ENVIRONMENTAL MANAGEMENT

Paper 0680/01

Paper 1

GENERAL COMMENTS

Questions 5 and **6** appeared relatively easy for candidates, **Questions 2** and **4** difficult. But this did not affect overall difficulty of the paper was similar to Autumn 2005.

Many candidates earned full marks from **1(b) (iii), 5(b) (i),** and **6(b)** and there were good responses on **5(b) (ii)**.

Question 4a was difficult.

The general feeling was that there were few candidates into the 50s and many of the weaker candidates could only pick up a few marks here and there.

However, there is no doubt that the standard is continuing to improve, with very few weak candidates.

Performance was very variable, indicating that the paper differentiated well. Levels of written English let some candidates down, some misinterpreted command words and this often led to poor marks. Some candidates unknowingly contradicted themselves e.g. leaded petrol when they meant unleaded in **Question 5**. Some candidates were not able to use terminology effectively. In **Question 5** there was confusion over global warming and ozone depletion. However, there were some excellent answers from students who had read the questions carefully and focused their answers. In **Question 4a** number of candidates misinterpreted the response material.

There were no problems with time for the candidates; all the scripts indicated the candidates finished the paper. There were no rubric errors although some candidates in **3 (b)(ii)** and **6 (a)(ii)** did not state whether they had chosen to write about pesticides or fertilisers, nomadic pastoralism or tourism.

The answers given by some candidates would suggest that they did not understand or misread the question.

Some scripts were difficult to read.

INDIVIDUAL QUESTIONS

Question 1

(a) (i) This question was often either completely correct or completely wrong. The best answers mentioned mosquitoes and talked about how malaria was transmitted. Some candidates wrote about snakes and wild animals. The poor answers focused on climate, thinking it was too cold at night and long sleeved shirts and long trousers were one way to stay warm.

(a) (ii) This question was also often either completely correct or completely wrong, although more candidates worked out what was required. Many mentioned many different ways of avoiding problems instead of developing one for the two marks available. Mosquito nets and lotions were a common answer. Not going out at night was a common incorrect answer.

(b) (i) A very well answered question, the differences lay in the precision, such as mentioning particular diseases. The better answers indicated an understanding of the nature of water based, water borne and water bred diseases. Weak answers referred to sickness or feeling ill the better answers went on to specify. e.g. dysentery, cholera, typhoid, diarrhoea (a great variety of spellings) and 'running stomach'.

(b) (ii) This question differentiated well, as the better answers gave examples (taps, pipes, flushing toilets etc) whereas the vague ones just talked about cleaning up the water.

(b) (iii) The candidates responded well to this question most gained at least one mark. The most popular benefits were more tourists bringing more money and this resulting in more jobs for the local people.

Question 2

(a) (i) Generally well answered, most recognized activity at plate margins and knew the correct terms.

(a) (ii) Many candidates found this question surprisingly difficult. There were some good attempts at naming locations. However many candidates did not give geographical place names and instead wrote about how earthquakes happen or the different types of plate margins.

(b) (i) The attempt to assist the candidates by providing the key words seemed to help. It gave the candidates a structure, but often led to vague generalisations rather than a structured progressive answer. Weaker answers were influenced by the prompts and just defined them, without writing about the effects. Contrasts between urban areas and rural ones seemed well grasped by some.

(b) (ii) Most candidates felt confident with this question and there were some well thought out summaries on need for monitoring, evacuation, emergency procedures, food, shelter and gas and electricity in reinforced ducts. There were weak answers about buildings with deep, solid foundations. Advice to not build in vulnerable locations was not credited.

Question 3

(a) (i) These two questions were generally well answered.

(a) (ii) Most candidates could interpret the graph, however accuracy was sometimes a problem. Some read the graphs where the words were printed writing 5 for shoot and 7 for root. Some failed to read the question carefully and gave too wide a quantity range.

(b) (i) Pesticide or DDT was a common response for a chemical used to kill pests, and fertilisers for a chemical used to improve the soil. Weaker answers mentioned manure/compost/dung.

