THINKING SKILLS

Paper 9694/11
Problem Solving

Key messages

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Tidy presentation of work will not only help the candidate to work accurately but will also help the Examiner to follow the thought process of the candidate with a view to being able to award partial credit.

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When an explanation is asked for in a question where numbers are involved, as is common on Paper 1, it is almost always the case that candidates should use these numbers in their explanation.

General comments

This was the second sitting of this new style of paper, which was previously multiple choice. In general, candidates engaged very well with it. It is acknowledged that preparation may have been more difficult. Many candidates attempted most of the questions and there were many answers of a pleasingly good standard. Most of the candidates were able to engage with at least some of the questions in a meaningful way.

Comments on specific questions

Question 1

Most candidates engaged with this question, realising that it was necessary to find combinations of 'plus 5' and 'minus 3' that gave the required total. The existence of possible blanks scoring 0 was not always used.

(a) The most common incorrect answer was 0, which could only be true if all questions were left blank, contrary to the statement in the second paragraph. Some candidates listed all possible combinations of correct and incorrect questions, with and without blanks, which often led to the correct answer, but only after a lot of unnecessary work and time. The key was to realise that three 5s gave the same total as five 3s, so 3 correct and 5 incorrect would balance each other out, together with two blank answers.

(b) Those who had used a listing method in **part (a)** were able to use this to their advantage in this part. Others opted to try one possibility and then adjust until they obtained the required total of 32.

Question 2

(a) Many candidates were successful in calculating the costs for Jack's books as $32 and the cost of Jill's books as $30, giving a total of $62. The most common error was in applying Jill's voucher as taking $2 off the cost of *Tumbling After* rather than the cost being $2 instead of $12.

(b) Again, there were many correct answers to this part. The key was to realise that the total cost would be minimised by using the $2 for the cheaper book when the two most expensive books

were bought together. A common error was to group the books in this way, but then, surprisingly, apply the vouchers the other way around. So, $28 and $25 with 20 percent off ($42.40) and $15 and $12 with $2 for the cheaper ($17), a total of $59.40. There were a multitude of other errors resulting from all possible combinations of books with vouchers applied either way around, all calculated correctly or otherwise.

Question 3

Candidates who used the given information precisely were more successful than those who added their own variations. It was not uncommon to see that 06:00 was a suitable time for Rob to take his medicine, because he could get up early. If this had been an option, it would have been stated in the question.

(a) A common misunderstanding in this part was to misinterpret 'During how much total time' as meaning 'How many times', usually leading candidates to offer a list of 5 plausible times. Such answers, if correct, were awarded partial credit. Of those candidates who gave a total time, a common error was to miss the 22:00 to 22:30 slot. Others included the whole of the sleeping time.

(b) This part was often answered correctly. The common error was to include 06:00 as one of the times.

(c) The key point in this part is that the longest available time slot in which Rob can take his medicine is 2 hours 30 minutes, so there is no slot in which two doses taken 3 hours apart can happen. Most of the answers seen were very vague with phrases such as *'No, there is not enough time'*. More detail was required to support the 'no'. A surprising number of candidates pursued their belief that Rob could change his mealtimes and/or sleeping time to accommodate the new regime. This may well be the practical option in real life, but it is stated quite clearly in the question 'without altering his daily meal schedule or sleeping times.'

Question 4

Only a minority of candidates scored full marks on either part of this question. Most answers tended to be very messy and it was often difficult to see the candidate's train of thought. It seemed that candidates found it difficult to marshal all the information given in the question. A very common error was to omit the information in the first sentence, that the hiring was for three nights, either entirely or in some part of the calculation.

(a) Two amounts need to be calculated in this part: the fixed costs for three nights hiring and 900 programmes, a total of $2460. Also, recognition that Melodia get 75 per cent of ticket sales, so $6 per ticket. The number of tickets that needs to be sold is therefore $2460 divided by $6, so 410. A common error was to divide $2460 by $8, giving an answer of 308. Other common errors were to calculate the fixed costs for only one night as $1060 or to divide by $8. Often, both of these errors were present.

(b) There are various approaches to solving this problem, involving calculating the income and the outgoings. Many candidates had some idea how to proceed, and obtained some partial credit, but the same errors as in **part (a)** again prevailed.

Question 5

Most candidates were able to begin a response to this question, by dividing $180 in the ratio 8:6:4 to find Sarah's share as $60. About half were able to do a similar calculation with the revised birthday ages and ratio, but others either abandoned their solution or were unable to translate the given information into an appropriate ratio.

Question 6

(a) Most candidates appeared to grasp what was required to solve this problem and attempted to draw up a list with the candidates in an order which satisfied all six conditions. About half were successful in naming the two pairs of candidates: Celia and Rachel, Celia and Jeremy. A significant minority of candidates correctly named just one of the pairs, usually Celia and Rachel. A few candidates gave a list of all possible pairs of the six candidates, ignoring all the conditions.

(b)   About one-quarter of candidates gave the correct smallest possible total mark for the candidates, but a common error was to list the candidates with the mark they obtained, without finding the total of these marks. With only one mark available, no credit could be given for this.

Question 7

The majority of candidates seemed to approach this question with confidence, engaging well with the scenario.

(a)   The most elegant solutions to this part involved finding the total viewing time of 270 minutes, adding on 100 minutes for the breaks, giving a finishing time of 15:40, 370 minutes (6 hours 10 minutes) after 09:30.

Many candidates attempted to schedule the six episodes, finding the starting and finishing time of each. Some candidates did not take account of the 1-hour break after the third episode and continued with 10-minute breaks throughout. Others, having observed the 1-hour break, added on an extra 10 minutes at the end. A minority of candidates found the total length of viewing time as 270 minutes and then added this to the start time, ignoring any breaks between episodes.

(b)   Many candidates found the total viewing time for all three series as 810 minutes and divided this by 5 to find the viewing time per Sunday as 162 minutes. This left 18 minutes of the available 3 hours for a break. Many candidates had the correct approach but opted to work in hours and minutes and often made errors, such as assuming 100 minutes in an hour.

(c)   Some excellent concise solutions to this part were seen. There are 18 episodes in total and, in the time that Caroline has available, four episodes can be viewed in one evening. This leaves two to be viewed on Friday, finishing 100 minutes after 19:00 at 20:40. Common errors were to add an extra 10 minutes at the end and/or in adding times, but often giving a finishing time on Friday. These errors were given partial credit. Sadly, a minority of candidates filled the available space with scheduling that was impossible to follow and often gave a finishing time on Tuesday, or even Monday. Common sense might suggest that these were unlikely to be correct.

(d)   Only a small minority of candidates obtained the correct answer to this part. Many unsuccessful attempts involved detailed scheduling of every episode but marred by inaccurate arithmetic. Partial credit was awarded for a scheduling attempt that was correct to at least the end of the Tuesday session. Scheduling is not a bad approach to the problem, but a methodical, neatly-presented attempt will not only help the Examiner, but more importantly the candidate.

