerable to predation) might be seen to outweigh the marginal advantage of energy conservation. Alternatively, candidates might demonstrate research support for these assumptions, e.g. Allison and Cicchetti (1976) found that in general the greater the environmental danger, the less time an animal spent sleeping per day.

(b) AO1

Oswald's restoration theory of sleep (Oswald, 1969) stated that REM sleep was necessary for the restoration of brain chemicals, while SWS was necessary for bodily restoration (such as the secretion of growth hormone, which in turn stimulates protein synthesis). Horne (1988) extended Oswald's original ideas with his proposal that core sleep, consisting of SWS and REM, is essential for normal brain functioning in humans, while the lighter stages of NREM sleep are not essential and can be referred to as optional sleep. During core sleep the brain recovers and restores itself, but Horne believed that bodily restoration can occur just as well during periods of relaxed wakefulness. As Horne's theory is an *extension* of Oswald's theory rather than an alternative to it, it is acceptable for candidates to include reference to both in their response to this part of the question. Whether Horne's reformulation of Oswald's theory counts as **AO1** or **AO2** depends on the context of any such material.

AO2

A similar pattern of evaluation might be expected for this part of the question. For example, Horne (1988) points out that as amino acids (the constituents of proteins) are only freely available for 5 hours after a meal, protein synthesis cannot be one of the main reasons for sleep. Similarly, candidates may draw upon studies of partial or total sleep deprivation to provide research support for the assumptions of their chosen restoration perspective.

To be used for both parts of the question

QUESTION 5: AO1

Outline of one ecological/restoration account of the function of sleep.

Band	Mark allocation	Marks
Band 3 Top	Outline of one ecological/restoration account of the function of sleep is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent .	6
Band 3 bottom	Outline of one ecological/restoration account of the function of sleep is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent .	5
Band 2 Top	Outline of one ecological/restoration account of the function of sleep is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed .	4
Band 2 bottom	Outline of one ecological/restoration account of the function of sleep is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable .	3
Band 1 Top	Outline of one ecological/restoration account of the function of sleep is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	2
Band 1 bottom	Outline of one ecological/restoration account of the function of sleep is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	1-0

QUESTION 5: AO2

Evaluation of one ecological/restoration account of the function of sleep.

Band	Mark allocation	Marks
Band 3 Top	Evaluation of one ecological/restoration account of the function of sleep is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	6
Band 3 bottom	Evaluation of one ecological/restoration account of the function of sleep is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	5
Band 2 Top	Evaluation of one ecological/restoration account of the function of sleep is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	4
Band 2 bottom	Evaluation of one ecological/restoration account of the function of sleep is basic and there is some evidence of elaboration . The material is used in a restricted manner.	3
Band 1 Top	Evaluation of one ecological/restoration account of the function of sleep is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	2
Band 1 bottom	Evaluation of one ecological/restoration account of the function of sleep is muddled and incomplete . The material may be wholly or mainly irrelevant .	1-0

6

Total for this question: 24 marks

Outline and evaluate two theories of emotion.**(24 marks)**

Outline is an **AO1** injunction, which requires candidates to provide a summary description of two theories of emotion. The **AO2** injunction is *evaluate*, which requires the candidate to present evidence of **AO2** in relation to these two theories of emotion.

AO1

The question offers candidates the opportunity to write about any *two* theories of emotion. Thus, candidates may achieve credit by describing *physiological* theories such as James-Lange and Cannon-Bard. Alternatively candidates might choose theories that focus on the role played by different brain structures (such as the hypothalamus, limbic system, and cerebral hemispheres).

Candidates may also choose from the psychological or combined *physiological/psychological* theories of emotion. The most likely theories are Schachter and Singer's cognitive labelling theory (Schachter and Singer, 1962) and Lazarus's cognitive appraisal theory (Lazarus, 1982). Alternatively, candidates might offer a description of Parkinson's four-factor theory (Parkinson, 1994) which offers a combination of aspects of all four of the theories identified above. Some candidates may choose to write about physiological or psychological theories of emotional *disorders* (such as anxiety disorders and depression). These are acceptable and would receive credit.

If candidates describe more than two theories of emotion, the best two should be credited (and any evaluation of these two theories credited under **AO2**). If candidates describe only one theory, then partial performance penalties apply (see **AO1** mark allocations).

AO2

Appropriate **AO2** evaluation depends very much on the two theories chosen, but it is acceptable for candidates to offer research support for their chosen theories (e.g. Schachter and Singer's 'Suproxin study') or research that challenges the assumptions of their chosen theories, e.g. Hohmann's finding that patients with spinal cord damage show reduced emotionality (Hohmann, 1966) as a challenge to the Cannon-Bard theory.