(b) (ii) The choice of chemical type was not always obvious in answers to this question, the problems associated with fertilisers appeared well known, those of pesticides seemed hardly known at all. The fertiliser choice therefore provided a better answer, especially when eutrophication was explained.

(b) (iii) Candidates either knew the answer to this question and scored 2 or 3 of the marks available or did not. Some confused biological control with crop rotation, sometimes with the intention of confusing the pests. Others wrote about picking up the pests and putting them in plastic bags. There were more blank scripts for this question than any other.

Question 4

(a) Very few candidates managed full marks. Not many seemed to understand 'El Nino' although it is in the syllabus as an exemplification of the reversal of ocean currents. Many related El Nino to oil spills, some thought it was a large bird or sea creature that ate up all the fish, some thought it was a type of hurricane, others the work of governments. Some wanted quotas introduced and thought the question was about overfishing. Many found it hard to use the map as a basis for explanation, especially if they were not clear what a fishery was. Those that did often did not get much further than the idea the 'warm ocean killed the fish'. Answers that developed the effect of limited minerals on the supply of fish were rare.

(b) (i) This question differentiated well. Most students gained at least one mark, with the effects of oil on the water killing fish. Only those that knew the processes in detail were able to access the top marks. Good answers included reference to oxygen/gills etc, weaker answers wrote about river pollution.

(b) (ii) Many candidates confused the idea of clear up with prevention and so did not gain marks. The majority of answers were about government policies, not dumping waste in oceans, using reinforced ships, pipelines or, surprisingly, aeroplanes. The answers of those who understood the question included floating booms, skimmers, detergent, bioremediation and burning the oil.

Question 5

(a) (i) This question was very well answered by the majority of candidates, although not all carried out the calculation.

(b) (i) This question was a good discriminator, all marks were awarded. Some struggled with the command 'explain'. The best answers showed good understanding of the emissions into the atmosphere and how they caused, in particular, breathing problems for people and global warming. Acid rain was also a popular answer. There was confusion over the difference between global warming and ozone depletion. The best candidates were superb.

(b) (ii) One of the best answered questions. Bicycles, public transport, catalytic converters and unleaded petrol were the most common answers. Donkey carts featured in a number of answers and also 'public cars'.

Question 6

(a) (i) Most answered this question well, with good references to the tropics and the equator. Weaker answers listed the names of continents (as in **2(a) (i)**). Some candidates included information about savannah vegetation in their answers.

(a) (ii) If candidates chose nomadic pastoralism they generally gained full marks mentioning overgrazing and soil erosion, leading to desertification. If they chose tourists then litter was the most common response. Many wrote "land degradation" without going into details. Deforestation appeared in many answers, indicating some uncertainty about the nature of savannah vegetation.

(b) (i) Very few candidates achieved both the marks for this question and many achieved none at all. This was because most focused on perceived causes e.g. increased birth rate, lowering of the death rate, rather than describing a reason for the change. The most popular correct answers related to improvements in medicine.

(b) (ii) In contrast, this question was usually well answered with two or three sensible solutions e.g. education about family planning; supplying contraceptives; legal restrictions e.g. China. There was some mention of gender but very little about pensions.

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Paper 2

General comments

There appeared to be little difference in average performance levels between **Question 1** and **Question 2**; any variation tended to be Centre and candidate specific. The only question that was left unanswered with any regularity was the last question, part **(g)** of **Question 2**. There were three possible reasons for this – lack of time, failure to turn over the final page of the booklet, or difficulty of the question. Of the three, the latter appeared to be the most likely in the majority of cases. Some of the more able candidates reached three or four marks in this question, but few claimed all five marks, and less able candidates typically struggled to gain more than one mark. Many candidates relied upon making the same point in both parts of the answer, and the point made was not necessarily one that was appropriate for developing countries.

