

Level 2 Award

Thinking and Reasoning Skills

Unit **B902**: Thinking and Reasoning Skills Case Study

OCR Level 2 Award

Mark Scheme for January 2015

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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1. These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Annotation	Meaning of annotation
	Unclear
	Benefit of doubt
	Caret sign to show omission
	Cross
	Development
	Significant amount of material which doesn't answer the question
	Level 1
	Level 2
	Level 3
	Level 4
	Not answered question
	Benefit of doubt not given
	Page seen

Question		Answer/Indicative content	Mark	Guidance
1	(a)	Credit 1 mark for underlining 'Bringing animals back to life is a bad idea'.	[1]	
	(b)	Credit 1 mark for putting brackets around the IC (so bringing them back is just inviting them into an unsuitable, dangerous environment that they won't survive in for long anyway)	[1]	Answers that identify the correct IC but stop after the word 'environment' should be credited. Answers which exclude 'so' at the start of the IC should be credited.
	(c)	Credit 1 mark for circling 'so'	[1]	
2		<p>Credit 1 mark for each relevant reason that would offer some support to the claim that reviving a species is like playing God.</p> <p>Creditworthy examples:</p> <ul style="list-style-type: none"> • Because it is altering nature. • Because people think God created animals. • Because it's not our place to. • Only God can create life. • Humans cannot pick and choose what lives and dies. • They may have died out for a good reason. • Bringing things back to life is like a miracle that God would perform. 	[1+1]	<p>Answers which repeat the same point twice should be given a maximum of 1 mark</p> <p>Reasons which focus on the practical implications of de-extinction but do not directly support the counter-argument that we'd be 'playing God' should not be credited e.g. 'they might not be suited to our environment.' To gain credit, an answer must focus on reasons why it is inappropriate for human beings to tamper with creation/nature in this way.</p>

Question		Answer/Indicative content	Mark	Guidance
3		<p>Credit up to 2 marks for each correct explanation.</p> <p>Creditworthy examples:</p> <ul style="list-style-type: none"> • The evidence is from 1996, so techniques might have improved by now. • The evidence is about sheep eggs but his argument is about elephants, which might have better results. • You can't compare elephants to sheep eggs because elephants might produce more eggs than sheep do. • The first time might have involved mistakes that didn't happen again. <p>Examples which would gain 1 mark:</p> <ul style="list-style-type: none"> • Sheep and elephants are not similar at all. • It may not take as long to do as it did with the sheep. 	[2+2]	<p>Answers which lack clarity and/or development should be given 1 mark</p> <p>Answers which repeat the same point twice should be given a maximum of 2 marks</p> <p>Answers in which the link between the evidence and Craig's claim is only implicit should only be given 1 mark.</p>
4	(a)	Credit 1 mark for putting a tick next to the second box	[1]	Please follow the guidance on crossed out and duplicated answers.
	(b)	<p>Credit up to 2 marks for a clear and developed statement of a relevant difference which clearly relates to the focus of the analogy about inspiring children.</p> <p>2 mark examples:</p> <ul style="list-style-type: none"> • Being an astronaut is exciting/inspirational to children, whereas working in a lab in a white coat making mammoths isn't. • Being an astronaut is all about space, but being a scientist involves other, boring stuff. • The moon landings were broadcast all round the world and children who watched it were inspired, but the cloning of the woolly mammoth would only be reported in the news, so children are less likely to be inspired by that. 	[2]	<p>Answers in which the comparison between the two sides of the analogy is only implicit should only be given 1 mark.</p> <p>Answers in which there is an explicit comparison, but which is marginal to the focus of the analogy would get just one mark.</p> <p>Answers which identify a difference which is nothing to do with the analogy receive no credit. e.g.</p> <ul style="list-style-type: none"> • A relevant difference is that going to the moon and bringing back a woolly mammoth are completely different things. • One is making something, the other is going somewhere.

