

**Level 2 Award**

**Thinking and Reasoning Skills**

OCR Level 2 Award in Thinking and Reasoning Skills **J930**

**OCR Report to Centres January 2015**

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This report on the examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the specification content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the examination.

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# B901 Thinking and Reasoning Skills

## General Comments

The question paper performed well and most candidates were familiar with the language of this qualification.

In Section A, candidates appeared to find the false appeal question harder than those of previous sessions and they seemed to find it harder to explain issues of credibility. The Venn diagram question also proved challenging.

This report repeats advice given last year about how to tackle questions asking candidates to identify patterns in data.

In Section B, many candidates wrote excellent arguments about museums and their artefacts, but often found it difficult to develop their own reasoning in Question 9.

## Comments on Individual Questions

### Section A

#### Question 1 (a):

The majority of candidates correctly identified the conclusion, but a relatively high number of candidates appeared to not notice the question and failed to offer a response.

#### Question 1 (b):

This proved to be a challenging question. Even though the two reasons are in a single sentence separated by the word “and”, they were nevertheless independent reasons because each could work without the presence of the other.

Candidates who circled the wrong map could gain some credit by offering a correct explanation, but there were very few instances of this, suggesting that candidates understood the maps and the language of joint and independent reasoning, but nevertheless found this a tricky example.

#### Question 1 (c):

More successful candidates were those who did not simply copy out or re-state part of the original argument. In Thinking and Reasoning Skills, an assumption is always something that has not been stated. An assumption can be defined as an unstated reason. For example, “It would prevent time being wasted” is not an assumption because this is something that has already been stated. “Providing stationery would promote equality” is not assumed, but “Lack of equipment is a cause of inequality” does go further than the original reason and is something the author needs to believe to make the argument.

Candidates are not usually penalised for overstating assumptions at Level 2. However, it is good practice that assumptions should not go further than the author needs to go. Including the word “all” or “always” often makes the reasoning more extreme than it needs to be. For example, the author does need to believe that time is sometimes or often wasted at the start of lessons, but he does not need to believe that this is always the case or that all lessons are delayed for this reason.

**Question 2 (a):**

This proved to be a very challenging question. Many candidates incorrectly identified appeal to popularity or appeal to history. Those who did correctly identify an appeal to authority often failed to explain the irrelevance of the appeal, which was the crucial aspect of the question. Einstein is certainly an authority on matters of Physics but his opinions on the taste of ice cream are no more reliable than anyone else's.

**Question 2 (b) (i):**

Part (i) failed to discriminate, with 100% of responses achieving maximum marks.

Part (ii) proved to be a challenging question.

Candidates who chose to use vested interest often failed to explain the criterion fully enough to achieve both marks. A full answer explained that the vested interest was to sell more ice cream and that this provides a motive to misrepresent the truth. There had to be some development linked to a motive to exaggerate and not just a motive to sell ice cream, otherwise the answer was not really about credibility.

Candidates who did not use credibility criterion often resorted simply to saying that there was an absence of evidence.

Some candidates misinterpreted the question and wrote about Einstein's credibility, rather than that of the ice cream parlour.

**Question 3 (a):**

This question asked candidates to identify patterns in data. As in previous sessions, more successful candidates tend to be those who start their answers with the words "all", "none" or "only". Answers starting "most" or "some" are not accepted as patterns. Patterns must relate to more than one person in the table.

As in previous sessions, examiners applied the principle that the absence of a pattern does not constitute a pattern. For example, "not all males can tie their shoe laces" would not be credited.

Mere observations, such as "more females than males can tell the time" are not credited.

**Question 3 (b):**

Part (i) proved extremely challenging. Owning a mobile phone is not a necessary condition for downloading an app, since apps may be downloaded on borrowed phones, or on devices other than mobile phones. Owning a mobile phone is not a sufficient condition for being able to download apps for many reasons, for example older phones may not have this feature.

Part (ii) proved much more accessible, with background information being helpful to candidates. Candidates who suggested that Leeza may not own a mobile telephone would have benefitted from more careful reading of the question.

**Question 3 (c):**

Most candidates suggested useful questions and were able to explain them. Less successful candidates sometimes repeated questions, for example, "How much time do you spend on the Internet?" and "How much time do you spend doing other things?" could not be credited twice. More successful candidates linked their questions to the development of skills.

**Question 4:**

The flaw in the reasoning could be described as tu quoque. The explanation should have been of the flaw in the reasoning, which was that two wrongs do not make a right. Less successful candidates argued that teachers probably have valid reasons for using their mobile phones in lessons.