It is also possible that candidates may offer alternative theories that show the inadequacies of the theories they have been describing. This is perfectly acceptable as **AO2**. Evaluation may also be achieved in a number of other ways, such as demonstrating the *implications* of a particular theoretical perspective or possible *applications* of the insights derived from that theory. However, the degree to which candidates *use* this material as part of a developed critical argument, rather than simply presenting alternative explanations, appropriate research findings or applications, should constitute the *effectiveness* of the evaluation, and hence the number of marks awarded for this material.

Note that there is a plurality requirement for the **AO2** component of this question. If candidates evaluate only one theory, then partial performance penalties apply (see **AO2** mark allocations).

Although the question explicitly asks for *theories* of emotion, some candidates may present *studies* of emotion (such as Schachter and Singer's study). These may be creditworthy in one of two ways. They may be used as an *elaboration* of a theory (**AO1**) or as **AO2** evaluation of a theory. If studies are presented outside of such contexts, they should receive credit only if they contain an explanatory element. Candidates may choose to answer in terms of two 'meta' theories (e.g. the 'physiological' and 'psychological' accounts). This is acceptable.

QUESTION 6: AO1*Outline of two theories of emotion*

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

QUESTION 6: AO2*Evaluation of two theories of emotion*

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

- (a) **Outline and evaluate the role of biological mechanisms in pattern recognition.** (12 marks)
- (b) **Outline and evaluate the role of context in pattern recognition.** (12 marks)

(a) *Outline* is an **AO1** injunction, which requires candidates to provide a summary description (**AO1**) of the role of biological mechanisms in pattern recognition. The **AO2** injunction is *evaluate*, which requires the candidate to present evidence of **AO2** in relation to the role of biological mechanisms in pattern recognition.

(b) *Outline* is an **AO1** injunction, which requires candidates to provide a summary description (**AO1**) of the role of context in pattern recognition. The **AO2** injunction is *evaluate*, which requires the candidate to present evidence of **AO2** in relation to the role of context in pattern recognition.

(a) AO1 and AO2

This part of the question allows candidates to offer any appropriate descriptive and evaluative material that relates to the role of biological mechanisms in pattern recognition. It is acceptable, therefore, for candidates to focus on theories such as Hubel and Wiesel's feature detection model (Hubel and Wiesel, 1979), McClelland and Rumelhart's connectionist approach (McClelland and Rumelhart, 1985) or even Selfridge's 'Pandemonium model' (Selfridge, 1959). Alternatively, candidates may choose to concentrate on studies as a way of illustrating the role of biological mechanisms in pattern recognition. Answers that contain both theories and studies offer a potential problem for the interpretation of the **AO1** component and the **AO2** component. If studies are described only, then such description should contribute to the **AO1** mark for this part of the question. If, however, the research studies are used as an explicit evaluation of the merits of the theories offered in this part of the question, then such content should contribute to the **AO2** mark for this part of the question. Note, it is not intended that this question requires a 'plurality' performance, but the number of 'mechanisms' offered will constitute the breadth of the response.

(b) AO1 and AO2

This question allows candidates to offer any appropriate descriptive and evaluative material that relates to the role of context in pattern recognition. It is acceptable, therefore, for candidates to focus on theories such as Gregory's 'top-down' constructivist theory (Gregory, 1973), and Healy's unitisation hypothesis (Healy, 1994). There is a potentially wide range of theories that might offer some insights into the role of 'context' in the broad area of 'pattern recognition' (as suggested in the examples given in the question). Examiners should use their judgement to consider whether the candidate has made the case for such a link in any theories or studies that are not immediately obvious as fulfilling this role. As in part (a) of this question, candidates may choose to concentrate on studies as a way of illustrating the role of context in pattern recognition. Also, a similar problem might arise concerning the use of studies in this part of the question. As with part (a), if studies are described only, then such description should contribute to the **AO1** mark for this part of the question. If the research studies are used as an explicit evaluation of the merits of the theories offered in this part of the question, then such content should contribute to the **AO2** mark.

To be used for both parts of the question

QUESTION 7(a) and (b): AO1

Outline of the role of biological mechanisms/context in pattern recognition

Band	Mark allocation	Marks
Band 3 Top	Outline of the role of biological mechanisms/context in pattern recognition is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent .	6
Band 3 bottom	Outline of the role of biological mechanisms/context in pattern recognition is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent .	5
Band 2 Top	Outline of the role of biological mechanisms/context in pattern recognition is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed .	4
Band 2 bottom	Outline of the role of biological mechanisms/context in pattern recognition is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable .	3
Band 1 Top	Outline of the role of biological mechanisms/context in pattern recognition is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	2
Band 1 bottom	Outline of the role of biological mechanisms/context in pattern recognition is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	1-0