Question 1 focused upon pollution and over-fishing, topics which were well understood by candidates in most Centres. The most striking weakness that emerged was for knowledge and understanding of how algal blooms affect marine life in part **(d)(iii)**. The themes covered by individual parts of **Question 2** were more varied. Despite the difficulties posed by part **(g)**, there was always at least one of the other parts with which candidates were more comfortable and that they answered accurately. As usual, the more practical graph based questions were among the best scoring. One disappointment was the number of candidates who made mistakes with the values on or from the graphs, such as by showing 310,000 tonnes for the Thames on the bar graph in **1(b)(i)** before completing the remaining four graphs correctly, or by going up in single figures when attempting to quote values from the line graph in **1(e)**. The 1970 total was stated as 255,000 instead of 275 tonnes, and that for 2000 as 52,000 instead of 60,000.

As in previous years, some able candidates chose to extend their answers into the empty spaces left below the lines. Having done this, most were still able to give complete answers to both parts of **2(g)**, which suggested that the time factor was not an issue despite the range of source materials used in **Question 1** and the length of the newspaper report in **2(c)**. Good candidates seemed to take notice of the stated number of marks for each part of the question and tailored the range and variety of points, as well depth of answering, to the relative worth of the question. Inevitably there were great differences between candidates for the number of words used before they began to write the real answer, instead of merely repeating the question. A greater willingness to use values to support answers was noted this year, especially for part **1(e)**. Weaker candidates continued to give one point answers to two or three mark questions, apparently stopping as soon as all the lines provided had been filled.

Comments on specific questions

Question 1

Few candidates gained all of the first five marks in **(a)(i)**. Although most candidates recognised that the sea currents were the key to answering **(a)(ii**), it was usually more able candidates who gave a fuller description of the pattern or noticed the lack of exits from the North Sea to claim the second mark. In part **(iv)**, either close to the land sources of pollution or shallow water were acceptable answers; it seemed somewhat haphazard, and not always related to level of ability, whether or not a candidate referred to one of these.

In **(b)(i)** it was necessary for candidates to make a careful study of the scale in relation to numbers of squares before starting to draw the bars. Many began by drawing a bar for the Thames at 310,000 instead of 31,000. A few, mainly weak candidates, repeated the same mistake for the Scheldt and Weser, leaving them with accurate bars only for the Rhine and Elbe, which earned them one mark only. A few attempted to draw a line graph with disastrous results. The intention was for part **(b)(ii)** to be answered from knowledge; in the event, most candidates appeared to have referred back to the key for the North Sea map. In many cases what was selected seemed to be a matter of chance. In order to gain both marks, a candidate needed to name two from sewage, animal waste (manure) and (synthetic) fertilisers, which the majority failed to do.

The full range of answer quality was witnessed in part **(c)**. Weaker candidates were stronger on giving examples of the sources of pollutants in **(c)(i)**, giving answers worth one, two or three marks depending upon the range of points made; often they made little further progress in **(c)(ii)** because they did no more than repeat or minimally extend their answers to the first part. Stronger candidates managed to incorporate a range of reasons in the second part by using factors such as amount of industrial activity, level of economic development, effectiveness of pollution controls and river size and length. Included in some of the best answers were references to examples, often drawn from their home country.

Most candidates understood the role of plankton in the marine food chain shown in **(d)(i)**. Answers to **(d)(ii)** suffered from too much basic description of how this food chain works with no more than a passing reference, if any at all, to the main question focus of 'food chains under threat'. Those who noticed that pollution was directly affecting all levels of the food chain and that marine resources were also being depleted by fishing were the ones who soon claimed all three marks. In fact, there were many two marks answers as candidates referred either to pollution or to human use, but not to both. To part **(d)(iii)** there was enormous variation in the quality of answers given. From some Centres candidates showed a full understanding of how the decomposition of algal blooms led to a reduction in oxygen levels in the water; from others the candidates knew the term eutrophication but without fully appreciating how it operated. A few candidates had no idea and tried to work out answers based upon the food chain diagram, with little chance of success.

In part **(e)** there was an easy mark for noting overall decline from 1970 and 2000. After this, some candidates greatly reduced their chances of gaining any more marks by deserting the command word 'Describe' and attempting to give reasons for this decrease. The second mark was awarded for some (but not necessarily a full) description of intermediate trends. The third mark was reserved for the use of values to support trends. Although many more candidates quoted values in this examination than in previous ones, within some answers values were never given, even if all the lines had been filled – showing a real weakness in technique for describing from graphs.

