Level 2 Award

Thinking and Reasoning Skills

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

OCR Report to Centres

June 2012

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OCR REPORT TO CENTRES

Overview

This was another successful sitting for the Award in Thinking and Reasoning skills and it was excellent to see a further increase in the size of entry to confirm the increasing popularity of this qualification.

The quality of performance remains strong on both papers and candidates across the board were able to access the questions effectively with fewer no responses than in previous sessions. Both papers discriminated well and candidates were able to gain marks which matched their abilities, with stronger candidates able to display some well-developed thinking and reasoning skills on the more challenging questions. The rubric for both papers is straightforward and candidates showed no signs of misunderstanding and there was very little evidence of candidates experiencing time difficulties.

Specialist terminology was effectively used by many candidates although it was clear that weaker candidates had less familiarity and confidence with some terms such as analogy, necessary and sufficient conditions and straw man. In general, however, candidates appeared to have been well prepared for the examinations and were able to display confidence in applying the skills being tested.

It remains the case that candidates find it more difficult to access the higher mark ranges on questions requiring AO3 skills in section B of both papers. This has been commented upon in previous examiners' reports and centres are encouraged to look at the advice given. In this season, there was a tendency for candidates across both papers to provide a number of reasons in support of an argument, rather than focusing on one or two and developing these. For AO3 we are testing candidates' reasoning skills and their ability to develop an argument in support of a precise conclusion. At the higher levels this will involve candidates making use of evidence or examples to support their reasons, or developing the reasoning to link explicitly with the conclusion.

Candidates again performed slightly better on B901 than on B902. This would seem largely because of the greater challenge involved in the structures of arguments and argument components found in the pre-release materials. We would again emphasise that this is to be expected in documents which can be studied both in class and at home in advance of the examination.

B901 Thinking and Reasoning Skills

General Comments

The question paper was accessible and of an appropriate level of challenge for Level 2 candidates who engaged enthusiastically with the subject matter. Most candidates appeared to have been prepared well for the examination, as they were able to recognise technical terminology in the questions and to use appropriate vocabulary in their responses. Most candidates were able to complete the paper in the allocated time.

In Section A, Question 2 proved to be particularly challenging and centres may consider providing future candidates with a wider variety of sample arguments to help them develop the skill of distinguishing between conclusions and intermediate conclusions.

In Section B, candidates could improve their marks by paying greater attention to the structure and development of their reasoning.

Comments on Individual Questions

Section A

Question 1:

This question asked candidates to distinguish between argument, explanation, rant and a list of information. The distinction between argument and explanation was, as usual, the most challenging to make. In this case, Celebrity X is explaining rather than arguing because he tells us *why something is* the case, whereas Celebrity Y argues that something *ought to be* the case.

Question 2 (a):

Most candidates managed to circle at least one indicator word. "And" was the most popular wrong answer, because it was not an indicator word in the context of this particular argument.

Question 2 (b):

The intermediate conclusion was the second half of the first sentence, with many candidates failing to achieve a mark because they bracketed the whole of the sentence. Candidates should take care not to include additional information in the brackets.

Question 2 (c):

This question was a particularly good discriminator, with only the most successful candidates being awarded a mark. Many candidates incorrectly underlined the final sentence or the whole of the first sentence.

Question 3 (a):

This question was answered very well, indicating that candidates had a good familiarity with Skill 2 of the specification. Most candidates gave the Latin name for the flaw, with misspellings not being penalised.

Question 3 (b):

Successful answers were those which recognised that two wrongs do not make a right. A minority of candidates seemed to believe that two wrongs do make a right and that the actions of the student were justified by the hypocrisy of the teacher.

Question 4:

This question was answered very well, with a large number of candidates achieving maximum marks for identifying four problems with the survey. The major problems with the survey were the lack of representativeness of the sample (only students from London, only girls, only teenagers) and the fact that the data did not provide support for the alleged "increase". Candidates were allowed to say that there was a problem with "sample size" because only three schools were surveyed, although, strictly speaking, this was another issue of representativeness. It was not correct to say that only a small number of people were surveyed because three secondary schools could easily provide a sufficiently large sample.

Question 5:

Most candidates correctly circled "sufficient". Those who circled "necessary" could go on to achieve marks in part (b) for the quality of their explanation. Although most candidates achieved some marks on this question, the terminology of necessary and sufficient conditions is challenging to most Level 2 candidates.

In their explanations, most candidates recognised that you do not need £10m to be "rich" because you could have a different amount and still be considered rich. This means that having £10m is not a necessary condition of being rich.

Candidates could achieve the second mark for part (b) by saying that £10m is "enough" or "sufficient" to count as being rich.