QUESTION 7(a) and (b): AO2

Evaluation of the role of biological mechanisms/context in pattern recognition

Band	Mark allocation	Marks
Band 3 Top	Evaluation of the role of biological mechanisms/context in pattern recognition is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	6
Band 3 bottom	Evaluation of the role of biological mechanisms/context in pattern recognition is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	5
Band 2 Top	Evaluation of the role of biological mechanisms/context in pattern recognition is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	4
Band 2 bottom	Evaluation of the role of biological mechanisms/context in pattern recognition is basic and there is some evidence of elaboration . The material is used in a restricted manner.	3
Band 1 Top	Evaluation of the role of biological mechanisms/context in pattern recognition is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	2
Band 1 bottom	Evaluation of the role of biological mechanisms/context in pattern recognition is muddled and incomplete . The material may be wholly or mainly irrelevant .	1-0

8

Total for this question: 24 marks

Discuss the development of perceptual abilities.**(24 marks)**

Discuss is an **AO1** and **AO2** term which requires the candidate to both describe and evaluate the development of perceptual abilities.

AO1

This question allows for a variety of different and quite legitimate approaches. Candidates may choose to describe insights from the research areas mentioned in the specification [i.e. infant studies and cross-cultural studies]; they might describe *theoretical* insights into perceptual development [e.g. differentiation theory, (Gibson and Gibson, 1955) and enrichment theory, (Piaget, 1954)]; or they may answer in terms of the nature-nurture debate. Any one of these approaches is acceptable as a response to this question, as is a combination of material from these three areas or any other topic area *provided* it is substantially concerned with the *development* of perceptual abilities. Thus, it is possible for students to describe research relating to the development of specific perceptual abilities (such as size constancy or depth perception), but it is not acceptable for candidates to write a more general explanation of these abilities that does not address their *development*. Likewise, candidates who write about theories of perception (e.g. Gregory or Gibson's theory) should only receive marks for material that explicitly addresses the development of perception rather than its mechanics.

AO2

Evaluation will depend largely on the particular route taken, but there are a number of possible evaluative points that could be made in this area. These include the methodological limitations of infant and cross-cultural studies (e.g. the difficulties of translation when carrying out research in other cultures); criticisms of specific studies (e.g. the difficulty of disentangling learned and innate skills in Gibson and Walk's visual cliff experiment) or research that supports a particular theoretical perspective (e.g. Held and Hein's support of the enrichment perspective). If studies relating to perceptual development are *described* only, then such description should contribute to the **AO1** mark for this question. If, however, studies are used as an explicit *evaluation* of the merits of *theories* of perceptual development, then such content should contribute to the **AO2** mark for this question. It is also appropriate for candidates to compare and contrast specific views on the development of perceptual abilities (e.g. different *theories* of perceptual development) or offer a critical discussion based on the nature-nurture argument.

Although this question asks for perceptual *abilities* in the plural, it is not the intention that this question should carry a partial performance penalty for candidates who only write about *one* form of perceptual ability. The number of 'abilities' offered will constitute the *breadth* of the response.

QUESTION 8: AO1*Description of the development of perceptual abilities*

Band	Mark allocation	Marks
Band 3 Top	Description of the development of perceptual abilities is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of the development of perceptual abilities is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of the development of perceptual abilities is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of the development of perceptual abilities is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of the development of perceptual abilities is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of the development of perceptual abilities is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 8: AO2*Evaluation of the development of perceptual abilities*

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

Discuss research (theories *and/or* studies) into the relationship between language and thought. (24 marks)

Discuss is an **AO1 + AO2** term which requires the candidate to give evidence of AO1 with relation to research into relationship between language and thought, and AO2 with relation to this research. Note that, in the *Terms Used in Examination Questions* document, the term ‘research’ is defined as ‘the process of gaining knowledge and understanding via either theory construction, examination, or empirical data collection’.

AO1

Although some candidates may make references to Watson’s theory that language was simply ‘inner speech’, it is more likely that they concentrate on later theories such as the various formulations of the linguistic relativity hypothesis (first formulated by Sapir, 1921, but more usually associated with Whorf, 1956). This exists in its *weak* form (language may *influence* thinking) and its *strong* form (language *determines* thinking). The central idea of the linguistic relativity hypothesis was that the language that a person speaks has a great influence on the way that they think and perceive. Candidates may describe the original studies, which led to the formulation of these variants, although overly long accounts of Whorf’s time as a chemical engineer with the Hartford Fire Insurance Company should not attract the same credit as scientific investigations of this hypothesis. This area is rife with inaccuracies, some of them emanating from the original hypothesis, and some of them from the candidates’ own misunderstanding of it. The former may be creditworthy, but not the latter.