The plentiful information given in the North Sea Time Line in part **(f)** was most useful to candidates when answering part **(ii)**. They needed to do more than merely repeat verbatim the words above the sketches to gain all the marks. Those candidates who included summary references to new technology and to the significance of catching smaller and younger fish were the ones who laid their claim to all three marks quickest. There were plenty of them, although perhaps not as many as might have been expected. Part **(f)(i)** was different – this question demanded understanding and discriminated well between ability levels. Able candidates referred to numbers having fallen so low that they had reached a point where they were unlikely to be able to recover to the levels needed for commercial fishing to continue.

Strategies for managing the world's marine fishing grounds were generally well known. A few candidates were clearly put off by the requirement to place the answers to **(g)(i)** within the two bubbles; occasionally a wider and fuller mention of strategies was given within the written answers to the next two parts of this question. For some candidates the problem arose from using options in their bubbles which were essentially the same as those already given – about measures to stop pollution and to reduce the numbers of fishing boats, even if the language used was different. Candidates had a number of options to choose from. The ones used most were quotas (in various guises especially Total Allowable Catch), minimum net sizes, areas closed or restricted for fishing and limits on certain types of fish. The first two of these were the most popular. Parts **(ii)** and **(iii)** elicited answers which varied greatly in quality, usually in line with candidate ability. Those candidates who began their answers to **(ii)** by referring to the 'Do Nothing' option and commenting on its obvious lack of sustainability made more rapid progress than those who said yes and answered only in terms of all options being sustainable. When in part **(iii)** candidates made use of examples of options, and in particular controlling pollution at the same time as needing to use one or more of the fishing related options, effective answers were produced.

Mark earning responses were frequent throughout the different parts of **Question 1**, but the pattern varied quite noticeably from candidate to candidate. However, as always the resource based questions were the ones that were the most accessible to all ability levels, while the more open ended discursive questions in the last two parts of **(g)** favoured higher ability candidates. Their greater knowledge and understanding allowed them to express a view and offer support.

Question 2

Precise knowledge of the names of all three labelled parts of the rain gauge shown in **(a)(i)** was often lacking. Filter was a common incorrect alternative for funnel for A, and there were many cylinders and tubes for B and C instead of containers. For reasons of stability (expressed in many different ways) was the most commonly made point among answers to **(a)(ii)**, followed by stopping splash back and then reducing evaporation. Few candidates failed to gain at least one mark. Candidates, who tried to base their answers to **(a)(iii)** upon the poor choice of site for the rain gauge under trees or buildings, failed to answer the question in the manner intended. However, candidates who focused upon problems associated with heavy rainfall and strong winds, or referred to the problems associated with measuring other types of precipitation such as snow and hail, addressed the question in a more direct way. There were wide variations in answer quality to part **(a)** between Centres, which appeared to reflect differences in coverage or emphasis for this part of the syllabus.

Some of the answers to part **(b)(i)** suffered from the weakness in general graph interpretation highlighted in the introduction above; 309, 428 and 301 were commonly quoted totals for rainfall in June, July and August. Adding these did not give the correct total of 1065 mm. Such answers could gain only the mark for method, provided that enough of the working was shown. Other candidates ruined what would otherwise have been the correct total by dividing it by three to give an average for the three months, not what the question asked. In **(b)(ii)** candidates needed to do more than just make the general point that total rainfall was higher in August and September than in May and June. Many, mainly weaker candidates, were satisfied with just this statement, which barely began to give the real answer. Of much greater importance was the way in which the high rainfall totals in these two months followed from the wettest month (July) and other months of good rainfall, whereas May and June were at the start of the wet season. Once a candidate adopted this line of answering the two marks were soon claimed.