Question 6:

In order to maximise their marks on an analogy question, it is important to ensure that a relevant difference is fully explained. An answer like "murder is a crime" is only going to achieve one mark, whereas the full explanation, "murder is a crime but not giving money to charity is not a crime" would be credited with both marks.

Some explanations that did refer to both sides of the analogy did not achieve two marks, because they did not compare the same idea. For example, if a candidate starts by saying "murder is deliberate killing", the second part of the answer would have to explain why this is not the case with not giving to charity, rather than expressing a different feature of not giving to charity.

Successful candidates were those who recognised that the comparison was between murder and *not* giving to charity, rather than murder and charity or between murder and whatever might have been the cause of the famine.

Question 7:

In part (a) most candidates recognised that the USA won most medals during the whole period.

In part (b), the most popular incorrect answer was China, as less successful candidates failed to recognise that the question required an assessment of the success of a country relative to its population.

In part (c), most candidates correctly identified Germany, although China was again a popular incorrect answer.

In part (d) successful candidates recognised the importance of identifying something that the two countries had in common *during the whole period*.

In part (e) successful candidates recognised the pattern of Japan's medal total decreasing by 5 in successive 20 year periods.

Question 8:

The majority of candidates achieved maximum marks on this question, with Barry's favourite subject being the one that candidates found most difficult to identify.

Section B

Question 9:

Successful candidates recognised that the farmer was confusing correlation and causation. Just because two things have happened at the same time, it does not follow that one has caused the other. On this occasion, candidates were allowed to use much less precise language, such as "he assumes there is a link", although candidates are urged to try to express their reasoning more carefully.

For the second mark, candidates should have offered an alternative explanation for the correlation, for example it could be a coincidence or reverse causation or a third factor at work.

Question 10:

Many candidates were able to provide an alternative explanation and supported this with a reference to the documents. The reference to the documents did not have to be a full quotation. The most popular reference was to Document A, which stated that deer, foxes, rats and cats could spread the disease. Many candidates also gained credit by suggesting that the spread could be from cattle to cattle, referencing the concentration of cattle in this area and the infrequency of the testing. Less successful candidates referred to badgers spreading the disease, which was not credited as an *alternative* explanation.

Question 11:

The farmer's reasoning was supported because the Ireland study does seem to confirm that badgers spread the disease. Many candidates also recognised that the Irish study would be a good justification for wanting to kill *all* badgers to prevent any from moving to other areas.

Question 12:

Successful candidates identified alternative courses of action, such as vaccinating the cattle and secure fencing.

Less successful responses tended to be those where the suggested course of action was vague or unrealistic. An example of a vague response would be one that suggested keeping the badgers and cows apart from each other, without explaining how that could be achieved. Examples of unrealistic solutions were relocating the entire cow or badger population to another area.

Question 13:

This question examined an aspect of Skill 8 of the specification, namely "Identifying relevant criteria for deciding between options". A pleasing number of candidates recognised this, suggesting criteria such as "cost", "environmental implications" and "public opinion". Less successful candidates were those who misinterpreted this as a question about credibility.

Question 14:

Successful candidates were those who were able to suggest problems with the process of badger vaccination, such as the problem of catching the badgers, rather than the problems with the thinking behind the proposal, such as that it might not be badgers spreading the disease.

Question 15:

As in previous sessions, examiners sought to reward candidates for the quality of their reasoning, looking for at least two developed reasons for candidates to access the top mark band. There were many excellent arguments that included developed reasons, clear structure and precisely stated conclusions.

Many candidates could have improved their marks by concentrating on developing two reasons with evidence, example or explanation rather than taking a "scattergun" approach of offering many undeveloped reasons.

Many candidates could also improve their marks by improving the structure of their arguments. A simple strategy of using the words "firstly..." and "secondly..." at the start of paragraphs to indicate their different lines of reasoning would be very helpful in organising their thinking and providing clarity.

Use of documents to support and develop reasoning is encouraged, although candidates who reproduce the documents excessively cannot expect to gain credit. Evidence should help to develop reasoning, rather than taking the place of reasoning.

Rhetorical questions should be avoided. Candidates should be aiming to argue their points, rather than holding their ideas to be self-evident.

The question clearly asked candidates to write an argument to "challenge" a conclusion, but there were a surprising number of candidates who wrote arguments in the wrong direction, i.e. they argued that killing all badgers would be the best way of stopping the spread of Bovine TB. Such candidates could access marks no higher than the bottom of Level 2. As always, candidates would be well advised to read the questions carefully.