AO2

Evaluation may be accomplished in many ways, including the explanatory power of any chosen theories, their research support, or problems with their formulation or application. It is also possible that some candidates might offer a more ‘creative’ route for their evaluation, for example by considering the *implications* of the linguistic relativity hypothesis or perhaps even the conclusions that might be drawn from the study of linguistic differences between cultures. For example, Hopi Indians and Thais do not have the same sense of past, present and future in their language as we have. This may be seen as evidence for the rather different way in which they think about time (an AO2 point). It is possible that candidates may introduce further perspectives on the language versus thought debate as a way of demonstrating alternatives to their chosen theories (for example, Hunt and Agnoli’s modified version of the Whorfian hypothesis). The degree to which candidates *use* this material as part of a developed critical argument, rather than simply presenting alternative perspectives, should constitute the *effectiveness* of the evaluation, and hence the number of marks awarded for this skill. If studies relating to the relationship between language and thought are *described* only, then such description should contribute to the AO1 mark for this question. If, however, studies are used as an explicit *evaluation* of the merits of these theories, then such content should contribute to the AO2 mark for this question.

QUESTION 9: AO1*Description of research into the relationship between language and thought*

Band	Mark allocation	Marks
Band 3 Top	Description of research into the relationship between language and thought is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of research into the relationship between language and thought is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of research into the relationship between language and thought is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of research into the relationship between language and thought is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of research into the relationship between language and thought is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of research into the relationship between language and thought is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 9: AO2*Evaluation of research into the relationship between language and thought*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of research into the relationship between language and thought is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of research into the relationship between language and thought is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of research into the relationship between language and thought is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of research into the relationship between language and thought is basic and there is some evidence of elaboration . The material is used in a restricted manner.	6-5
Band 1 Top	Evaluation of research into the relationship between language and thought is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of research into the relationship between language and thought is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

10

Total for this question: 24 marks

**Discuss one or more applications of theories of cognitive development (e.g. to education).
(24 marks)**

Discuss is an **AO1** and **AO2** term which requires the candidate to both describe and evaluate applications of theories of cognitive development.

AO1

Although candidates may draw on any theories of cognitive development for their response to this question, it is most likely that they would choose from the areas mentioned in the specification (i.e. Piaget and Vygotsky). Applications of Piaget's theory include discovery learning (where children construct their own knowledge of the world through self-discovery) and socio-cognitive conflict (children are exposed to differing views of others). Applications of Vygotsky's theory include the notion of scaffolding (adults begin an instructional interaction by using direct instruction, then gradually withdraw their involvement in recognition of the child's developing mastery of the task), and the zone of proximal development (ZPD). The ZPD refers to the range of tasks that children cannot yet accomplish on their own but can do with the help of adults or other children. A further application of Vygotsky's ideas to education is through peer tutoring, where the tutor is another pupil who is a little ahead of the learner so can work naturally in the learner's ZPD. Co-operative group-work is based on the same principle. The information processing approach focuses more on the specific meta-cognitive rules and strategies necessary for development of skills such as reading and mathematics. The emphasis in this approach is therefore primarily task and error analysis.

AO2

Evaluation depends very much of the particular material being chosen for this question. For example, scaffolding is an important idea in Vygotsky's theory because it emphasises that children's knowledge develops through their experience of adults guiding them toward a more sophisticated solution of a task. Research evidence has tended to support Vygotsky's claim for the importance of inner speech developed as a result of shared dialogues with adults during scaffolding. There is also evidence that by using techniques derived from Vygotsky's theory and applying them to the teaching of science, significant advantages can be gained in educational tests such as SATS (Shayer, 1996).

Although it is to be expected that candidates would include some theoretical background material to give substance to their chosen applications, examiners should not award undue credit to material that is not explicitly focused on applications of these theories. The degree to which they are successful in doing this will constitute the 'coherence' of their response to this question. Candidates could also criticise the underlying theories as a means of commenting on the value of the application. Note that the question does not specify that candidates must write about applications to education (although this is the obvious choice), so other applications are also acceptable provided they are linked to cognitive development. If a candidate produces an answer that focuses exclusively on theories of cognitive development (e.g. Piaget or Vygotsky), this may only receive credit if an explicit and sustained case is made for this being an 'application' (e.g. an increased understanding of the role of culture in cognitive development). Note, it is not intended that this question requires a 'plurality' performance, but the number of 'applications' offered will constitute the breadth of the response.

QUESTION 10: AO1*Description of applications of theories of cognitive development*

Band	Mark allocation	Marks
Band 3 Top	Description of applications of theories of cognitive development is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of applications of theories of cognitive development is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of applications of theories of cognitive development is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of applications of theories of cognitive development is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of applications of theories of cognitive development is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of applications of theories of cognitive development is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 10: AO2*Evaluation of applications of theories of cognitive development*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of applications of theories of cognitive development is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of applications of theories of cognitive development is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of applications of theories of cognitive development is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of applications of theories of cognitive development is basic and there is some evidence of elaboration . The material is used in a restricted manner.	6-5
Band 1 Top	Evaluation of applications of theories of cognitive development is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of applications of theories of cognitive development is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

11

Total for this question: 24 marks

Describe and evaluate *one or more* psychodynamic explanations of personality development (e.g. Freud). (24 marks)

Describe is an **AO1** term which requires the candidate to give evidence of **AO1** with relation to one or more psychodynamic explanations of personality development. *Evaluate* is an **AO2** term which requires the candidate to give evidence of **AO2** with relation to this/these explanations.