In **(c)(i)** it was essential for candidates to select at least two pieces of evidence (as suggested by the availability of two marks) that truly suggested the exceptional nature of the flood event in 2004. Values about the height of flood levels, the amount of the country flooded, the numbers killed and affected, and the size of the rainfall total on September 13th in Dhaka illustrated this better than references to the type of damage caused. A surprisingly high percentage of candidates went no further than stating 'in the countryside' when answering **(c)(ii)**; this answer did not take into account that part of the question which referred to avoidance of normal monsoon floods.

For **(d)(i)**, the selection of references from the newspaper report to silt fertilising the land and to fish providing protein for the diet gained the first two marks for stating two advantages. In order to convert this into a four mark answer, the candidate needed to make some attempt to add some explanation for their importance. Although less directly referred to in the newspaper report, there was a third advantage that some candidates used, namely water supply. Its importance could be explained by reference to the cultivation of a water loving crop like wet padi, or to its use for irrigation outside the wet season. Some referred to all three advantages, sometimes without any attempt to explain the importance of any of them, which left answers still worth only two marks. Parts **(d)(ii)** and **(iii)** were not well answered. Although 'short-term' and 'long-term' are relative time scales that are incapable of precise definition, they have a widely accepted use in connection with the aftermath of natural disasters in relation to the different types of aid that are needed. In the report the clearest reference to long-term problems was in the final sentence at the end of the fourth paragraph. However, only a small percentage found this; more commonly both parts of **(ii)** were filled with short-term problems. Answers to **(iii)** not only suffered from the inability to separate short-term from long-term, but also from a failure to mention any strategies. This combination resulted in an even higher percentage of unsuccessful answers. Too many candidates referred only to problems and effects for a second time in answers to part **(iii)** without offering any suggestions for dealing with them.

Although a few made no attempt to draw the pie graph in **(e)(i)**, or somewhat incredibly drew exactly the same graph as the one already completed for forested areas, the majority did complete it accurately. A few calculated the angles, an unnecessary procedure given that the values added up to 100%. For full marks candidates were expected to copy as closely as possible the shading used for forested areas in order to allow comparison with the non-forested areas. The correct answer to **(e)(ii)** was *runoff*, comfortably the most popular answer, despite the attractions of *groundwater* for mainly weaker candidates who looked only at the pie graph for forested areas. There was a close relationship between number of acceptable points and candidate quality in the answers to **(e)(iii)**. More able candidates were much more likely to explain higher rates of interception, transpiration and water use in forested locations. In answers from weaker candidates references to just one process were more typical and it became clear that specialist terms like interception were being used as frequently for obstruction of surface flow or absorption of water by tree roots as for

stopping and delaying rainwater from reaching the surface. Some even more inferior answers were more about soil erosion than movement of water.

A proportion of candidates did not really understand what 'weather forecasts' meant in part **(f)**. Others digressed into the uses and users of weather forecasts. Among candidates who attempted to answer the question as set, improved technology both in data collection and use was the main theme; this regularly led to two mark answers. Only those candidates who emphasised wider and more global data collection from upper atmosphere and over the oceans to supplement that from the many land stations generated answers worth three or four marks. Answers showing this level of understanding were quite rare. A few candidates digressed totally into answers on pollution from aircraft and ships; even worse, this deviation from the question was sometimes continued into part **(g)**. Other irrelevant answers to both parts of **(g)** were based upon alternative energy sources, which was not easy to understand. In line with established practice on this paper for questions in which candidates are invited to give and explain their own views, there were no separate marks for the view chosen. All the marks were distributed for the strength and quality of explanation, irrespective of view. Candidates who answered 'No' to one or both of the questions seemed to find it easier to offer explanation worth three or more marks. They put forward arguments based on the exceptional scale of the floods in 2004, the difficulty of communicating with people in remote rural areas and the shortage of funds and expertise to enable preparations to be made in advance. Many weaker candidates, who tried to answer the questions set, discovered that they could do no more than repeat the same point, often related to shortage of expertise and money, to both parts.

While all but the strongest candidates found it difficult to maintain consistency of performance through all the different parts of **Question 2**, the majority did find questions they could answer well enough. From most their overall answer was similar in standard to the one given in **Question 1**, despite the difficulties posed by parts **(f)** and **(g)**. A big disparity in marks was quite rare and very obvious when it happened.