Question 16:

The overwhelming majority of candidates correctly interpreted the requirements of this question and a good number were able to achieve a mark in the middle mark band by identifying how the credibility of the scientist might be strong compared to the weaker credibility of the farmer and the animal rights campaigner. However, this proved to be a more challenging question than Question 15, with fewer candidates being able to access the top mark band.

A wide variety of points of assessment could have been made, but the majority of candidates stuck to familiar credibility criteria, with many writing "RAVEN" at the top of their answers. Many, however, failed to use these terms with accuracy and precision. As in previous sessions, reputation was often confused with expertise, expertise was confused with ability to see and bias was confused with vested interest. Many candidates incorrectly reasoned that the scientist must be unbiased because his view represents a compromise position.

Many candidates thought that scientists know almost everything and are never biased. More surprisingly, many candidates thought that anyone working for the government must have a good reputation, will lack bias and will inevitably pursue the general interest.

The question instructed candidates to write their answers "with close reference to the documents" and most candidates could have significantly improved their answers had they done so. Less successful candidates wrote about farmers in general, scientists in general and animal rights campaigners in general and unsurprisingly their answers contained many unjustified generalisations.

Most candidates identified the farmer as biased, because his business depends on the health of his cows. Very few recognised that this does not necessarily give him a vested interest to misrepresent the truth, indeed it would give him a vested interest to identify and eradicate the true cause of the disease, whatever that may be. More successful candidates recognised that the farmer was biased because he does not consider other possibilities, jumping to conclusions too quickly and with insufficient evidence.

Most candidates made the simple point that the animal rights campaigner is biased because he wants to save the lives of badgers. More successful candidates recognised that he has a bias against the dairy industry in general, which represents a different agenda, as evidenced by his reference to eating meat.

In terms of expertise, less successful responses simply alleged that the scientist must be more of an expert than the farmer or the campaigner because scientists are experts and because this scientist was employed by the government. More successful candidates examined the documents and referred to the farmer's misuse of evidence or to the campaigner's inconsistency in citing evidence and then claiming that no such evidence exists and blaming the farmers without any justification.

B902 Thinking and Reasoning Skills Case Study

General Comments

There was a further significant increase in the size of entry for the June 2012 sitting of B902 and the standard of entry has been maintained. There was a good range of centres entering and the paper proved accessible to all, differentiating effectively between candidates of varying ability. There was a normal distribution of marks achieved.

Most candidates had clearly been well prepared for the examination and showed some good awareness of the topic and the pre-release material. It remains the case that familiarity with the pre-release is of great importance to success in this paper. In section B in particular, with its heavy loading towards skill 3 and AO3, candidates who can call on good awareness and understanding of the pre-release material and the context of the questions will be at an advantage.

It is obvious, however, that an ability to address the specific demands of the questions is vital if candidates are to access the higher mark ranges. On this paper candidates found it difficult to produce developed arguments in response to questions 12 and 13. Given the number of marks available for these questions, centres are advised to practise this skill, making use of the pre-release materials. Whilst it is not possible to predict the exact questions which will be set in the examination, candidates should be able to work on producing a well-structured argument which makes full use of the exact wording in the question as well as evidence from the documents.

There were some key skills in the specification which less strong candidates struggled with on this paper. It was clear from question 5 (a) that identification of common flaws is something which all bar the strongest candidates find difficult and, in common with some previous papers, the rest of question 5 pointed to a need for more work on analogies. It was more surprising to see the difficulty which candidates had with skill 5 in question 10. Analysing information from polls, especially when this should have been studied as part of the recommended six hours set aside for the pre-release in the work schemes, is a skill which candidates at level 2 should be able to handle.

There was very little evidence of candidates running out of time on this paper and there were no rubric infringements.

Comments on Individual Questions

Section A

Question 1:

This was a generally well-answered question, with nearly all candidates able to identify at least one of the correct claims. Many, however, incorrectly selected the second claim as a correct one.

Question 2:

Another well-answered question. In part (a) the first two pieces of information were more easily identified as they could be matched with some information given in the table. Candidates found it less easy to identify the final two pieces of information as these were matched items independent of the rest of the data given. Part (b) proved to be the easiest question on the paper with very few candidates making an error here.

Question 3:

It was pleasing to see that most candidates were able to distinguish between an explanation and an argument by getting both parts of this question right. There was a significant minority of candidates, however, who got the two elements the wrong way round and a surprising number saw the argument in part (b) as a rant, or even a list of information.

Question 4:

Candidates found this question challenging and very few gained full marks across both parts. Part (a) proved particularly problematic, with most candidates unable to spot the intermediate conclusion and incorrectly ringing the middle box. Within the specification, skill 1 clearly includes the requirement to use argument maps which include intermediate conclusions and centres should continue to practise this. In part (b) some candidates lost marks by explaining a strength instead of a weakness, whilst others chose one criterion but explained another. The most commonly chosen criterion was vested interest and many candidates explained this well. It remains important though for candidates to explain what somebody has to gain personally where vested interest is used.