Question		Answer/Indicative content	Mark	Guidance
		<ul style="list-style-type: none"> Children might not find bringing animals back very exciting. Going into space is much more fun. 1 mark examples: <ul style="list-style-type: none"> Being an astronaut is an adventure. No one has created a mammoth before, but man has walked on the moon already. 		
	(c)	Credit up to 2 marks for a clear and developed statement of a relevant similarity. 2 mark examples: <ul style="list-style-type: none"> They are both massive breakthroughs that are likely to inspire children to do the same. Both events attract a lot of public attention, so children might think they can be famous by doing the same. 1 mark examples: <ul style="list-style-type: none"> They both bring fame and fortune. They are both great scientific advances that would change the world 	[2]	Answers in which there is a clear similarity given, but which is marginal to the focus of the analogy would get just one mark. Answers which identify a similarity which is nothing to do with the analogy receive no credit. e.g. <ul style="list-style-type: none"> They are both about science
5	(a) (b) (c) (d) (e) (f)	Credit 1 mark for each correct answer as follows: Statement Number 2 is supported by sources A, B and D. Statement Number 3 is supported by source D only. Statement Number 1 is supported by sources B and C. Statement Number 5 is supported by source C only. Statement Number 6 is supported by sources A and B. Statement Number 4 is supported by sources A and D.	[6]	Please follow the guidance on crossed out and duplicated answers.

Question		Answer/Indicative content	Mark	Guidance
6	(a)	Credit 1 mark for putting a tick next to 'slippery slope'.	[1]	Please follow the guidance on crossed out and duplicated answers.
	(b)	<p>Credit 1 mark for answers that show an understanding of a slippery slope flaw</p> <p>Creditworthy examples:</p> <ul style="list-style-type: none"> • Monkeys giving birth to Neanderthals is an unlikely/extreme conclusion from using an elephant as a mammoth surrogate. • It goes too fast to an extreme ending. • The argument is really exaggerated. Saying that spider monkeys can give birth to Neanderthals is just ridiculous. 	[1]	<p>Answers which give demonstrate an understanding of the key elements of slippery slope flaws, such as the extreme nature of their reasoning, should receive credit.</p> <p>Answers which simply talk about 'jumping to conclusions' without the 'extreme' nature of these conclusions being explained do not get the credit.</p>
	(c)	<p>Award up to 2 marks for each clear and developed explanation related to bias.</p> <p>Award 1 mark for an answer that lacks clarity or for a partial but clear explanation.</p> <p>2 mark examples:</p> <ul style="list-style-type: none"> • Because he is an animal rights activist, so he is bound to be concerned about the animals. <p>1 mark examples:</p> <ul style="list-style-type: none"> • He is concerned about animal rights. • He only cares about animals, not science. • He's an animal rights activist, so he doesn't look at both sides. 	[2]	Answer has to relate to bias to receive credit. Answers which rely entirely on vested interest, expertise or other criteria cannot be credited.

Question	Answer/Indicative content	Mark	Guidance
7	<p>Award up to 2 marks for each clear and developed explanation related to vested interest.</p> <p>Award 1 mark for an answer that lacks clarity or for a partial but clear explanation.</p> <p>2 mark examples:</p> <ul style="list-style-type: none"> • Because he is a zoo owner, so he would want there to be lots of new species to attract people to zoos. <p>1 mark examples:</p> <ul style="list-style-type: none"> • He owns a zoo. 	[2]	<p>Answer has to relate to vested interest to receive credit. Answers which rely entirely on bias, expertise or other criteria cannot be credited.</p>
8	<p>Award up to 2 marks for each clear and developed explanation of a strength related to a relevant credibility criterion.</p> <p>Award 1 mark for an answer that lacks clarity or for a partial but clear explanation.</p> <p>2 mark examples:</p> <ul style="list-style-type: none"> • He is the scientist who worked on the Dolly the sheep project so he knows what he is talking about. • He has a good reputation as a stem cell scientist. <p>1 mark examples</p> <ul style="list-style-type: none"> • He can weigh up the pros and cons, so is not biased. • He's a stem cell scientist 	[2+2]	<p>No marks are to be awarded for simply naming a criterion. The quality of the explanation should determine whether an answer is awarded 1 or 2 marks.</p>

Question		Answer/Indicative content	Mark	Guidance
9		Credit 1 mark for putting a tick next to 'rant'.	[1]	Please follow the guidance on crossed out and duplicated answers.
10	(a)	<p>Credit 1 mark for each relevant, clearly stated assumption.</p> <p>Creditworthy examples:</p> <ul style="list-style-type: none"> - Rights are related to brain size. - Brain size makes a difference to intelligence. - How we are raised influences our capabilities. - Brain capacity and cavity are the same. - Neanderthals learn in the same way as humans - It is possible for Neanderthals to be raised the same as humans 	[1+1]	
	(b)	<p>Credit 1 mark for each reasonable, potential consequence of bringing back Neanderthals.</p> <ul style="list-style-type: none"> - There might be conflict between them and humans. - They might suffer/die like Dolly. - They might rebel against us like Planet of the apes. - They might hunt other species to extinction. - They could introduce new diseases - They act like humans and fit in to our everyday lives 	[1+1]	
11		Credit 1 mark for putting a tick next to 'explanation'.	[1]	Please follow the guidance on crossed out and duplicated answers.