Question 8

(a)   About half of the candidates obtained the correct answer of Albertong, Hackeridge and Yonderford. These journeys maximised the amount of barley collected as 19 tonnes with the total journey time at its maximum of 8 hours. The majority of the remaining candidates gave the suboptimal answer which corresponded to 18 tonnes of barley: Albertong, Tomston, Yonderford and Zenderbrow.

(b)   Many of the candidates who had obtained the correct answer to **part (a)** were able to add Zenderbrow to their list and maximise the amount of barley as 23 tonnes. The most common incorrect answer seen was 21 tonnes.

Question 9

(a)   Many candidates engaged successfully with this part. They realised that the greatest number of visitors at 12:30 must include all the 10:00, 11:00 and 12:00 arrivals, appreciating that the 09:00 arrivals would have left by 12:00.

(b)   Many candidates appreciated the fact that the highest numbers in the table must contribute to the greatest possible number of visitors at any one time and picked out the 54 and 48. There were then two options for the third figure to include: 40 or 35. The former was clearly a better option, giving the correct answer of 142, all of whom could have been there between 14:00 and 15:00. Many candidates opted for the 35 and gave a total of 137. Another common answer was 186. This is obtained by including all the arrivals in the 11:00, 12:00, 13:00 and 14:00 slots, who could not all have been there at the same time.

(c)   Only a small minority of candidates gave the correct answer of 6 hours. The most commonly seen answer was 2 hours. This alone could not receive any credit, but if it was accompanied by a named two-hour slot, usually 09:00 to 11:00 or 16:00 to 18:00, then partial credit was awarded.

Question 10

Most candidates found this question to be the hardest on the paper and it was omitted by the majority.

(a) (i)   Very few candidates were able to make progress with this problem. The key was to realise that in four minutes the first cyclist cycles 1 km, so the second cyclist needs to catch up 1000 metres and does so at 100 metres per 2 minutes. This therefore takes 20 minutes from his start time of 12:04. Some candidates obtained the correct answer of 12:24; some others obtained the 20 minutes but added it on to 12:00.

(ii)   The first cyclist has cycled for 24 minutes at 15 km/h, so a distance of 6 km. Few candidates obtained this answer.

(b)   Only the small minority of candidates who had engaged with this problem in the earlier parts attempted this part, usually successfully.

Question 11

This question was of a different style and it seemed to be more appealing to candidates who had struggled in earlier questions.

(a)   Many candidates were able to give a correct sequence of ticks and crosses. Any correct sequence satisfying the conditions was acceptable. In some cases it was difficult to distinguish between the two symbols used to represent ticks and crosses and candidates are advised to make clear what their notation is. For example, some candidates used a letter 't' to represent a cross, whilst for others, 't' represented a tick. Examiners were adaptable and gave credit where possible.

(b)   This part was less well done. Those candidates who gave a sequence showing the order of 'events' to support their explanation were usually more successful than those who used only words. The sequence in this part is unique.

Question 12

There was some evidence to suggest that some candidates were running out of time at this stage, but, on the other hand, some candidates who had omitted earlier questions did attempt this one.

There were two common approaches: trial and improvement (search method) and algebra.

Those who attempted a search method were awarded the first mark for using two amounts that were $16 apart. A second mark was available for those who improved their amounts to values closer to the ones that solved the problem. This was not awarded very often, as candidates seemed to follow their initial amounts with what appeared at times to be random guesses of other pairs of numbers that were 16 apart. Often it was very difficult to follow a candidate's train of thought when presented with an answer space covered in numbers with no apparent logical order.

Those who attempted an algebraic approach usually wrote down two simple, correct simultaneous equations. However, rather than solve the equations, candidates often switched methods at this point and used their equations to help them with a search method. This was often effective.

THINKING SKILLS

| Paper 9694/12 |
| Problem Solving |

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Comments on specific questions

Question 1

(a)   This part was usually correctly answered. A small number of candidates missed out one of the three names, while others had an extra name, usually David.

(b)   Almost all candidates correctly identified Luke.

Question 2

The majority of candidates correctly worked out the cost of the ingredients at the other local shop and then worked out Kelly's intended total selling price. They then subtracted Kelly's prices for pasta and sauce from this to give the correct answer. A small minority reduced the $5.50 price for Beef mince by 10 per cent and gave the wrong answer of $4.95.

Question 3

Only a minority of candidates were able to find the one PIN code that satisfied all three conditions. Partial credit was allowed for candidates who found a code that satisfied conditions 1 and 2, e.g. 1224, and for candidates who found a code that satisfied conditions 1 and 3, e.g. 1938.

Question 4

(a) (i) A significant minority of candidates gave the correct answer that the bus was travelling towards West Head but did not justify the answer. Most of the successful candidates justified the answer by identifying that when the bus first passed Dionne it had left East Point at 10:15. Some candidates stated that the bus was heading towards East Point.

(ii) About half the candidates were successful on this part, though some candidates were 1 out, while others appeared to have guessed. Many unsuccessful candidates were able to state that Dionne took 1.8 hours (or equivalent) for her walk, or that she arrived at East Point at 12:07.

(b) This was usually done correctly.

Question 5

(a) This part was usually answered correctly.

(b) Most candidates correctly worked out that Phil's gift was exactly $150, although the mark scheme allowed a range of $147 – $153 when reading from the chart. A very small minority gave the amount of Brian's gift instead.

Question 6

(a) The correct answer, Susan, was the most common answer, though a considerable number of candidates gave either Freda or Laura. Many other girls' names from the table were seen from time to time.

(b) Quite a number of candidates misunderstood this question, often suggesting one or more names from the 1994 list of boys' names that were missing from the 1995 list. Most of those who realised that there were 64 more names to be accounted for then realised that there had to be a minimum of 8 other names, though some rounded down to 7 or up to 9, and others were not sure what to do after arriving at 64.

Question 7

(a) This part was done correctly by many candidates, who had no difficulty correctly identifying the three amounts, $8000, $7200 and $200, that contributed towards the final answer.

(b) Most candidates correctly identified that Wingfield would receive $1000 for finishing fourth and $3600 for their 6 wins. A majority of the candidates who had identified these two amounts then had difficulty in working out the maximum number of games in which Wingfield could have scored 2 or more goals in a game they did not win. Many candidates missed the information given earlier that Wingfield scored 4 goals in the match against Tilney; many candidates did not appreciate that Wingfield must have scored at least 6 goals in the 6 games they won. As a result, $5800, $6000 and even $6200 were more common answers than the correct answer of $5600.

Question 8

(a) Only a minority of candidates realised that the first wall would need exactly the same amount of red paint as white paint. Most of those realising this then pointed out that 60 m^2 of wall would need 5 tins of paint – so Adrian would need to buy 3 tins of red paint. A considerable number of candidates attempted to work out the amount of red paint needed for each stripe (or the notional area of each stripe to be painted red); most made errors or did not complete the calculation, but there were a significant number of carefully worked out correct answers using this method. Answers of $2\frac{1}{2}$ tins were seen, but not often.

(b) This proved more challenging than **part (a)**, with only a small minority of candidates arriving at the correct notional areas of the first two stripes needing red paint and white paint. There were only a small number of correct answers.