Question 5:

Across its four parts this question discriminated well between candidates of differing abilities. The strongest were able to demonstrate well-developed skills in identifying a flaw and analysing an analogy, but many others were unable to identify either of these elements. Only a third of candidates correctly identified the straw man flaw, with all the other flaws featuring strongly in incorrect answers, suggesting that many of the five flaws in the specification are not fully understood. There was a similar spilt between correct and incorrect answers to part (b) and a surprisingly high number of no responses. Analogy questions have featured in many past papers and will continue to do so and centres are encouraged to spend some time preparing candidates for this aspect of skill 8. A good number of candidates were able to give excellent answers to parts (c) and (d), but many were unable to engage accurately with the four parts of the analogy. A common mistake was to get the four aspects confused and talk about the similarities and differences in football versus medicine, rather than the more complex point of the analogy - the unfairness of paying those with higher level skills within the two professions equal amounts to those less skilled.

Question 6:

It was pleasing to see that the obvious slippery slope flaw was generally well recognised by candidates here. Nearly half the candidates, however, identified the final sentence of the slippery slope as the conclusion. This would always be very unlikely. A surprisingly large number of candidates also left out part (a) altogether, which was strange for a question which just required some marking-up of an argument.

Question 7:

This was generally a well-answered question, although many candidates lost marks in part (a) by omitting parts of the two reasons from the brackets, seemingly wanting to make the argument structure more complicated than it was. Nearly all were able to identify the conclusion indicator word 'so' and credit was also given for those who circled 'should' in part (b). A small, but significant number erroneously believed 'also' to be a conclusion indicator word. The argument map was usually well done, with nearly all candidates picking up from part (a) that there were two reasons which directly supported the conclusion. The most common mistake here was candidates thinking that the reasons were not independent and inserting a plus sign between R1 and R2 to indicate joint reasoning.

Question 8:

The vast majority of candidates were able to accurately identify the counter argument here. The most common wrong answer given was intermediate conclusion.

Question 9:

This was another question which generally brought good answers. The most problematic aspect of the question was part (a), with many candidates repeating something which was stated in the argument. This can never be a correct answer when an assumption is being asked for. Stronger candidates, however, showed good awareness of what an assumption is and produced well-phrased answers. In part (b) there were many good answers which gave developed reasons, either by explaining how footballers and refuse collectors differ or by explaining clearly why footballers deserve high wages. A number of candidates limited themselves to just one mark for each answer in part (b) by giving two or more unrelated reasons, rather than developing a single reason. There were also a number of answers, even from those who gave accurate answers to part (a), which themselves contained major assumptions: '*Footballers work very hard*', assuming refuse collectors don't; '*Footballers entertain people*', assuming that entertaining justifies high pay.

Question 10:

This proved to be a very effective discriminator and a full range of marks was seen across the whole question. The strongest candidates were able to give clear and coherent explanations in answers to parts (a) and (b) and to use their skills in analysing polls to identify good answers for parts (c) and (d). There were many weaker candidates, however, who struggled to word their answers effectively and many who did not seem to have a working knowledge of the issues raised by polls.

Question 11:

Again, this was a good discriminator. The best answers here started with a clear counter-claim and then stated a reason to support this which was further developed with evidence or an example. Many candidates, however, did not use an accurate counter-claim which meant that their answer could not generate full marks as it did not constitute a counter argument. Another common weakness was, in common with 9 (b), giving multiple undeveloped reasons to support the counter-claim. Less successful answers were also often written as polemical challenges, rather than counter arguments: '*How do you know that? You're just assuming that players are only interested in money.*'

Question 12:

This was another good discriminator. It was pleasing to see many candidates using good reasoning skills in developing their arguments here. The majority reached at least the top of level 2, often by providing well-argued alternatives to spending clubs' money on high wages. The best answers expanded on the irresponsibility of footballers when they get high wages and explored the financial problems high wages cause for the club. However, considering this was the focus of the pre-release material, surprisingly few answers took this route.

Question 13:

In common with question 12, the majority of candidates gained marks within level 2. The most common answers were driven by examples with many candidates struggling to get past those of footballers, brain surgeons and refuse collectors which featured in previous questions. Many found it difficult to get beyond 'it would be fair' as a reason. A few students misunderstood the question and argued for the conclusion that footballers' wages should be based upon contribution to society. The best answers were able to focus on the wider issues raised by the question and considered reasons related to positive impacts for the community and incentives for people to aspire to socially valuable jobs.