

Version 1.1:0810



**General Certificate of Education
June 2010**

CRITICAL THINKING

CRIT3

Unit 3 Beliefs, Claims and Arguments

Mark Scheme

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

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Set and published by the Assessment and Qualifications Alliance.

Critical Thinking Mark Scheme

INTRODUCTION

The nationally agreed assessment objectives in the QCA Subject Criteria for Critical Thinking are:

AO1 Analyse critically the use of different kinds of reasoning in a wide range of contexts.

AO2 Evaluate critically the use of different kinds of reasoning in a wide range of contexts.

AO3 Develop and communicate relevant and coherent arguments clearly and accurately in a concise and logical manner.

- Marks are allocated to the assessment objectives according to the nature of each question and what it is intended to test.
- For Questions 1–8, Examiners need only provide a total mark for each of the candidates' answers. They do not need to provide a breakdown by Assessment Objective.
- For Question 9, marks should be awarded according to the generic marking grid.
- Candidates should be able to achieve the highest marks with a selection of relevant points, not necessarily the complete range.
- **Indicative content is provided as a guide for examiners. It is not intended to be exhaustive and other valid points must be credited.**

Unit 3 Beliefs, Claims and Arguments

[Where there is a range of marks (e.g. 1–2) the lower mark is awarded for responses that take the right direction but lack clarity or accuracy.]

Section A

No.	Question	AO:	1	2	3
Section A: Beliefs and claims					
1	<p>Briefly explain why altruism is a ‘puzzle’ for many scientists. (4 marks)</p> <p>A sufficient answer [3–4] would be that there is no apparent survival advantage to an individual organism in being altruistic; OR that altruism seems to contradict the law / principle of the survival of the fittest; OR that it is hard to explain how altruism began to evolve in the first place / could occur (or evolve) in species considered incapable of conscious thought?</p> <p>1–2 for imprecise or general answers: e.g. that altruism doesn’t make sense for evolution; OR that animals which help others don’t survive.</p>		2		2
2	<p>What is the key difference between <i>biological altruism</i> and altruism in the more ordinary sense? Give a pair of contrasting examples, which illustrate the difference. (4 marks)</p> <p>First part:</p> <p>1–2 for any answer which clearly identifies intention / conscious thought / conscious act as the difference between ordinary and biological altruism.</p> <p>Second part:</p> <p>1–2 for citing social insects, sea rocket, etc. and comparing them with examples such as, people sharing food in times of shortage, giving to charity, assisting an old or disabled person.</p>		2		2
3	<p>(a) Identify <u>three</u> pieces of evidence in Document B for the theory of Kin Selection as an explanation for altruism in the natural world. Does the evidence provide convincing support for the theory? (5 marks)</p>		3	2	

No.	Question	AO:	1	2	3
	<p>First part: The evidence includes:</p> <ul style="list-style-type: none"> • the behaviour of social insects, which serve the queen and the colony rather advantaging themselves as individuals. • animals that make more warning calls when close relatives are about • plants that are less aggressive / competitive when sharing resources with a clone. <p style="text-align: right;">(1 mark each)</p> <p>Second part: An acceptable answer would be that the examples suggest <i>only</i> that kin selection may operate in some species; AND / OR: that this is insufficient to explain all forms of altruism / how altruism evolved / what causes organisms to perform altruistic acts [1–2]</p> <p>[0 for responding that the examples give convincing support.]</p>				
	<p>(b) Walrus have been known to adopt orphans who have lost their parents to predators.</p> <p>If true, is this claim a problem for the theory of Kin Selection?</p> <p>How might a supporter of the theory respond to it?</p> <p style="text-align: right;">(3 marks)</p> <p>It is a potential problem because the orphan and the adoptive parent may not be (closely) related (1)</p> <p>A feasible response would be one that qualifies the theory or provides a supplementary explanation (+ 1–2). For example:</p> <ul style="list-style-type: none"> • kinship may extend beyond the immediate family / every member in a walrus colony may be related sufficiently for kin selection to operate; • the adult walrus may mistake an orphan for a close relative, or possibly for one of its own offspring; • kin selection may have evolved in the past and gradually extended to all members of the species. <p>Conceivably a candidate may say that a supporter of the theory might decide that the theory was flawed / no longer tenable, because it was a counter-example that could not be explained by kin selection.</p>			3	