AO1

The term 'psychodynamic' in this context describes any theory that emphasises change and development in the individual. Psychodynamic theories portray individuals as dynamic, or constantly changing. The best known of the psychodynamic theories of personality is Freudian psychoanalysis. Candidates must make sure that whatever explanation(s) they choose in response to this question, they are explicitly relevant to the issue of 'personality development'. However, when covering Freudian theory arguably most, if not all of this theory is related to personality and its ongoing development, and therefore would constitute appropriate content for this question. Candidates who choose Freudian theory cannot be expected to do more than cover the main features of this theory (e.g. the structure of personality, stages of development, fixation etc.) in the time available. Although Freud's psychoanalytic theory is the most likely explanation to be offered in response to this question, other psychodynamic theories are also appropriate. These include Erikson's psychosocial theory (Erikson, 1963), Jung's analytical theory of personality (Jung, 1960), as well as the theories of Adler (1948), Horney (1939), Fromm (1941), Klein (1932) and Sullivan (1953). Any or all of these theories are classified as *psychodynamic* explanations of personality development for the purposes of this question.

AO2

Evaluation may be both negative *and* positive, therefore it is possible that some candidates may stress the explanatory power of their chosen psychodynamic explanation/explanations to personality, as well as the research support for its/their assumptions. Alternatively, they may focus more on the inadequacies of an explanation, or its relevance to contemporary knowledge about personality. It is possible that candidates may introduce further theories as a way of demonstrating alternatives to their chosen theory/theories, e.g. they may introduce social learning theory as a contrasting perspective. The degree to which candidates *use* this material as part of a developed critical argument, rather than simply presenting alternative perspectives, should constitute the *effectiveness* of the evaluation, and hence the number of marks awarded for this component.

Some candidates may introduce material on *therapy* or the assumptions underlying psychodynamic models of abnormality. Credit should only be given if such material is specifically related to personality. It is possible, for example, that candidates use therapeutic interventions as part of an AO2 commentary on the applications or implications of the Freudian view of personality development. Any such links should both be explicit and sustained for this material to receive credit. Note that the use of the term 'one or more' in the question does not imply that a partial performance penalty would apply to candidates who restrict themselves to just one explanation. However, there should be some allowance in expectations of what constitutes appropriate *depth* for candidates who choose more than one explanation.

QUESTION 11: AO1*Description of one or more psychodynamic explanations of personality development.*

Band	Mark allocation	Marks
Band 3 Top	Description of one or more psychodynamic explanations of personality development is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of one or more psychodynamic explanations of personality development is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of one or more psychodynamic explanations of personality development is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of one or more psychodynamic explanations of personality development is basic . It is generally accurate but lacks detail. The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of one or more psychodynamic explanations of personality development is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of one or more psychodynamic explanations of personality development is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 11: AO2*Evaluation of one or more psychodynamic explanations of personality development.*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of one or more psychodynamic explanations of personality development is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of one or more psychodynamic explanations of personality development is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of one or more psychodynamic explanations of personality development is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of one or more psychodynamic explanations of personality development is basic and there is some evidence of elaboration . The material is used in a restricted manner.	6-5
Band 1 Top	Evaluation of one or more psychodynamic explanations of personality development is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of one or more psychodynamic explanations of personality development is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

12

Total for this question: 24 marks

“Some theorists argue that some degree of disengagement is necessary to suit the declining biological and psychological capacities of the older person, yet others claim that a successful old age is best achieved by maintaining roles and relationships.”

Outline and evaluate *two or more* explanations of adjustment to old age.

(24 marks)

Outline is an **AO1** injunction, which requires candidates to provide a summary description of two or more explanations of adjustment to old age. The **AO2** injunction is *evaluate*, which requires the candidate to present evidence of **AO2** in relation to these two or more explanations of adjustment to old age.

AO1

There is a wide range of appropriate explanations that candidates might draw upon in response to this question. These include theories such as *social disengagement theory* (Cumming and Henry, 1961), *activity theory* (Havighurst et al., 1968) and *selectivity theory* (Field and Minkler, 1988). Alternatively candidates might focus on adjustment to specific aspects of old age, such as retirement or bereavement. Candidates may, for example, describe the impact of retirement from the perspective of the transition from 'generativity versus stagnation' to integrity versus despair' (Erikson, 1968). Appropriate explanations that might place bereavement within the topic of adjustment in old age include theoretical insights from Kübler-Ross, (1969) and Murray-Parkes, (1972). If this approach is taken, the focus of discussion must be on *explanations* of how older people adjust to retirement and bereavement, rather than general discussions of their effects (which would not receive credit).