**Question 5 (a)**

This was a slightly more challenging matrix question than on previous papers but was still accessible to the majority of candidates.

**Question 5 (b):**

This proved to be a challenging question. Less successful candidates often gave answers relating to problems with the sample size, which was a misinterpretation of the question. Many candidates said that November was not an autumn month, which was inaccurate and irrelevant. More successful candidates responded that the research represented an average and that Layla may not be an average student for various reasons relating to her ability of work ethic.

**Question 6:**

This Venn diagram question proved challenging and candidates might benefit from some practice with this type of problem.

In part (a) Eighteen students study French but two of these eighteen also study German, so it is necessary to subtract two from 18.

In part (b) Likewise, 26 study German but two needs to be subtracted because two of the 26 also study French.

In part (c) There are 42 students in the Venn diagram, so  $50-42=8$ .

**Section B**

**Question 7 (a):**

Most candidates did well on this question, being able to identify and explain weaknesses in the survey, such as poor sample size, the unrepresentativeness of the sample and the limited options.

**Question 7 (b):**

Many candidates responded that the conclusion could not be reliably drawn because the survey was unreliable. Other candidates gained credit by saying that the questions in the survey were only hypothetical whereas the conclusion is definitive.

**Question 7 (c):**

More successful candidates offered valid options that could be taken if the statues had to be returned, for example increasing the number of British artefacts.

**Question 7 (d):**

Most candidates understood what was required by this question. Candidates who use credibility criteria are now a small minority. A few less successful candidates suggested alternative choices, repeating part (c).

**Question 8:**

Almost 100% of candidates achieved maximum marks for this question.

**Question 9:**

As always, the most important factor determining the levels of response is the quality of the reasoning. Examiners are looking for two developed reasons to place candidates in the top mark band. Developed reasons are likely to be those that include indicator words. Less developed reasons are likely to invite the response, “and so...”

More successful candidates structured their answers clearly, placing each reason in a distinct paragraph and clearly identifying the conclusion.

Any counter arguments used need to be rebutted, otherwise they will damage the argument rather than strengthening it. Candidates are encouraged to argue for a conclusion rather than sitting on the fence.

Candidates were encouraged to use material from the documents but many less successful responses relied entirely on material from the documents and were consequently too derivative to access the top mark bands. Candidates could not be expected to have any background knowledge of this issue, but they were expected to develop their own reasoning rather than simply copying out.

In lifting reasons from the text, many less successful responses failed to question some key assumptions. For example, returning the statues to Greece does not mean they necessarily have to go back on the Parthenon. A law passed by the British parliament in 1963 does not bind any future parliament. Permission given between 1801-1805 does not necessarily represent the consent of the Greek people.

**Question 10:**

As with Question 9, the most important factor determining the levels of response is the quality of the reasoning. Good structure is important and candidates should not seek to “sit on the fence”.

Candidates found this question more accessible than Question 9, being less constrained by source material.

The most popular reason was that, if museums were not free, fewer would be able to visit them. The second reason was very often a variation of the first, for example that there would be an educational impact (because some would not be able to afford admission charges). Without development, this does not necessarily constitute two distinct reasons.

Many responses were less successful because they relied on assumptions, for example that people should not have to pay for education.

More successful answers offered alternatives to charges. Many candidates argued that if artefacts have been acquired through dubious means, people should not be charged for seeing them.

## B902 Thinking and Reasoning Skills Case Study

### General Comments:

The January season for B902 once again produced a number of strong responses which engaged positively with the subject matter of de-extinction. There was a noticeable absence of many weak scripts and candidates had clearly been well prepared for the unit. There were very few blank responses to any of the questions and positive attempts were made to answer even the most challenging questions on the paper.

Most candidates demonstrated a good familiarity with the pre-release material, an essential element of successful scripts for this unit. This was apparent in many of the answers to the questions assessing AO3 in Section B, allowing most candidates to gain at least half marks on these high tariff questions.

It is not only in the AO3 questions that a strong grasp of the documents and a wider awareness of the paper's theme are needed however. Questions which require candidates to demonstrate their critical thinking skills from AO1 are also taken from the documents and it was clear on this paper that there were many who had had a chance to think about argument structures, flaws, assumptions and analogies in advance of sitting the examination. It is always going to be of benefit to candidates to study the pre-release materials in class as thoroughly as possible and to practise these core skills through use of the documents.