No.	Question	AO:	1	2	3
4	<p>With the help of Document C, identify <u>one</u> key difference between the theory of Kin Selection and the theory of Reciprocal Altruism.</p> <p style="text-align: right;">(2 marks)</p> <p>E.g. When kin selection operates there is no need for any payback, as there is with reciprocal altruism. It is enough that the kin-group benefits.</p> <p>With reciprocal altruism there must be an advantage for the individual donor as well as the beneficiary – not necessary for the theory of kinship selection. (1–2)</p>		2		
5	<p>The theory of Reciprocal Altruism predicts that if organisms act in ways that assist others, they should gain some advantage or benefit in return.</p> <p>(a) What could – and what could not – be reliably inferred about the theory from each of the following? Give a brief explanation for each answer.</p> <p>(i) Many observed instances of organisms assisting others and gaining some measurable advantage for themselves? (3 marks)</p> <p>(ii) Some observed instances of organisms assisting others without gaining any measurable advantage for themselves. (3 marks)</p> <p style="text-align: right;">(6 marks)</p> <p>(i) A good answer [2–3] would be that these are confirming instances, or examples of what could be expected or predicted if the theory were true. But they do not prove it true / do not necessarily provide the correct explanation / do not mean that the altruistic behaviour is necessarily reciprocal.</p> <p>A partial answer [1] would be (e.g.) that the observations don't prove the theory because 'many' is too vague; OR that they give it some support because they show that some organisms do help others and get some benefit in return.</p> <p>(ii) A good answer [2–3] would be that these are not confirming instances since they do not show organisms receiving any return for their altruism. However, they are not disconfirming either, as the theory does not require every altruistic act to have a measurable benefit. For example, the theory allows that some organisms 'cheat' / don't return the benefits they receive. This would account for the observations without abandoning RA. <i>Continued...</i></p>		6		

No.	Question	AO:	1	2	3
	<p>A partial answer [1] would be that these observations don't disprove theory; OR that they weaken the theory. OR that they don't go against it completely. A wrong answer [0] would be that they (completely) disprove it.</p>				
	<p>(b) Suggest <u>one</u> other prediction – something you would expect to observe – if the theory of Reciprocal Altruism (as described in Document C) is correct?</p> <p style="text-align: right;">(2 marks)</p> <p>E.g. [for 1–2]:</p> <ul style="list-style-type: none"> • individuals that constantly act selfishly being disadvantaged / punished / excluded etc. • individuals that are not related sometimes assisting each other. • individuals that come into contact regularly assisting each other more than they do strangers. • individuals that assist each other having regular contact / not being strangers. 			2	
6	<p>Question 6 refers mainly to the Prisoners' Dilemma, discussed in Document D.</p> <p>(a) 'In a single, one-off situation it is a better strategy to act selfishly and inform.' (Document D, last-but-one paragraph.)</p> <p>Give a brief argument or explanation in support of this claim.</p> <p style="text-align: right;">(4 marks)</p> <p>A good answer [3–4 marks] would be that the outcomes of informing are either a 7 year sentence or 0; whereas the outcomes of cooperating / staying silent are 3 or 20.</p> <p>A partial answer [1–2] would be one of the above but not both.</p> <p>(An alternative reading of the question is: why is informing better <i>in a one off situation</i>? With this emphasis, an acceptable answer (3–4) would be that in a one off situation there is no risk of retaliation for informing, nor any advantage to be had from a return favour for staying silent.)</p>			4	
	<p>(b) What support does the Prisoners' Dilemma give to the theory of evolution by Natural Selection?</p> <p style="text-align: right;">(6 marks)</p>			3	3

No.	Question	AO:	1	2	3
	<p>A good answer [5–6] would one that recognised that the PD is a model or analogue for the range of real life situations in which people have to choose between selfish and altruistic behaviour, purely on the basis of its advantages and disadvantages. It shows that in the long term altruism gives each individual more gains than losses. This gives support to the theory of NS by suggesting how / why altruism could have evolved naturally.</p> <p>A partial answer [3–4] would be noting one or more of the ways in which the PD explains the advantages of cooperation / reciprocal altruism (but without fully explaining the support this gives to NS).</p> <p>A weak answer [1–2] would just note some relevance of the PD to NS – e.g. by saying (incorrectly) that it shows how selfish behaviour (informing) can benefit an individual / increase its ‘fitness’.</p>				
	<p>(c) What ethical issues, if any, are raised by the Prisoners’ Dilemma?</p> <p>Give a short explanation in support of your answer.</p> <p style="text-align: right;">(6 marks)</p> <p>There are various possible answers. Marks should be awarded for the citing of one or more relevant ethical issues, or explaining why the PD arguably raises no ethical questions. For example:</p> <ul style="list-style-type: none"> • Whether it can be right to act only in one’s own interest (egoism), or to make self-interest alone the reason for one’s actions; or whether we should always put other people’s interests first, or at least take them into consideration. • Whether it can ever be right to break an agreement or promise or trust etc. Whether keeping promises etc. is an imperative / binding principle. • Whether the ‘golden rule’ applies: the prisoners should always act in the way they would like the other prisoner to behave. • Utilitarian / consequentialist issues: should each prisoner choose what they believe will bring the most benefit to both of them or to the maximum number of people involved? • No moral or ethical issues are involved. This is a game or game-like scenario / a strategic rather than a moral dilemma. All that matters is winning – or at least losing by as little as possible. <p>Candidates may reasonably argue that the ‘game’ itself is immoral, in the sense that it sets a cruel dilemma / creates conflict, encourages lying, disloyalty, and betrayal / punishes altruism, loyalty, trust. OR that the interrogators are using (abusing) the men as means to obtain a conviction instead of trying them fairly, etc. <i>Continued...</i></p>	2	2	2	