It is also appropriate for candidates to focus their explanations on *cognitive* changes in old age. Cognitive changes that occur with ageing include intelligence, memory, learning and problem solving. Candidates may also discuss research into the more pathological cognitive changes associated with late adulthood. Some researchers have found evidence for increased *interiority* in late adulthood, with an increased tendency toward introspection and reflection. Provided such material provides an *explanation* of how people adjust to the cognitive changes associated with old age, this is acceptable. If candidates describe only one explanation, then partial performance penalties apply (see **AO1** mark allocations).

AO2

Evaluative commentary may take several forms. If candidates choose social *theories* of adjustment (such as social disengagement theory), then such theories can be evaluated directly in terms of their central assumptions, their ability to 'fit statistical facts', or perhaps the research support for these assumptions. Candidates who choose specific areas of adjustment (such as retirement or bereavement), might evaluate their material in terms of available research evidence, or perhaps in terms of cross-cultural or sub-cultural differences in adjustment to those life events. Likewise, transitional theories of life events (e.g. Hopson, 1988) suggest that adjustment to life events such as bereavement and retirement may be positive in terms of subsequent developmental growth. Cognitive decline in old age is not inevitable as other factors, such as good physical health, stable marriages and active, stimulating lives positively correlate with higher intelligence scores in late adulthood. Many explanations of adjustment to old age are confounded by 'cohort effects', i.e. people who are 80 in 2004 will be very different to those who will be 80 in 2064 (due to better education and health, changing cultural patterns, and changing stereotypes about what is possible for older people).

Note - there is no one, universal, agreed 'threshold' for late adulthood, therefore candidates may be expected to include material relating to any adults of retirement age or over. This is acceptable. What is not acceptable, however, is material relating to much younger ages. If candidates evaluate only one explanation, then partial performance penalties apply (see **AO2** mark allocations).

QUESTION 12: AO1*Description of two or more explanations of adjustment to old age*

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

QUESTION 12: AO2*Evaluation of two or more explanations of adjustment to old age*

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

13

Total for this question: 24 marks

Discuss evolutionary explanations of the behaviour of non-human animals.	(24 marks)
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Discuss is an **AO1** and **AO2** term, which requires the candidate to show evidence of their knowledge and understanding (**AO1**), and of their analysis and evaluation (**AO2**) of research (theories and/or studies) relating to evolutionary explanations of the behaviour of non-human animals.

AO1

It is expected that most candidates will use the major concepts of natural and sexual selection to frame their responses, although it is not necessary for them to fully explain these processes to obtain full marks for the question. There are many different approaches that candidates could take to address the requirements of this question. They may confine themselves to describing the processes of natural and sexual selection, and illustrate these with examples of animal behaviour. Alternatively they might take a socio-biological perspective, looking at the development of *strategies* such as the development of agonistic displays in dominance behaviour. The discussion of evolutionarily stable strategies would also be relevant in this context.

The use of the word 'behaviour' in the question does guide candidates toward addressing the degree to which the behaviour of animals is shaped by evolutionary forces (rather than their physical characteristics). There is not always a clear-cut distinction to be made between behaviour and physical characteristics (for example, the plumage of the peacock is *displayed* during courtship *behaviour* and affects the *behaviour* of the peahen), therefore examiners should be fairly sympathetic in the interpretation of the former term. Candidates who restrict their description to the evolution of *physical* characteristics alone, should receive a maximum mark in Band 1.

AO2

For the evaluative component of the question, some candidates may address the general status of evolutionary theory, rather than specific evolutionary explanations of behaviour. This is acceptable, as are the more specific limitations of such explanations when used to explain behaviour. Such limitations include the problems of 'proof' and 'inference' in evolutionary explanations of behaviour, and the underestimation of the role of experience. Some candidates may focus on the positive aspects of evolutionary theory, for example showing an awareness of how behaviours have evolved because they are advantageous in some way for the animals concerned, whilst others may offer interpretations of evolutionary changes from a 'selfish gene' perspective. Some candidates may draw on the role of *cultural* evolution in non-human animals, and perhaps contrast this with *genetic* evolution. This is perfectly acceptable, *provided* that material is restricted to *non*-humans, as indicated in the question. Examiners should allow for a wide variation in the possible content that candidates produce for the **AO2** component of the question.

Although the question mentions evolutionary explanations in the plural, it would be unreasonable to expect candidates to use anything but the Darwinian perspective, therefore no partial performance penalty is imposed for this question. It is likely that many students focus on evolutionary explanations of altruism. This is perfectly acceptable as an answer to this question, *provided* the links to evolution are made explicit. The degree to which this link is achieved by candidates, as with any other approach to this question, will characterise how coherent or well-constructed the answer is as a response to this question. As the question specifies 'non-human animals', material relating to evolutionary factors in human behaviour should not receive credit. Candidates who restrict their evaluation to the evolution of *physical* characteristics alone, should receive a maximum mark in Band 1.