Questions assessing AO2 skills also benefit greatly from familiarity with the documents and in this paper question 5 was a good example of another high tariff question which was more accessible to candidates with this heightened awareness.

### Comments on Individual Questions:

#### Section A

- Q1 There is nearly always a question early on in B902 which requires candidates to mark up an argument taken from one of the documents. In this case the question proved to be a little more difficult for candidates than similar questions from previous papers. More were able correctly to identify the main conclusion as the first sentence than were successful at identifying the intermediate conclusion in the second sentence. Many more were able to see that 'so' was the conclusion indicator word, but even here there were some other words circled instead. Perhaps candidates were distracted by the fact that the conclusion indicator word was attached to the intermediate conclusion, although this doesn't alter its function. Centres are encouraged to practise marking up skills by making use of the pre-release materials in the immediate preparation for the examination.
- Q2 This question was generally well answered, with most candidates able to provide at least one valid reason in support of the counter-argument. Successful answers focused on the specific point made in the counter-argument about 'playing God' and reasons which made the link here with altering nature were also valid. Answers which gave more general reasons that challenged de-extinction, but did not address the issue of 'playing God' were not credited as they did not support the counter-argument given. A small minority of candidates gave reasons which supported the opposite argument, suggesting for instance that man had played God in the first place in helping to cause animals to become extinct and that we therefore had a duty

to carry out de-extinction. As such answers clearly did not provide a reason to support the counter-argument they could not be credited.

- Q3 Most candidates were able to gain some credit for this question, but only a small minority was able to explain two weaknesses successfully enough to be awarded all four marks here. The most successful candidates were those who focused on either the advances made since the cloning of Dolly the sheep through better technology and increased experience, or on the fact that elephants' eggs could produce much better results than sheep eggs. Candidates who challenged the argument rather than explaining the weaknesses in the link between the evidence and the claim were not successful. In this latter category a significant minority of candidates focused on the unlikelihood of elephants becoming extinct.
- Q4 As has been commented upon in previous reports, candidates often find questions assessing their ability to analyse an analogy quite challenging. In part (a), most correctly identified that the analogy was comparing putting a man on the moon with bringing back a woolly mammoth as a means of inspiring children. It proved a lot harder for candidates to go on to explain a relevant difference in part (b). The key to success here, as with all analogy questions, was to focus on what the analogy was about and to produce a relevant difference. Successful candidates were able to reflect on the fact that the moon landings were more exciting for children than the lab work of de-extinction, or that the moon landings were so much more publicised and visual than cloning, and thus there is a difference in terms of how much they would inspire children. The most common uncredited answers confined themselves to differences between being astronauts and being biomedical scientists without explaining how these differences would impact on inspiring children. Most candidates found it easier to identify a relevant similarity, though many fewer were able to explain this similarity successfully enough to gain both marks. Common answers identified that both parts of the analogy represented significant scientific breakthroughs, without going on to say that this would therefore inspire children, which would have gained full credit as an explanation.
- Q5 As there was a total of six marks available for this question; candidates who invested time in linking the statements to the sources were well rewarded. A significant minority of candidates gained full marks across the six elements and a significant majority gained at least half marks. Candidates found parts (c), (d) and (e) easier to identify correctly than the other three parts of the question.
- Q6 (a) Most candidates correctly identified this as a 'slippery slope', recognising the familiar elements of this flaw. The most common incorrect response was to see this as an example of a false dilemma.
- Q6 (b) A minority of candidates were able to translate their correct identification of the flaw in part (a) into a successful explanation of their answer. These candidates focused on the big leaps in reasoning and the extreme and implausible conclusion which are the key features of a slippery slope. More common were answers which referred to 'jumping to conclusions' or 'exaggeration', which were too vague to be credited as explanations of this flaw.
- Q6 (c) This question was well answered with most candidates able to explain the impact of bias on the argument. This was most commonly achieved by explaining that as an animal rights activist Stephen was more concerned about potential cruelty to existing animals than in the de-extinction of long dead creatures. A minority of candidates gave less clear answers which attracted only one mark, such as 'he is an animal rights activist and he only looks at one side'.