Question	Answer/Indicative content	Mark	Guidance
12	<p>Award up to 2 marks for a clear and developed explanation of the weakness (recognising correlations are open to different interpretations) with reference to the text.</p> <p>2 mark examples:</p> <ul style="list-style-type: none"> • Just because global warming was not a problem then does not mean that there is any link between global warming and the extinct animals. • He's assuming it was animals in the past that stopped global warming, when actually it's humans today who cause it. Bringing animals back won't stop it. <p>1 mark examples:</p> <ul style="list-style-type: none"> • It might not have anything to do with global warming • Woolly mammoths are not really linked to climate in any way. • He is saying that all of our problems will be solved to do with global warming if these animals are brought back 	[2]	<p>Answers which show an understanding that the weakness is to be found in the claimed link between solving global warming and de-extinction should be credited with one mark. An explanation of why this is a weakness should be awarded two marks.</p>
13	<p>Award 1 mark for each reasonable criterion suggested.</p> <p>Creditworthy examples:</p> <ul style="list-style-type: none"> • Cost/money • Public opinion • Ethics • Geographical location • Likelihood of success • Animal welfare • Surrogate welfare • Beneficial factors • Resources 	[1+1]	<p>Answers which are posed as questions, such as 'where would they live?' or 'would it cause extinction of other animals?' can be credited if, like these, they express understanding of a valid criterion. This is equally true of more descriptive answers such as 'if they carry any diseases which are dangerous to humans.'</p> <p>Where two answers are given which cover the same criterion, only one mark can be credited.</p>

Question	Answer/Indicative content	Mark	Guidance
14	<p>Marks are to be allocated in accordance with the performance descriptors below. The content for the arguments may be utilised and/or developed from the documents or may be independent of those documents.</p> <p>Performance descriptions for 7 to 10 marks: Level 3</p> <ul style="list-style-type: none"> • The conclusion is precisely stated • Reasons are provided for the conclusion, which are persuasive, cogent and fully developed • The structure of the reasoning is clear and explicit and places minimal reliance on assumptions • Evidence and examples are provided which are both relevant and clearly strengthen the reasoning • Grammar, spelling and punctuation are good. 	[10]	<p>The main discriminator here in terms of levels is likely to be the quality of the reasoning.</p> <p>The candidates should all have had an opportunity to study the pre-release documents, so developed reasons should be expected in order to reach level 3, making use of evidence and/or examples drawn from the documents or introduced independently.</p> <p>Marks within the levels can be determined by the number of reasons provided and the extent of the evidence or examples provided.</p> <p>Example of a L3 answer: <i>We should not consider the de-extinction of animals. This is because very little is known about such animals, so this could pose a threat to human beings. For example, a woolly mammoth may have a similar temperament to a lion, and attack humans who try to get too close. This would make it difficult and dangerous to care for and learn about the animal. Another reason is that de-extinction could pose a threat to other animals and the environment. We cannot know exactly what an extinct species used to eat, so reviving them could affect food chains and lead to the extinction of other species through survival of the fittest. A final point is that it may be cruel to the animals themselves, because there may be no suitable environment for them in the world today. Even though it can be argued that we have the knowledge and technology to replicate certain environments in zoos, there is no guarantee that we will get it exactly right until we try it and there is a lot of evidence to suggest that animals suffer trauma when adapting to new environments. Therefore, it does not seem sensible to resurrect a species that has become extinct. [10 marks]</i></p>