QUESTION 13: AO1*Description of evolutionary explanations of the behaviour of non-human animals*

Band	Mark allocation	Marks
Band 3 Top	Description of evolutionary explanations of the behaviour of non-human animals is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of evolutionary explanations of the behaviour of non-human animals is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of evolutionary explanations of the behaviour of non-human animals is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of evolutionary explanations of the behaviour of non-human animals is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of evolutionary explanations of the behaviour of non-human animals is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of evolutionary explanations of the behaviour of non-human animals is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 13: AO2*Evaluation of evolutionary explanations of the behaviour of non-human animals*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of evolutionary explanations of the behaviour of non-human animals is thorough and there is evidence of appropriate selection and coherent elaboration . The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of evolutionary explanations of the behaviour of non-human animals is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of evolutionary explanations of the behaviour of non-human animals is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of evolutionary explanations of the behaviour of non-human animals is basic and there is some evidence of elaboration . The material is used in a restricted manner.	6-5
Band 1 Top	Evaluation of evolutionary explanations of the behaviour of non-human animals is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of evolutionary explanations of the behaviour of non-human animals is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

14

Total for this question: 24 marks

Critically consider research (explanations *and/or* studies) relating to the role of memory in navigation *and* foraging in non-human animals. (24 marks)

Critically consider is an **AO1** and **AO2** term, which requires the candidate to both describe and evaluate research (explanations *and/or* studies) relating to the role of memory in navigation and foraging. In the *Terms Used in Examination Questions* document, the term ‘research’ is defined as ‘the process of gaining knowledge and understanding via either theory construction, examination, or empirical data collection’.

AO1

This question requires candidates to critically consider research relating to the role of memory in navigation *and* foraging behaviour, although it is possible that some candidates might roll these two areas together into navigation *during* foraging. This is perfectly acceptable. This may be achieved by examining research evidence for the role of memory in these forms of behaviour. Candidates who choose to write about navigation should use material that demonstrates the role of *memory* in this process rather than simply writing about navigation *per se*. Appropriate content would include memory for landmarks, and the possibility that some animals are capable of forming 'cognitive maps'. Candidates who write about aspects of navigation *without* addressing the importance of memory should not receive marks. The same requirement is for material about foraging behaviour. The description of either theoretical explanations (such as optimality theory) or empirical studies of foraging must concentrate on the role of memory in the foraging process rather than, for example, the economics of foraging. Appropriate content might include the importance of spatial memory and the use of food caches as part of an overall foraging strategy.

AO2

If candidates choose to describe research *studies* as their **AO1** content, then evaluation may be achieved by examining the validity of the studies themselves, or the degree to which they confirm or challenge an underlying theoretical perspective *and/or* other related research in this area. For example, the claims for cognitive mapping skills in insects have been largely dismissed by counter-evidence whereas evidence for the same skills in mammals is less conclusive. Evidence for the development of specific brain structures (e.g. the hippocampus) in animals who rely on their spatial memory has also highlighted the importance of memory in foraging *and* navigational behaviour. The finding that London taxi drivers show particular forms of enlargement in their hippocampus when learning 'the knowledge' is evidence for the role of the hippocampus in memory (and therefore in navigation). However, this can only be used to illustrate a comparative process between species, rather than being directly relevant to the non-human emphasis in this question.

Note, there is a plurality requirement in this question. If candidates describe or evaluate research into the role of memory in *either* foraging *or* navigation alone, then partial performance penalties apply (see mark allocations). For many candidates, memory and foraging may be ‘fused’ together in research that covers them both. Partial performance is thus avoided in such cases.

QUESTION 14: AO1*Description of research relating to the role of memory in navigation and foraging*

Band	Mark allocation	Marks
Band 3 Top	Description of research relating to the role of memory in navigation and foraging is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of research relating to the role of memory in navigation and foraging is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of research relating to the role of memory in navigation and foraging is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence 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>	8-7
Band 2 bottom	Description of research relating to the role of memory in navigation and foraging is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth. <i>Partial performance is limited, generally accurate and reasonably detailed.</i>	6-5
Band 1 Top	Description of research relating to the role of memory in navigation and foraging is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable . <i>Partial performance is basic, generally accurate and lacking detail.</i>	4-3
Band 1 bottom	Description of research relating to the role of memory in navigation and foraging is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement. <i>Partial performance is rudimentary and sometimes flawed with little focus on the question.</i>	2-0

QUESTION 14: AO2*Evaluation of research relating to the role of memory in navigation and foraging*

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

15

Total for this question: 24 marks

Discuss evolutionary factors in the development of human intelligence.**(24 marks)**

Discuss is an **AO1** and **AO2** term, which requires the candidate to show evidence of their knowledge and understanding (**AO1**), and of their analysis and evaluation (**AO2**) of evolutionary factors in the development of human intelligence. The use of the term ‘factor’ in this question means that candidates might explore any of the many different areas in which human intelligence has been shown to have ‘evolved’.