(c) Only a few correct answers were seen to this part. To do this correctly, candidates had first to work out the total notional area of the walls to be painted white, and then realise that the first two walls

only needed 5 tins of white paint between them, giving the final answer that a total of 15 tins of white paint would be needed, together with 6 tins of red paint. Some candidates with correct answers for **parts (a)** and **(b)** went on to state wrongly that 16 tins of white paint would be needed.

Question 9

A significant minority of candidates did not seem to understand the significance of the information that Graham did not want to use tokens worth more than the cost of an activity because he would get no change.

(a)   Many candidates worked out that Graham would need 22 credits and then forgot the requirement that he would use the tokens for the activities, and gave answers like 3 Gold, 1 Silver and 1 Bronze. These 5 tokens are worth $22 in total, but the point about no change being given has not been taken into account.

(b)   There were very few correct answers with an adequate justification to either **part (i)** or **part (ii)**. For **part (i)** a significant number of candidates stated that the value of the tokens in a $20 pack is $25, so this is good value and Graham should buy this pack. Others stated that Graham should buy this pack because there were only a small number of different tokens. Very few candidates justified their answer by showing how the contents of the $20 pack could be used to pay each of the 6 activities. Candidates who did this successfully pointed out that, even when the tokens in the $20 are used as efficiently as possible, Graham would need to buy 3 more Bronze tokens (or equivalent), so spending a total of $23, which is more than he would spend buying individual tokens.

      For **part (ii)** only a very small minority of candidates showed how Graham could use the contents of one $10 pack and would then need to buy a further $10 worth of tokens, or showed that he could use the contents of two $10 packs to cover all the activities – though in this case $2 worth of tokens would be 'wasted'. Either scenario would allow Graham to take part in all 6 activities for a total expenditure of $20.

Question 10

(a)   The correct answer of 8 bowls was seen more often than any other single answer, though only about half of the candidates were correct.

(b)   Less than half the candidates were correct on this part.

Question 11

This question was rarely done completely correctly. However, quite a number of candidates correctly gave $80 or 8000 cents as the original cost of the booklets and $65 or 6500 cents as the revised cost. However, quite a lot of these candidates did not realise that a cost of $5 would be incurred when the order was reduced to ensure delivery on the same day; quite a number ignored this, others used $10 for the delivery cost, and others confused units and gave the final answer as 1495 cents.

Question 12

Most candidates found this question extremely challenging, with many candidates not attempting it, or making no meaningful progress. To make progress candidates needed to realise that the clock's minute hand would take 24 minutes to get from 12 to 6, and 36 minutes to get from 6 to 12. Some of the candidates who did attempt this question thought the times involved were 20 minutes and 40 minutes, having not understood '50 per cent faster'. Very few of the candidates who did get the values of 24 and 36 went on to give the correct answer of 09:35.

Question 13

This question proved too difficult for almost all candidates, with blank answer spaces being common, along with totally wrong answers. Something like 5 percent of candidates were able to give the right answer to **part (a)(i)**, and rather fewer than that for the other parts.

THINKING SKILLS

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THINKING SKILLS

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Paper 9694/21
Critical Thinking
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Key messages

Although this exam tests skills more than knowledge, the specification does identify some subject knowledge which candidates are expected to know, and it is impossible to perform well in the exam without knowing such items as reliability criteria, the meanings of the expressions 'argument element' and 'unstated assumption', and the names of certain flaws and weaknesses in reasoning.

General comments

As in previous sessions (following the previous version of the specification), there was a wide range of performance in this examination.

Nearly all candidates had enough time to attempt all the questions. Most of those who omitted one or two questions probably did so because they did not know how to attempt them. A very small number of candidates omitted most or all of the questions.

Candidates tended to write as much as they could for each question, irrespective of the number of marks allocated, instead of realising that some questions expect short answers while others require development or recognition of ambiguity. The number of marks allocated to each question is a good guide to the amount of development expected.

Candidates and their teachers need to know that there are two significant differences between **Questions 2** and **5**:

- Answers to **Question 2** are expected to make use of the sources provided in **Section A**, whereas answers to **Question 5** are expected **not** to refer to the passage provided in **Section B**.
- The question in **Question 2** is 'To what extent do you agree with this claim?', whereas in **Question 5** candidates are instructed to 'support or challenge' a claim. So moderate positions (declining to support or challenge the claim) are acceptable in **Question 2** but not **Question 5**.

Comments on specific questions

Section A

Topics for **Section A** may be drawn from any academic discipline. On this occasion, the subject areas were human physiology, psychology and educational policy.

Question 1

A few candidates discussed the wrong source in one or other of these questions, *e.g.* Source E instead of D in **Question 1(c)** or **1(d)**.

(a) Quite a lot of candidates achieved 1 mark, by identifying the point either of similarity or of difference between the two sources, but not many mentioned both to score 2 marks out of 2. Some answers were awarded 0 marks because they summarised both sources accurately but did not relate them together. A number of responses claimed that Source B supports Source A because it presents data on a graph, but apparently did not realise that this evidence supported a different claim from the one being made in Source A; answers of this type received 0 marks.

(b)   A significant minority of candidates overlooked or misunderstood the crucial adjective 'alternative' and suggested explanations for how the change in working hours might have caused the improvements in attendance and achievement; such answers were, of course, not credited, because the question asked for 'alternative' explanations. Many possible answers were available, and many candidates achieved full marks. Some answers received only 1 mark out of 2, because they suggested no reason why circumstances or behaviour might have changed from the previous year. A few candidates overlooked the references to 'proportion' and 'percentage' in Source C, and mistakenly attributed the improved statistics to an increase in the number of students in the school.

(c)   Most candidates judged correctly that Source D was not an argument. However, as on previous occasions, some candidates apparently did not know the specialised meaning of the word 'argument' in Critical Thinking (and on the specification) and said it was not an argument because it did not include an opposing view. Correct generic answers were awarded 1 mark. Many candidates received 1 mark because they gave a correct judgement (that Source D is not an argument) and an accurate description of its contents (a factual report of an educational experiment) but did not mention the lack of a persuasive conclusion, which is the main reason why Source D is not an argument. Some candidates judged wrongly for various reasons that the source was an argument.

(d)   Many candidates gave developed answers to this question, even though only 1 mark was available for each of three points. The most popular answers were the lack of evidence and the limitation of the experiment to one age-group. Some candidates offered counter-arguments rather than identifying problematic features of the source, while others quoted from the source without commenting on the significance of the quotations: neither of these approaches was credited.