No.	Question	AO:	1	2	3
	<p>0 for responding that there are no moral issues (but without explanation).</p> <p>1 – 2 for identifying one or more relevant issues (but without explanation).</p> <p>3 – 4 for identifying moral issue(s), or responding that there are none, <i>plus</i> limited explanation.</p> <p>5 – 6 (as above) <i>plus</i> well-developed explanation, with evident understanding of some ethical concepts included in the specification for Unit 3.</p> <p>Use of words such as ‘imperative’, ‘egoism’, is not a necessary requirement if the relevant point is made in non-technical terms.</p>				
	Total Section A: (42)		11	18	13

Section B: Arguments

No.	Question	AO:	1	2	3
	<p>Questions 7– 8 are based on the following short text.</p> <p>A truly altruistic act, such as giving or helping, is one which is performed simply out of kindness: for the sole benefit of others and without consideration for oneself. So-called Reciprocal Altruism is therefore not altruism at all, because it is motivated by the prospect of gaining something in return. Since the only plausible theory we have for displays of kindness in the natural world is Reciprocal Altruism, true altruism does not exist.</p>				
7	<p>Give a clear analysis of the above argument, identifying the reasons and conclusion (or conclusions) and explaining the argument structure.</p> <p style="text-align: right;">(8 marks)</p> <p><i>E.g.</i></p> <p>1. A truly altruistic act is performed simply out of kindness... (whereas)</p> <p>2. Reciprocal Altruism is motivated by the prospect of gaining something in return</p> <p><i>Therefore (from 1 and 2):</i></p> <p>3 / IC: (So-called) Reciprocal Altruism is not altruism at all</p> <p>4. The only plausible theory we have for displays of kindness in the natural world is Reciprocal Altruism</p> <p>-----</p> <p>C: (from 3 and 4): True altruism does not exist.</p> <p>1 – 2 for recognising the general direction of the argument;</p> <p>3 – 4 for identifying the main conclusion and two or more reasons;</p> <p>5 – 6 for clear representation of the argument structure ...</p> <p>7 – 8 ...AND for (additionally) acknowledging its complexity: noting the sub-argument / recognising complexity;</p> <p>+1 for noting that the first premise is a definition. (Max. 8)</p>	8			

No.	Question	AO:	1	2	3
8	<p>Give your evaluation of the argument, commenting critically on the claims, the assumptions and the reasoning.</p> <p style="text-align: right;">(8 marks)</p> <p><i>For example:</i></p> <p>The argument starts with a very strong definition of a ‘truly altruistic act’ as one which is <i>solely</i> done for others and with <i>no</i> consideration for oneself. If this is correct then it is reasonable / safe to conclude that reciprocal altruism is <i>not</i> truly altruistic, because it is done with the expectation of some return (i.e. not solely for others). However, the definition is questionable / arguably too strong, etc. (due to the inclusion of the word ‘sole’). It assumes / implies that there are no truly altruistic acts which can be done with some self interest <i>and</i> consideration for others in mind at once. Nonetheless, if we do accept the definition, we must accept the intermediate conclusion, so it would fair to say the sub-argument was valid, if not sound.</p> <p>The second step in the argument adds the premise that reciprocal altruism is the only plausible theory we have. This may or may not be true / acceptable. For example, it would be contested by those who consider kinship selection as a plausible theory. However, even if the claim is true, it does not follow that, because we have only one plausible theory for ‘true altruism’, no such thing as true altruism can / could exist. To draw this conclusion it would have to be assumed that nothing exists unless or until we have a plausible theory for it. Or that not having a plausible theory for some phenomenon means that it cannot exist or cannot be explained.</p> <p>Some candidates may comment on the use of / importance of the qualifying words: ‘truly’, ‘simply’, ‘sole’, and ‘true’. They might note that ‘true’ and ‘truly’ are in need of clarification or an explanation of how <i>true</i> altruism differs from altruism in general. They might fairly classify some of these terms as rhetorical. The phrase ‘so-called’ could also be classed as (mere) rhetoric / persuasive language; and/or that it begs the question / prejudices RA as not being ‘real’.</p> <p>The above are some examples of the kind of evaluation points that a candidate could make. They are not meant as an exhaustive list. Marks should be awarded as follows:</p> <p>1 – 2 for basic evaluative comment: accepting or rejecting claims or conclusion/s, but with limited accompanying explanation.</p> <p>3 – 4 for evidence of reasoned assessment: e.g. commenting on the strength of the reasoning and / or giving some reasons for accepting or rejecting claims.</p> <p>5 – 6 for <i>developed</i> critical comment on two or more specific parts or features of the argument, such as the assumption behind the ‘only plausible theory’ premise, or the acceptability of the definition of ‘true altruism’.</p> <p><i>Continued...</i></p>			8	