AO1

Some candidates may write about the relationship between brain size and intelligence. Simply relating brain size with intelligence (a view that was popular with neuroanatomists at the turn of the century) is not sufficient. Candidates must show how brain size has been subjected to evolutionary forces, and how this in turn has influenced the development of human intelligence. Candidates might make some reference to other species to inform this point.

Alternatively, candidates may describe different explanations that explore the role of evolutionary factors in human intelligence. These include *foraging demands* in that the need to find food, and travel large distances, would have posed special demands for early man. Sophisticated cognitive skills would thus have been necessary for successful foraging. The increased complexity of social living would also have placed special demands on our ancestors. The *Machiavellian intelligence hypothesis* (Whitten and Byrne, 1988) suggested that the complexity of human intelligence arose out of the individuals’ need to serve their own needs in interactions with others, whilst at the same time preserving group cohesion. Stanford (1999) believes that the evolutionary origins of human intelligence lie in meat eating and especially in the cognitive capacities necessary for strategic sharing of meat. Among the more provocative explanations of the evolution of human intelligence is Morgan’s assertion that our capacity for intelligence is a by-product of evolving babyhood (Morgan, 1995). Morgan argues that our early struggles provide our formative intellectual activity, and this in turn has important survival implications.

AO2

Candidates may offer comparative arguments to justify the role of evolutionary factors in the development of brain size. For example, great apes have been shown to have more, and more flexible, intelligence than all the other primates and this is seen as providing good clues to the origins of human intelligence. As well as the behavioural ecology of wild primates, research evidence that might support the importance of evolutionary factors in the evolution of human intelligence comes from the palaeoarchaeology of extinct hominids, and ethnography of tropical foraging peoples. Candidates may also comment on the theoretical limits on brain size, for example how the risk of overheating places limits on how big a brain can be. Larger brains are ‘expensive’, in terms of the increased need for energy to run them efficiently, therefore it might be argued, they must confer us with significant advantages to offset these costs.

Note - it is not intended that this question requires a ‘plurality’ performance, but the number of ‘factors’ offered will constitute the *breadth* of the response.

QUESTION 15: AO1*Description of evolutionary factors in the development of human intelligence*

Band	Mark allocation	Marks
Band 3 Top	Description of evolutionary factors in the development of human intelligence is substantial . It is accurate and well-detailed . The organisation and structure of the answer is coherent . There is substantial evidence of breadth and depth and an appropriate balance between them is achieved .	12-11
Band 3 bottom	Description of evolutionary factors in the development of human intelligence is slightly limited . It is accurate and reasonably detailed . The organisation and structure of the answer is coherent . There is evidence of breadth and depth, although a balance between them is not always achieved .	10-9
Band 2 Top	Description of evolutionary factors in the development of human intelligence is limited . It is generally accurate and reasonably detailed . The organisation and structure of the answer is reasonably constructed . There is increasing evidence of breadth and/or depth.	8-7
Band 2 bottom	Description of evolutionary factors in the development of human intelligence is basic . It is generally accurate but lacks detail . The organisation and structure of the answer is reasonable . There is some evidence of breadth and/or depth.	6-5
Band 1 Top	Description of evolutionary factors in the development of human intelligence is rudimentary and sometimes flawed . There is some focus on the question. The organisation and structure of the answer is reasonable .	4-3
Band 1 bottom	Description of evolutionary factors in the development of human intelligence is just discernible . It is weak and shows muddled understanding . The answer may be wholly or mainly irrelevant to the question's requirement.	2-0

QUESTION 1: AO2*Evaluation of evolutionary factors in the development of human intelligence*

Band	Mark allocation	Marks
Band 3 Top	Evaluation of evolutionary factors in the development of human intelligence is thorough and there is evidence of appropriate selection and coherent elaboration. The material is used in a highly effective manner.	12-11
Band 3 bottom	Evaluation of evolutionary factors in the development of human intelligence is slightly limited and there is evidence of appropriate selection and elaboration . The material is used in an effective manner.	10-9
Band 2 Top	Evaluation of evolutionary factors in the development of human intelligence is limited and there is reasonable elaboration . The material is used in a reasonably effective manner.	8-7
Band 2 bottom	Evaluation of evolutionary factors in the development of human intelligence is basic and there is some evidence of elaboration . The material is used in a restricted manner.	6-5
Band 1 Top	Evaluation of evolutionary factors in the development of human intelligence is superficial and rudimentary and there is no evidence of elaboration . The material is not used effectively .	4-3
Band 1 bottom	Evaluation of evolutionary factors in the development of human intelligence is muddled and incomplete . The material may be wholly or mainly irrelevant .	2-0

A LEVEL/A2 UNIT 4: ASSESSMENT GRID

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

Marks	AO1	AO2	QoWC
Total marks for 3 questions	36	36	4
A-level total weighting (15%)	7.8%	7.2%	