(e)   Although many candidates were awarded 0 marks for this question, a significant minority achieved 3 out of 3 by making a correct judgement, based on the author's ability to see school life and vested interest or bias in favour of his/her own convenience and against teenagers. Many candidates explained why they agreed or disagreed with Source E, without referring to the aspects of credibility identified in the specification, namely five reliability criteria, plausibility and consistency; however, some comments were close enough to one of the reliability criteria to be credited. Many candidates said that the source was unreliable because it was someone's opinion, but these comments were not credited, because the reliability of an opinion depends largely on the reliability of its author, which was the focus of this question. It was not enough to say 'She is credible because she is a teacher' without explaining why that gives her credibility. Candidates who identified the existence of potential vested interest (or bias) often failed to elaborate on how this might have influenced the teacher's stated views on the experiment, and hence gained no credit. Very few candidates if any considered the issue of consistency with Source B, in relation either to the teacher's allegations about the reason for students' sleepiness in the mornings or to his claim about the difficulty of waking up in time for work at an older age. A few candidates questioned the self-identification of 'A teacher', which was not significant enough to receive a mark.

Question 2

Unsurprisingly, most candidates seemed to find this topic interesting. A fair number gained 1 or 2 marks for personal thinking by drawing on their own experience. Some of them claimed that it was impossible to fit all their commitments, including homework and part-time employment, into a day without losing sleep and incurring stress.

Most candidates supported the claim. Many scored only 2 or 3 marks out of 8, because they made use of all or some of the sources in support of their conclusion, without evaluating the sources or drawing inferences from them, which are the higher skills and attract most of the marks. However, most of those candidates who did offer some evaluation of the sources earned marks by doing so successfully. Some candidates used ideas which could have been derived from the sources, without referring to them explicitly. A significant minority of candidates ignored the sources and simply discussed their own ideas on the subject, which is not the intention of this question, even though some marks are available for personal thinking.

Some candidates referred to sources by the wrong identity.

Section B

Question 3

Despite the instruction in nearly all parts of **Question 3** to quote the exact words of the passage, some candidates lost marks because they answered in paraphrases. Some candidates added explanations of their answers, some of which were particularly accurate and well-expressed, but these were not necessary and no marks were available for them.

On this occasion, both **parts (c)** and **(d)** tested the ability to identify argument elements; these exemplified the two possible formats for such questions. It is likely to be more usual for **Question 3** to include one of these question types or the other rather than both.

(a)   Most, but not all, candidates correctly identified the main conclusion of the argument. A range of wrong answers was offered, the most popular of which was the first sentence of the passage (which actually consists of two argument elements, not one). The few candidates who summarised the gist of the whole argument in their own words instead of identifying the quotation from the passage which constituted the main conclusion were awarded 0 marks, because they had not attempted the correct task.

(b)   Most candidates correctly identified 'Birthdays are fairer than other celebrations' as an intermediate conclusion, but several right and wrong answers were offered as the second attempt. Many candidates lost a mark by including an additional element in each of the other two correct answers.

(c)   A fair number of candidates correctly identified the counter-assertion, but many of them lost a mark by including the response in their answer. A fairly popular wrong answer was 'However, birthdays are not selfish events.'

(d)   Many candidates correctly identified this argument element, but the fact that many of them added extraneous comments suggests that they may not have been sure what the question was asking them to do. The list of argument elements (and possible answers to a question of this type) is available in ***section 6.1*** of the specification. No more than four (or even three) words were required to achieve the full 2 marks, but most candidates felt a need to explain their answers.

(e)   A significant minority of candidates correctly identified an unstated assumption. As on previous occasion, many answered by paraphrasing or quoting from the passage, even though something stated in the passage cannot by definition be 'unstated'.

Question 4

(a)   Most candidates seemed able to understand the words 'restricting the options' even if they did not know them as the name of a specific flaw in reasoning. Many answers appeared to be plausible guesses based on the meaning of those words, such as 'There are other occasions, apart from birthdays, on which friends and family can show appreciation for someone,' which has no relation to the flaw. The most popular answer was, 'The author claims that the only reason someone might not want to celebrate their birthday is because of lack of self-esteem', which is close but does not accurately capture the essence of the flaw. Very few candidates precisely identified and evaluated the flaw, although a fair number were awarded 1 mark for pointing out in one of a variety of acceptable ways that there were more options available than the author had alleged.

(b)   Many candidates scored 1 mark out of 2 by correctly identifying the point of resemblance between celebrating a birthday and being President for a day without identifying any aspect of being President which does not apply to people having a birthday. A few answers focused on the power a President has, and his alleged ability to do what he wants, neither of which really applies to people celebrating their birthday.

(c)   In this case, too, it was possible for candidates to make a plausible attempt based on the superficial meaning of the words 'personal attack', even if they did not recognise them as the name of a flaw in reasoning (perhaps better known by the Latin expression *argumentum ad hominem*). In order to achieve two marks, candidates needed to explain the nature of a *personal attack (ad hominem)* and to show how the example in the passage was different. A few candidates achieved this precisely and concisely, while more gained 1 mark by stating that the description of a group of people as selfish was supported by reasoning. A popular wrong answer was that the expression

was not a *personal attack* because it referred to a group or category of people rather than an individual, but in fact, *personal attacks* quite often refer to an author's opponents as a group.

(d)   Many candidates focused on the occurrence of the word 'selfish' in paragraphs 1 and 4, but these two statements are consistent with one another. Other candidates identified an inconsistency between having low self-esteem in paragraph 1 and being selfish in paragraph 4; these statements are different, but not inconsistent. A few candidates interpreted or even quoted 'paragraphs 1 and 4' as 'paragraphs 1 through 4' and focused on the wrong part of the passage or gave generic criticisms of the whole argument, such as the familiar 'lack of evidence'.

Question 5

A wide variety of standards was achieved. The best answers presented two or more distinct strands of reasoning, set out in separate paragraphs and each supporting an intermediate conclusion, but only a few answers reached that standard. Not very many candidates made appropriate use of intermediate conclusions and those who did tended not to identify them by the use of argument indicator words, such as 'because' or 'therefore', which meant that interpretations could legitimately differ as to whether they did or did not constitute intermediate conclusions. Many answers consisted of an apparently unstructured stream of consciousness, which was difficult for Examiners to analyse.

Most answers started with self-esteem, a lack of which could lead to mental problems (one strand) and the possession/acquisition of which could lead to motivation and achievement (strand 2) and, occasionally, to passing on positivity to others (strand 3). Some candidates argued that to tell all young people that they are special robs the word of its meaning. Many answers were repetitive, and some material which appeared to constitute a separate strand of reasoning was in fact little more than a restatement of what had already been said. Candidates arguing in support of the claim often found it hard to separate out their reasons into discrete strands, but this appears to have been less of a problem for those who challenged the claim.

Some candidates gave reasons why young people **are** special, rather than why they **need to know** that they are, which is different from what they were asked to do. A more significant misunderstanding was to relate the claim to birthdays; any part of such discussion which was relevant to the claim they were asked to discuss was credited, unless it repeated ideas from the passage. However, a few answers received 0 marks because they were devoted entirely to the topic of birthdays and ignored the claim they were supposed to be supporting or challenging. Some candidates presented a balanced discussion of the topic, or argued in favour of a more moderate conclusion, instead of supporting or challenging the stated claim, which meant that part of their discussion could not be credited. Others explored the implications of the claim instead of arguing for or against it, and were awarded 0 or 1 mark.