No.	Question	AO:	1	2	3
	<p>7 – 8 for insightful critical comment on the validity / soundness / adequacy of each of the steps in the argument, and the acceptability of the premises. The candidate should show clear understanding of the claims and assumptions, the structure of the reasoning, and the impact of some of the language / rhetoric.</p>				
<p>9</p>	<p>Examine the following photograph and accompanying text. Then answer the question that follows:</p> <p>SEE QUESTION PAPER FOR PHOTOGRAPH OF FIREMEN</p> <p>Should rescuers risk their own lives, often in vain?</p> <p>Support your answer with a short, reasoned argument.</p> <p style="text-align: right;">(12 marks)</p> <p>Candidates can take either position (or a balanced one). They can argue (e.g.) that rescuers should not take serious risks with their own lives because if they die saving someone else it is still a life lost. Worse still, it is two lives lost if the rescue is in vain. Rescuers should carry out or attempt a rescue only if they have a strong expectation that it will not result in their own deaths.</p> <p>Likewise those who find themselves in need of rescue should not expect their lives to be saved at the cost of someone else's, especially if they have voluntarily or carelessly put themselves in danger – e.g. mountain climbers, off-piste skiers, canoeists, etc. We are all responsible for our own safety, and should not ask others to risk their lives to save ours.</p> <p>Alternatively it could be argued that risking one's life for someone else is a virtuous act and people who do it should be praised for their heroism / courage / not deterred or disparaged by talk of pointless sacrifice / waste of life.</p> <p>It could be argued that people who have signed up for jobs in rescue services have a (legal, contractual) duty to risk their lives for others. It could even be argued that all of us have a <i>moral</i> duty to do what we can for someone in danger; or to risk for them what we would hope they would risk for us if we were in danger.</p> <p>It could be argued that risk is a relative term: the risk to a trained rescuer may not be as great as the danger in which those needing rescue are in.</p>			<p>12</p>	

No.	Question	AO:	1	2	3
	<p>The risk faced by an expert fire-fighter may be small compared with the near-certainty of death for a victim trapped in burning building. Thus there is a difference in asking whether someone should risk their life or throw their life away. We can answer Yes to one and No to the other.</p> <p>These are example of the various lines that could be taken. Candidates may base their responses, examples etc. on the particular issues suggested by the text and the events of 9/11. For example, they may challenge or support the message (or the implied utilitarian point) in the Faludi extract. Or they may answer the question more generally as above, so long as they recognise the context in which the question is obviously set. Also they can, but do not need to, discuss the question in terms of altruism and evolution or with reference to the documents. It could perhaps be argued that risking our lives is how the human species has survived and evolved.</p> <p>The marks are for the quality of the reasoning, not for any 'right' or 'wrong' conclusions.</p>				
	Total Section B: (28)		8	8	12
	+ Section A: (42)		11	18	13
	Total Paper 3: (70)		19	26	25

Generic mark-grid for Section B:

Criteria	Award level					
	Good response	Reasonable Response	Basic response			
	Thoroughly met, well structured and clearly expressed	Partially met with adequate expression and structure	Some weaknesses of expression / structure. Criterion not met: 0			
Conclusion Appropriate conclusion, relevant to the question and consistent with candidate's reasoning.	3	2	1			3
Reasoning One or more effective reasons or lines of argument relevant to the question and context	5 – 6	3 – 4	1 – 2			6
Supplements to reasoning (1 or more): example / counter example; analogy; evidence; explanation; reference to principle; anticipating and responding to objections	3	2	1			3
			AO1: 27% AO2: 37% AO3: 36%	19	26	25

- NB Candidates are not rewarded for exhibiting additional knowledge per se, but for the use they put it to in their reasoning if they choose to introduce it. Conversely, there is no penalty for not exhibiting additional knowledge: use of the documents alone is sufficient for awarding 'good response' (5–6).