- Q7 This was another credibility question which was well answered, with a good majority of candidates correctly explaining the vested interest of a zoo owner in de-extinction, as having such a species in his zoo would be likely to increase visitors and thus his own income. A small minority of candidates confused vested interest with bias here; it was important that candidates recognised the self-interest involved in order to gain credit.
- Q8 As the third in a run of questions assessing candidates' skills in applying credibility criteria, it was very noticeable how this question proved to be much more challenging than the previous two. Successful answers focused on the expertise of the source as a stem cell scientist and on his reputation as the man who had cloned Dolly the sheep. A sizeable minority of candidates did not gain any credit here as they focused on what the source *could have done* to improve his credibility, rather than on factors which strengthened his credibility. This would seem to have come about as a result of the wording of the question, so Centres would be advised to use this as a practice example for future exam preparation to avoid such misunderstandings in future, as the previous two questions on this paper showed a good majority of candidates as being comfortable with this skill. Another factor preventing candidates from gaining full marks on this question was a tendency to repeat the same point in both answers. It was possible to gain credit for two answers using the same criterion (usually expertise), but this could only be credited where candidates used different factors about the source in the two answers. For instance, full marks were awarded where one answer used his expertise as a stem cell scientist and the other referred to his expertise and experience as the man who cloned Dolly the sheep.
- Q9 A significant majority of candidates successfully identified this as a rant, recognising the lack of reasoning and probably helped by the copious use of exclamation marks.
- Q10 (a) Assumptions questions often prove to be challenging in this unit and this proved to be the case with this question. Some candidates focused successfully on the gaps in the reasoning which represented the assumptions within the argument. Common answers which gained credit identified the assumed link between brain size and intelligence and also between brain size and rights. A significant number of candidates fell back on repeating elements of the argument, which can never be accurate answers to assumption questions.
- Q10 (b) Most candidates were able to identify at least one plausible consequence of the de-extinction of Neanderthals. Most successful responses focused on negative consequences such as damage to other species or conflict with humans, but there were also some imaginative ideas about positive consequences. More tangential answers which were often posed as questions were less successful, such as 'what would they do for jobs?'
- Q11 Most candidates were able to identify the sentence as an explanation. A significant minority saw this as an argument, probably influenced by the presence of the word 'because'. This can be a common argument indicator word, suggesting the presence of a reason which supports a conclusion. In this case, however, the sentence cannot be an argument as there is no element of persuasion present.
- Q12 Many candidates produced answers which demonstrated an understanding of the weakness in the reasoning by identifying that it lay in the link being made between the reintroduction of mammoths and global warming. There were fewer responses, however, which successfully explained this weakness to gain both marks. There were some very well explained answers which explored the idea that correlation doesn't have to mean causation and others which made more specific reference to human activity causing global warming. In a similar way to question 3, less

successful answers tended to challenge the claim being made rather than explaining the weakness.

- Q13 This question was well answered, with very few candidates failing to identify at least one valid criterion. Common answers mentioned cost, ethics or available resources in one form or another. A small minority of candidates read the term criterion as meaning they needed to provide credibility criteria and these answers could not be credited.
- Q14 This question discriminated well and it was pleasing to see candidates who were familiar enough with the pre-release material to develop a strong argument. There were very few responses which fell below Level 2, although there was also a shortage of really good Level 3 answers as well. The most successful answers were those which developed reasons beyond the evidence presented in the document to support their conclusion. Strong Level 3 answers were seen on both sides of the argument and it was equally possible to produce high scoring responses either for or against de-extinction. Other candidates selected relevant evidence and arguments from the documents and structured these to support their conclusion. This was a feature of many Level 2 responses. A small minority of responses presented balanced arguments, with some reasoning in favour and some against. This was not what was asked for and Centres should make it clear to candidates that their reasoning skills and ability to attract AO3 marks are best achieved by presenting a clear response which supports a decisive conclusion.
- Q15 (a) This was a well answered question which demonstrated candidates' ability to present developed reasons effectively. It was pleasing to see that candidates understood the need to go beyond simple reasons such as 'Scientists would be able to study them' and to add the 'so what?' element to this, such as '.....which would teach us more about how primitive man lived and evolved.' The majority of responses successfully produced at least one developed reason and focused successfully on supporting the key point about the use of an uninhabited island. Less successful answers often produced more general reasons in support of the de-extinction of Neanderthals or, in some cases, gave reasons which opposed the course of action suggested. The latter could not be credited.
- Q15 (b) This question was well answered by many and, like question 14, saw the majority of responses banded in Level 2. A number of strong Level 3 answers successfully demonstrated developed reasoning which specifically focused on the negative aspects of the use of a deserted island. Such a sharp focus on the conclusion is always likely to reap the best rewards and this was certainly the case here. Level 2 answers tended to produce more general reasons and lack development, although reasoning skills were clearly evident. Few answers fell below Level 2 and these were usually very short, although there was little evidence of candidates running out of time at the end of the paper.

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