THINKING SKILLS

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Paper 9694/22
Critical Thinking
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Key messages

A number of questions in this new specification and exam specifically target technical aspects of critical thinking, e.g. those that ask candidates to identify a specific argument element. Thorough understanding and preparation are vital if these questions are to be tackled successfully.

General comments

Due to the global circumstances, only 99 candidates sat this paper. Only a minority of the candidates were well-prepared for the examination, therefore the comments that follow are based on a small number of scripts and the comments' significance may be diminished because of this.

Comments on specific questions

Question 1

(a)   The majority of candidates did not take into consideration the 'if true' element of the question and/or assessed the impact of the research findings on the statement rather than the impact of the statement on the research findings. This led them to the reverse of the conclusion that was credited in the mark scheme.

(b)   Many candidates answered that the research assumed small households would not wait for the dishwasher to be fully loaded but the passage clearly states that this is the case. The assumptions being made were therefore more subtle than this.

(c)   Very few candidates scored 3 marks on this question. A more substantial minority made the point that people might not be deterred if the environmental advantages over the lifetime of the dishwasher outweighed those arising out of the manufacture of the dishwasher.

(d)   This question was done quite well with many candidates scoring 2 marks by pointing out the *post hoc* problem and giving an example of another factor that might explain the rise.

(e)   A number of candidates pointed out the vested interest and some of these counteracted this point by pointing out that the article did offer a number of caveats making a case for 'reversed vested interest'. A significant number suggested that the information was only useful to restaurant owners but, unfortunately, this did not mean it lacked usefulness as such and was therefore not credited in the mark scheme. The information is clearly targeted on restaurant owners so saying it was not useful on the grounds that it was not useful to non-restaurant owners was a bit like criticising an information manual on an electric car on the grounds it was not useful to owners of non-electric cars.

Question 2

Candidates answered this question more successfully than **Question 1**, with a reasonably even split between agreeing and disagreeing with the statement. A number of candidates also went beyond mere use of the sources and made inferences from the source information supplemented with their own thinking. Evaluation of the sources was less common.

Question 3

(a) Only a minority of candidates correctly identified the main conclusion.

(b) Most candidates identified at least one intermediate conclusion and many candidates who wrongly identified the main conclusion managed to get two.

(c) Very few candidates identified the assumption. Many answered with a version of what is stated in the second sentence. They needed to move on to the point that it is assumed that shared biological nature is a *sufficient* reason for treating them as equivalent.

(d) No candidate answered this question correctly. A reason is an argument element, but candidates did not seem to be considering this as a possible correct answer. The word 'but' encouraged some to suggest that it was a counter assertion; however, this was not the correct answer.

Question 4

(a) Very few candidates identified the question-begging nature of the reasoning (this could be expressed in a number of ways) and made various comments about the contents of paragraph 1 rather than identifying a flaw or weakness.

(b) A minority of candidates showed an understanding of conflation and succeeded in identifying the conflation between rectifying harm done by humans with intervention in the normal processes of the natural world.

(c) A minority of candidates did see the questionable assumption that animals have a moral sense.

(d) Again, only a small minority of candidates saw that the defence offered for human behaviour in the past could be applied to animal behaviour now, thus undermining the central argument. A number of candidates offered the point that people who ate meat had not really 'moved on from those times' but this was a challenge to this particular premise rather than a point challenging the reasoning in the passage.

Question 5

Candidates were, on the whole, happier with this question and arguments were produced both to support and challenge. A minority lost marks by arguing for both sides rather than presenting an argument for one side as the question requires. A small minority received no marks as they used material from the passage and seemed to think the question required one to reply to points raised in the passage. Candidates, on the whole, benefited from the greater range of marks this question now attracts compared to the equivalent question in the previous exam/specification.

THINKING SKILLS

| Paper 9694/23 |
| Critical Thinking |

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A number of questions in this new specification and exam specifically target technical aspects of critical thinking, e.g. those that ask candidates to identify a specific argument element. Thorough understanding and preparation are vital if these questions are to be tackled successfully.

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(d) This question was done quite well with many candidates scoring 2 marks by pointing out the *post hoc* problem and giving an example of another factor that might explain the rise.

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THINKING SKILLS

Key messages

'Show that' questions, where the solution is given, focus on the problem analysis part of this component. It is generally not sufficient to jot down a few numbers before presenting the (given) final answer in a box.

Not unexpectedly, the standard of handwriting appears to have deteriorated markedly. Even under time pressure, candidates should take care to write at least the final answer legibly. If it is later changed, it should be crossed out and re-written, not over-written.

Many incorrect answers appear to have been the result of slips, but without the supporting working being written no credit can be gained.

Rounding is the source of many errors, both premature rounding and following some fixed rule rather than what is appropriate in the context. There is also perhaps some confusion in terminology: 17.2 was rounded UP to either 17 or 18.

General comments

International exams use dollars (not necessarily USD), metric distances, degrees Celsius, the 24-hour clock, and the Gregorian calendar with only 60 minutes in an hour. Candidates should all know the order of the months, 100¢ per dollar, 1000 m per km and 100 cm per metre. It is generally easier and safer to use the units in the question and not to convert to miles, which are not synonymous with kilometres.

There is often abuse of equations in working, e.g. $4 × 5 = 20 + 8 = \frac{28}{2} = 14$.

Some candidates are weak on efficient methods of calculation, filling pages of response with processing that could be done much more easily. For example, to calculate $31 × y$ it is not necessary to calculate $2y$, $3y$, $4y$, etc.

Candidates will rarely get full marks by giving two answers when one is called for.

Although no candidate scored full marks and few appeared to be out of time, some bizarre time-wasting was observed, e.g. annotating the correct answer with 'this is not the answer'.

Comments on specific questions

Question 1

A common source of error in this question was to miscalculate a period, e.g. from 25th to 31st inclusive is 7 days, not $31 - 25 = 6$ days.

(a) Most candidates did this, but many did it laboriously, e.g. without using the distance per week or the total number of weekdays.

(b) This asked for both day and date; many candidates offered only one or the other, but a few had only one correct.

(c) Many candidates calculated the total distance possible in the month but omitted to compare this with the required length. A few used time rather than distance, which was not wrong but made the calculations harder.

(d)(i) Some candidates assumed that the cycle started at the beginning of the month, so could not get the numbers to fit. Although many will be unfamiliar with kilometres and so not notice from reality that answers such as a 420 km cycle in a day were implausible, such answers were clearly out of line with the various daily figures in the question, which did not exceed 80.

(ii) Some candidates gave the final answer as the total distance, and not the additional distance specified. Some calculated and identified the correct answer but then carried on to offer a final answer of something else. It is important to respond to the question posed and not just a similar one.

(e) One candidate challenged the observation in the question that there are 31 days in July. Many candidates tried to use averages.

Question 2

Despite using $0.20 for 20¢, a few candidates used $0.2 for 2¢.

(a) There are always some arithmetic errors related to hours and minutes or minutes and seconds, but many candidates calculated the number of periods between trains and not the number of trains.

(b) Many candidates omitted (or miscalculated) the stationary time at intermediate stations. A few subtracted times from the last departure time rather than adding.