Question	Answer/Indicative content	Mark	Guidance
	<p>Performance description for 4 to 6 marks: Level 2</p> <ul style="list-style-type: none"> • The conclusion is clearly stated • Reasons are provided for the conclusion, which are plausible and relevant • The structure of the reasoning is not fully explicit and does rely on some assumptions • Evidence and examples are provided which are relevant but are open to challenge • Grammar, spelling and punctuation are adequate. <p>Performance description for 1 to 3 marks: Level 1</p> <ul style="list-style-type: none"> • The conclusion is imprecise and unclear • Reasons are undeveloped and only provided weak support for their conclusion • Structure is either absent or minimal or unclear • Evidence and examples are poorly developed or explained and are open to obvious counter examples and objections • Grammar, spelling and punctuation may be inadequate. <p>0 marks – no creditworthy material</p>		<p>Example of a L2 answer: <i>De-extinction would enable us to learn and understand extinct animals better. We would also be able to bring back animals which human beings caused to go extinct. This would increase the diversity of animals in the world today. It has already been shown that animals can be brought back, such as the bucardo, a previously extinct goat. Therefore, de-extinction is a good idea in order to learn and help other animals both today and from the past. [5 marks]</i></p> <p>Example of a L1 answer: <i>Bringing back woolly mammoths is all good and well but look what happened to Dolly! The last thing we need is dead elephants all over the place. Neanderthals would be interesting, and so would dinosaurs if we could do that but it would have to be done secretly because otherwise people would panic if they've seen Jurassic Park. It would create loads of jobs too, which is a problem these days. [3 marks]</i></p>

Question		Answer/Indicative content	Mark	Guidance
15	(a)	<p>Credit up to 2 marks for each relevant, developed reason that supports Daniel's suggestion.</p> <p>Credit 1 mark for a reason that is relevant but less clearly developed/challenging.</p> <p>2 mark examples:</p> <ul style="list-style-type: none"> • It would make an excellent reality TV programme that would create jobs in the entertainment industry. • It would be of great interest to historians, as they would get a direct insight into historical man. • It would avoid social issues of mixing humans and Neanderthal. • It would allow them to live without interference • It would be a safe way to carry out the experiment as they wouldn't be in contact with humans to harm them. <p>1 mark examples</p> <ul style="list-style-type: none"> • Finding things out about our ancestors is important. • We could learn lots of things from this scientific experiment. 	[2+2]	

Question	Answer/Indicative content	Mark	Guidance
(b)	<p>Marks are to be allocated in accordance with the performance descriptors below.</p> <p>Performance descriptions for 5 to 6 marks: Level 3</p> <ul style="list-style-type: none"> • The conclusion is precisely stated • At least one reason is provided for the conclusion, which is persuasive, cogent and fully developed, which could be supported by evidence or examples. • The structure of the reasoning is clear and explicit and places minimal reliance on assumptions • Grammar, spelling and punctuation are good. <p>Performance description for 3 to 4 marks: Level 2</p> <ul style="list-style-type: none"> • The conclusion is clearly stated, though not necessarily precisely focused. • At least one reason is provided for the conclusion, which is plausible and relevant • The structure of the reasoning is not fully explicit and does rely on some assumptions • Grammar, spelling and punctuation are adequate. <p>Performance description for 1 to 2 marks: Level 1</p> <ul style="list-style-type: none"> • The conclusion is imprecise and unclear • The reason(s) provides very weak support for the conclusion • Structure is either absent or minimal or unclear <p>Grammar, spelling and punctuation may be inadequate.</p>	[6]	<p>Example of a L3 answer: <i>Putting Neanderthals on an island to be watched as an experiment is an awful idea for several reasons. Firstly, it is cruel to resurrect a species into an environment that may not suit them biologically and then leave them to their own devices to sink or swim. We may well learn a lot from watching them try to survive, but it is not an ethical way to conduct an experiment on living, feeling beings. Also, the costs involved in reserving an island, and setting it up with surveillance technology and all the things they might need to survive, would be huge. Unless we are willing to live there with them and help them they may die or suffer quite quickly, making the cost unjustified.</i> [6 marks]</p> <p>Example of a L2 answer: <i>Using Neanderthals as an experiment is cruel and unethical. It would lead Neanderthals to live only for our amusement. The conditions on the island would not be the same as the conditions they lived in before. Therefore, we shouldn't use Neanderthals on an island as an experiment.</i> [4 marks]</p> <p>Example of a L1 answer: <i>I do not think putting a family of Neanderthals on a deserted island is a good idea. We would need a family of them and it is hard enough to clone one let alone a whole family. We would need a suitable surrogate and I don't think many women would be willing to do this.</i> [2 marks]</p>

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