(c) Some candidates laboriously calculated total times rather than considering differences.

(d) Some candidates took each step as a separate journey.

(e) Three marks is a good indicator of at least three steps being needed, in this case a fairly standard trio of unit cost, a total value, and one over the other rounded (down) to a whole number.

(f) The calculation of travelling time from cost made this problem much less onerous than some other approaches. Those who only wrote down an answer risked all 4 marks from one slip. Some candidates correctly identified the four sections, but did not identify that the journey was from the start of one to the end of the other.

Question 3

This question involved the skyline algorithm, widely used by online services but unlikely to have been encountered by candidates. Most candidates could handle the data as presented, but found it harder when considering possible changes.

(a)(i) Most candidates picked the correct hotels. A few ignored the explicit mention (and opportunity for checking) that there would be four and offered five.

(ii) Some candidates chose examples on the edge of the zone rather than inside, an error when the boundary is not included (in this case it could result in more than one hotel being excluded). When asked for an example it is generally safer and quicker to select something that is not an edge case. A description of the set of possible answers is not 'an example'.

(b) Most correctly read this from the graph, although a few ignored the restriction to the four hotels.

(c)(i) Only a few offered responses, and many of those did not take into account that there would be two taxi trips. Some unnecessarily added an extra cent without spotting that in the case of equality of cost the further one is discarded.

(ii) Very few candidates answered this correctly.

Question 4

Some candidates did not finish all parts of this question, and it was often those who had used very laborious calculations in earlier questions.

(a) (i) Almost all candidates correctly identified the minimum.

(ii) Most candidates assumed that both players had the same number of turns, and a few ignored the constraint on three of each, but it was also very common to work on a specific grid rather than to consider the global minimum.

(b) Most responses satisfied one or other of the constraints, but many had not checked their example had all the required properties.

(c) (i) Most answered correctly but a few missed a tile.

(ii) Responses rarely indicated the process of deduction, so the few wrong answers cannot be explained with any confidence.

(iii) Some candidates gave the squares but not the scores, and some the scores without the squares.

(iv) Very few candidates worked out the options available to one or other of the players, let alone combined them and removed clashes from the need for the two players to be on different squares. Some listed a subset of the options, not using any discernible systematic approach.

(d) Some candidates did not use the notation provided. This sometimes resulted in ambiguous references that did not get credit. Provision of specific notation is a strong hint that it will help everyone if it is used. Many correctly identified the first step, but few completed the path to demonstrate that it did win.

THINKING SKILLS

| Paper 9694/32 |
| Problem Analysis and Solution |

Key messages

Instructions of the form 'Show that the answer is *n*' can be tackled forwards or backwards (i.e. n is an answer and there are no others). It is generally not sufficient just to show that *n* is indeed an answer. Some words are expected, at least to say what the numbers are.

General comments

If minimum and maximum are called for then two answers are expected. If only one is offered it should be clearly stated which one it is.

Some candidates attempted only two questions, but only a few appeared to have run out of time.

This year most candidates provided working and not just an answer.

Please note that due to an issue with **Question 4(c)(i)**, full marks have been awarded to all candidates for this question to make sure that no candidates were disadvantaged.

Comments on specific questions

Question 1

The models were described without diagrams or graphs. Some candidates could have avoided errors by drawing some suitable timelines to assist them in visualising the scenario.

(a) (i) Most candidates answered this part, but a substantial number calculated the distance against water rather than land.

   (ii) Very few candidates answered this part correctly. It asked for the range of times, and yet many just offered a time, often a specific time of day rather than a point in the tide.

(b) Some candidates ignored the speed and direction of the water, seemingly unperturbed by the ease of their incorrect answer of 8 hours × 5 km/hour = 40 km.

(c) Few candidates noted the symmetry of the optimal case by 'never going against the flow'.

(d) (i) This part asks for a range of times, which can be described in various ways, e.g. start and end, length and start, length and end, or middle and half length either side. Many gave just one (unspecified) time, and some gave a few examples.

   (ii) Many responses had no working and appeared to be no more than a guess.

(e) Some candidates did not spot that in this part the boat was drifting and not powered. Others found the distance travelled in one unpowered cycle rather than half of this value (i.e. just downstream). Most did not make any attempt and may have stopped at the more difficult **(d)(ii)** as this should have been a relatively easy final mark.

Question 2

This question involved working days that were generally not multiples of the unit of work; some candidates ignored this detail, but some others used much more complicated calculations than necessary, with inevitable scope for additional arithmetic errors.

(a) Most answered this correctly. Some candidates did not work out the correct number of working hours in a day and then did not notice that there was an error when the next part (both **b(i)** and **b(iii)**) did not come to the required result.

(b)(i) Some candidates offered a higher number as the minimum and then noted that it was more than 66.

(ii) Few candidates noticed that there could be some time left over from the previous week and so rounding up to 17 was acceptable.

(iii) This involved considering the smallest leftover from the previous day, and the largest amount of time with customers, as well as a fixed amount of break time not being left until late in the day. A few, surprisingly but not erroneously, started off the working day with a lunch break.

(c)(i) Many candidates handled each day separately, rather than combining the hours and then working with the total. The messier and longer calculations resulted in numerous arithmetic errors.

(ii) Most candidates calculated Megan's time, but many did not consider the lack of hours available to Andy on the second day.

(d) Some candidates correctly calculated the candles finished on the first day, but did not take account of any partial completion of batches at the start of the second.

Question 3

One in five did not attempt any part of this question.

(a)(i) Almost all candidates who did respond provided a full and correct presentation of all the details of the process.

(ii) Most candidates did this without showing working. Most were correct.

(b) Most candidates showed the steps and gave the correct final answer.

(c) Demonstrations that the answer was the smallest or had been found in a systematic way were rare, so many responses appeared to be guesses.

(d) Some systematic approach was needed, although trials to explore helped a few candidates to establish what they needed to do. Half of the candidates did not attempt this part.

Question 4

(a)(i) Almost all candidates correctly answered this.

(ii) A few candidates offered more than two, despite the wording of the question making it clear that there are only two. Most candidates identified the correct two, although some found only one.

(b) Ali's team was a popular choice, but most correctly determined it was Ellen's.

(c)(i) Most candidates successfully extracted the constraint that Hari had 4 prizes adding to $140, but many candidates then assumed that there were two first prizes and showed a possible combination, rather than explaining how it could be deduced that there were two first prizes.

(ii) Many again assumed that there were two first prizes and showed in that case there was only one possibility, rather than finding two from the data as it could not be deduced just from the total.

Some candidates made the assumption that there could be only two types of the three prizes, ignoring combinations such as 155 = 40 + 30 + 30 + 30 + 25, despite having correctly answered the first part.

(d) Hardly any candidates answered this correctly. A few correctly noted that with just 10 prizes there are at most 5 pairs, a partial result that many derived from detailed analysis of some of the totals. It was necessary to remove the ones known to have an odd number (and so at least one) before considering where the remaining ones might go.

(e) Most candidates completed most of the table, although C was often wrong. Some candidates delighted in putting the rows in other than alphabetical order, as given in the paper, which was strange but not wrong. It looked as if some were putting in Olympic order, with most firsts, then most seconds, which wasted time. A quarter did not offer any response.

THINKING SKILLS

Paper 9694/33
Problem Analysis and Solution

Key messages

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General comments

If minimum and maximum are called for then two answers are expected. If only one is offered it should be clearly stated which one it is.

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Question 2

This question involved working days that were generally not multiples of the unit of work; some candidates ignored this detail, but some others used much more complicated calculations than necessary, with inevitable scope for additional arithmetic errors.

(a)   Most answered this correctly. Some candidates did not work out the correct number of working hours in a day and then did not notice that there was an error when the next part (both **b(i)** and **b(iii)**) did not come to the required result.

(b) (i)   Some candidates offered a higher number as the minimum and then noted that it was more than 66.

  (ii)   Few candidates noticed that there could be some time left over from the previous week and so rounding up to 17 was acceptable.

  (iii)   This involved considering the smallest leftover from the previous day, and the largest amount of time with customers, as well as a fixed amount of break time not being left until late in the day. A few, surprisingly but not erroneously, started off the working day with a lunch break.

(c) (i)   Many candidates handled each day separately, rather than combining the hours and then working with the total. The messier and longer calculations resulted in numerous arithmetic errors.

  (ii)   Most candidates calculated Megan's time, but many did not consider the lack of hours available to Andy on the second day.

(d)   Some candidates correctly calculated the candles finished on the first day, but did not take account of any partial completion of batches at the start of the second.

Question 3

One in five did not attempt any part of this question.

(a) (i)   Almost all candidates who did respond provided a full and correct presentation of all the details of the process.

  (ii)   Most candidates did this without showing working. Most were correct.

(b)   Most candidates showed the steps and gave the correct final answer.

(c)   Demonstrations that the answer was the smallest or had been found in a systematic way were rare, so many responses appeared to be guesses.

(d)   Some systematic approach was needed, although trials to explore helped a few candidates to establish what they needed to do. Half of the candidates did not attempt this part.

Question 4

(a) (i)   Almost all candidates correctly answered this.

  (ii)   A few candidates offered more than two, despite the wording of the question making it clear that there are only two. Most candidates identified the correct two, although some found only one.

(b)   Ali's team was a popular choice, but most correctly determined it was Ellen's.

(c) (i)   Most candidates successfully extracted the constraint that Hari had 4 prizes adding to $140, but many candidates then assumed that there were two first prizes and showed a possible combination, rather than explaining how it could be deduced that there were two first prizes.

  (ii)   Many again assumed that there were two first prizes and showed in that case there was only one possibility, rather than finding two from the data as it could not be deduced just from the total.

Some candidates made the assumption that there could be only two types of the three prizes, ignoring combinations such as 155 = 40 + 30 + 30 + 30 + 25, despite having correctly answered the first part.

(d)   Hardly any candidates answered this correctly. A few correctly noted that with just 10 prizes there are at most 5 pairs, a partial result that many derived from detailed analysis of some of the totals. It was necessary to remove the ones known to have an odd number (and so at least one) before considering where the remaining ones might go.

(e)   Most candidates completed most of the table, although C was often wrong. Some candidates delighted in putting the rows in other than alphabetical order, as given in the paper, which was strange but not wrong. It looked as if some were putting in Olympic order, with most firsts, then most seconds, which wasted time. A quarter did not offer any response.

THINKING SKILLS

| Paper 9694/41 |
| Applied Reasoning |

Key messages

- In **Question 1(c)**, many candidates struggled to gain any marks.
- In **Question 2** most candidates did as they were asked and attempted to evaluate the reasoning but few achieved very many marks.
- In **Question 3**, candidates struggled to gain marks in **part (a)**.
- In **Question 4**, most candidates created their own argument structure, rather than simply following the sequence in which the documents are presented, but few engaged *critically* with the documents provided.

General comments

Most candidates appeared to have enough time to finish the paper; the extra time appears to have allowed candidates to finish their answers to **Question 4**. The few candidates that may have run out of time had written disproportionately long answers for the earlier, lower-tariff questions. Candidates did less well on the question, **1(c)**, which was different in format from the legacy syllabus.

The standard of candidates varied greatly but there was evidence that some candidates had been well prepared.

Comments on specific questions

Question 1

The early parts of **Question 1** rewarded the well-prepared candidate. Those who knew what was expected and attempted to analyse the argument usually gained at least 3 of the 8 marks for analysis. As ever, some candidates were unaware that quoting from the text is an appropriate, in fact a required, way to answer this question. Almost all candidates gave answers to **parts (a)** and **(b)** that analysed the structure; however, when it came to **part (c)**, many hitherto successful candidates began to evaluate the reasoning.

(a)   Most candidates knew what was required and attempted to identify the conclusion. However, fewer than half of candidates achieved the mark. Of those responses that were not creditworthy, it was common to see answers that paraphrased the conclusion or included extra information inconsistent with the conclusion. Some responses offered the conclusion of the final paragraph as the answer.

(b)   Candidates were more successful at this part of the question, which closely resembled the format of the question on the legacy paper. For most candidates, it was common to award at least 2 marks. Most candidates followed the instruction to give only three answers but some gave four and so the last answer was ignored. A few responses offered intermediate conclusions that were not from those paragraphs stated in the question – proving the value of reading the question carefully. Many near-correct answers were not credited for the same reasons discussed in **part (a)**. Interestingly, many candidates that had paraphrased in **part (a)** stated precise and correct answers in **part (b)**.

(c)   Many candidates did not know what was required of this new style of analysis question, suggesting that few had studied the either specimen paper, or the November 2020 paper. Candidates were required to identify (by stating) parts of the paragraph as individual argument elements and, for full credit, to describe relationships between any elements that had been identified. Some responses summarised the meaning of the paragraph, others evaluated it and some attempted to counter the reasoning.

Of those candidates who attempted analysis, many paraphrased the elements (rather than stating them word-for-word), many did not name the elements and many did not describe relationships between them. It was relatively common to award 1 mark for identifying the conclusion and well-prepared candidates sometimes achieved 2 or 3, but the award of 4 marks was rare.

Question 2

The vast majority of candidates were aware of the nature of the task and attempted an evaluation for both parts of the question.

(a)   As ever, responses that directly countered points given in the argument were not credited, nor were generic statements like '*there is no evidence to back this up*' or '*we don't know the source*'. Many candidates scored 0 but even relatively well-prepared candidates struggled to gain more than 2 marks. No response gained more than 4 out of the 6 marks available. Marks were most commonly gained for identifying the irrelevant appeals to emotion or tradition or for the wild analogy in paragraph 3. Almost all other points on the mark scheme were seen and given some credit, but only sporadically. No candidate mentioned the conflation in paragraph 4. A few candidates did understand what an assumption was and were able to identify some, occasionally; most, however, appeared to regard any unsubstantiated claim as an assumption. It is worth reiterating that if it has been stated in the document, it cannot be an unstated assumption.

(b)   This style of evaluation question was different from the legacy syllabus but most candidates did attempt to do what was required. Most answers gained one mark for realising that the discussion of meat consumption was somewhat tangential to the rest of the document. A few candidates were also able to identify either the lack of reasoning within the paragraph itself or the one part of the paragraph that did support the main conclusion of the document, the intermediate conclusion. The last point on the mark scheme was never seen by examiners.

Question 3

Candidates appeared to know what type of answer was expected and most limited the length of their responses to match the number of marks available. It has been stated in previous reports that criticism of data from any year before the present is not usually valid and any such answers to **part (a)** were not credited. However, on this occasion, such an approach sometimes gained credit in **part (b)** because the question directed candidates to the years 'since 2010'. As in **Question 2(a)**, answers that questioned the source of the figures (or the absence of a source) were not credited.

(a)   Candidates were asked to identify four weaknesses in the statistical evidence in the document. Most offered four suggestions, but it was rare for more than one of their suggestions to be correct. That said, every marking point on the mark scheme was seen by examiners, but never four of them within the same candidate's answer.

(b)   Candidates found this part of the question much easier; most achieved at least one mark. All points on the mark scheme were seen but it was most common to award a mark for noticing the misleading *y*-axis, the limited data since 2010 or that the data was from a single country. Interestingly, most candidates that noticed the UK-specificity of the data then did not notice the data's similarly creditworthy non-human specificity.

Question 4

Candidates were required to use the documents to construct a reasoned case to support or challenge the conclusion that animals should not be used for experimentation. Most were able to engage with this topic, with the majority arguing for the given conclusion. Almost all candidates attempted to construct their own arguments, with very few relying on sequentially summarising the documents. Many candidates were able to arrange their ideas into strands of reasoning that each supported an intermediate conclusion and, hence, score higher than level 1 for the structure skill. However, few candidates were using the documents with a critical eye, which meant the marks for 'use of documents' were often restricted to level 1. Arguments supporting the conclusion were strengthened by effectively responding to potential objections about the absence of any effective alternatives; those challenging the conclusion were strengthened if they included effective responses to objections about the existence of potential alternatives or the ethical dilemmas involved. It is worth reminding centres that what is likely to get high marks is a persuasive argument with a clear structure that is supported by thoughtful, particularly critical, use of the documents and that thoughtfully considers relevant alternative viewpoints.

THINKING SKILLS

> **Paper 9694/42**
> **Applied Reasoning**

Key messages

- In **Questions 1(a)** and **1(c)**, many candidates struggled to gain any marks.
- In **Question 2** most candidates did as they were asked and attempted to evaluate the reasoning but few achieved very many marks.
- In **Question 3**, candidates gained marks in **parts (a)** and **(b)**.
- In **Question 4**, most candidates created their own argument structure, rather than simply following the sequence in which the documents are presented, but few engaged *critically* with the documents provided.

General comments

Most candidates appeared to have enough time to finish the paper; the extra time appears to have allowed candidates to finish their answers to **Question 4**. The few candidates that may have run out of time had written disproportionately long answers for the earlier, lower-tariff questions. Candidates did less well on the questions, **1(a)** and **1(c)**, which were different in format from the legacy syllabus.

The standard of candidates varied greatly but there was evidence that some candidates had been well prepared.

Comments on specific questions

Question 1

Parts of **Question 1** rewarded the well-prepared candidate. Those who knew what was expected and attempted to analyse the argument usually gained at least 3 of the 8 marks for analysis. As ever, some candidates were unaware that quoting from the text is an appropriate, in fact a required, way to answer this question. In contrast to the legacy specification, candidates were, on this occasion, told the argument's main conclusion.

(a) Many candidates did not know what was required of this new style of analysis question, suggesting that few had studied the either specimen paper, or the November 2020 paper. Candidates were required to identify (by stating) parts of the paragraph as individual argument elements and, for full credit, to describe relationships between any elements that had been identified. Some responses summarised the meaning of the paragraph, others evaluated it and some attempted to counter the reasoning.

Of those candidates who attempted analysis, many paraphrased the elements (rather than stating them word-for-word), many did not name the elements and many did not describe relationships between them. It was relatively common to award 1 mark for identifying the conclusion and well-prepared candidates sometimes achieved 2 or 3, but the award of 4 marks was rare.

(b) Candidates were more successful at this part of the question, likely because it more closely resembled the format of the question on the legacy paper. For candidates who understood the task, it was common to award at least 2 marks. Most candidates followed the instruction to give only three answers.

(c)   Only a small proportion of candidates understood the term 'unstated assumption'. Most gave answers that were stated in document. Of those candidates who attempted to give an answer that was not stated in the document, around half achieved the mark.

Question 2

Most candidates were aware of the nature of the task and attempted an evaluation. As ever, responses that directly countered points given in the argument were not credited, nor were generic statements like '*there is no evidence to back this up*' or '*we don't know the source*'. Many candidates scored 0 but relatively well-prepared candidates were able to gain some marks. No response gained more than 6 out of the 9 marks available. All three questionable assumptions were seen by examiners. Other evaluative points that gained credit were the straw man in paragraph 1, the *ad hominem* and *tu quoque* in paragraph 2, and, most often, the wild analogy in paragraph 3.

Question 3

Candidates appeared to know what type of answer was expected and most limited the length of their responses to match the number of marks available for the question.

(a)   Candidates were presented with a graph and asked to explain why the support given by the graph, to an inference drawn from it, was weak. Marks ranged from 0 to 3, although 3 was relatively uncommon. Most commonly, candidates gained marks for noticing a mismatch between the claim, which was about illegal hunting, and the *y*-axis on the graph, which represented mass of ivory seized, then suggesting an explanation for this mismatch. One-mark and two-mark versions of the last bullet on the mark scheme were also seen regularly.

(b)   Most candidates gained a mark on this question, usually for noticing that the numbers were an estimate. A reasonable number of candidates went on to suggest that methods, and hence accuracy, of estimates may have changed over time and were awarded full marks. Only one candidate was awarded a mark for a version of the second bullet point.

Question 4

Candidates were required to use the documents to construct a reasoned case to support or challenge the conclusion that trade in ivory should be legal. Most were able to engage with this topic, with the majority arguing for the given conclusion. Almost all candidates attempted to construct their own arguments, with very few relying on sequentially summarising the documents. Some candidates were able to arrange their ideas into strands of reasoning that each supported an intermediate conclusion and, hence, score higher than level 1 for the structure skill. Few candidates were using the documents with a critical eye, which meant the marks for 'use of documents' were often restricted to level 1. Arguments supporting the conclusion were strengthened by effectively responding to potential objections about an increase in hunting; those challenging the conclusion were strengthened if they included effective responses to objections about the loss of potential income from ivory. It is worth reminding centres that what is likely to get high marks is a persuasive argument with a clear structure that is supported by thoughtful, particularly critical, use of the documents and that thoughtfully considers relevant alternative viewpoints.

THINKING SKILLS

> **Paper 9694/43**
> **Applied Reasoning**

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