ENVIRONMENTAL MANAGEMENT

Paper 0680/03
Coursework

General Comments

The standard of work was good; candidates continue to show that they enjoy carrying out the coursework and so generally tend to do well due to their motivation. There was a good range of topics, which demonstrated the interest that candidates have in their environment.

However some candidates continue, to produce a *glossy* report with a shallow analysis and consequently Domain C has little strategy for sustainable development of the chosen resource.

Domain C continues to be the weakest area for most candidates and more thought needs to be given when choosing projects as to how the resource can be managed with sustainable outcomes.

Overpackaging is still annoyingly an issue with some Centres; fancy presentation does not score any extra marks.

Useful comments on the candidate's record sheets were received although the comments and the marks did not always match each other.

Domain A

This continues to be approached thoroughly and the candidates show a good grasp of the processes and theory behind their chosen topics.

Domain B

Yet again candidates demonstrate how well they can collect and present data and it is obvious that many put a lot of effort into this section.

Analysis is not always done very thoroughly and some candidates do not seem to see that they must state the outcomes rather than simply presenting the graphs with no comment

Domain C

This continues to be candidates' weakest section and there are still a fair number of topics chosen which do not lend themselves to a *sustainable development* analysis. Some Centres also continue to over mark this section. The main objective behind the coursework is to show how environmental problems can be solved in a sustainable way and this entails the discussion of several possible approaches with a reasoned choice being made between them. The idea of a strategy is not quite understood by most candidates

ENVIRONMENTAL MANAGEMENT

Paper 0680/04

Paper 4

General comments

This paper invited candidates to consider environmental issues and methods of gathering and interpreting data in the context of one African country, Lesotho. The many candidates understood and made good use of the source material and their written responses were sufficiently clearly expressed that the examiners could be confident that marks awarded were deserved. The mathematical and graphical questions did pose some difficulties for a minority of candidates.

Candidates had no problems completing the paper in the time available, however there was some evidence that candidates did not always make best use of the information given at the beginning of each question.

Overall the pattern of this paper is very similar to past papers and Centres should work through past papers to help candidates see how to make the best use of the information given for each question.

Comments on specific questions

Question 1

(a) (i) There were a wide range of appropriate responses and the examiners were pleased to see that most candidates suggested three reasons why livestock needed to be looked after.

(ii) The majority of candidates gave the correct answer. If the sum of 700 divided by 140 was shown but without a final answer one mark was awarded.

(b) (i) Candidates often seem to lack knowledge of sensible sample sizes for questionnaires or experimental sampling. Any suggestion between 5 – 10% was acceptable, there were some examples of answers larger than 700.

(ii) The questions presented by the candidates to complete the questionnaire were usually easy to follow and suitable spaces for three or more responses were drawn in. The questions were some times aimed rather more towards the motivation of the boys in taking part in the learning programme rather than trying to find out how they had benefited having completed the programme.

(iii) Candidates found it difficult to explain how to use the results of the questionnaire to find out if the living standards had really improved. The Examiners were expecting to see suggestions as to how to use the questionnaire in an unbiased way with some ideas about how to analyse the information. There were a few good answers, the Examiners gave credit for responses that showed some appreciation about how to use questionnaires.

(Iv) However in this section there were a good range of appropriate answers to explain why the education of boys was a priority.

Question 2

This question explored aspects of climate and the hydrosphere.

(a) Candidates needed to look carefully at the table of climate data and select appropriate answers. Many candidates did this and presented appropriate or nearly appropriate answers. However a significant minority seemed to have stated answers that were relevant to their local environment.

(b) (i) There were a wide range of good answers with useful knowledge of the role of protein and carbohydrate in the diet being displayed.

(ii) Candidates from many centres were familiar with the method of measuring flow rates and they completed the captions with clear statements. Other candidates gained some credit from a muddled set of captions; about 10% of candidates did not attempt the question, this often happens if dotted lines are not present and indicates that candidates are not reading the paper carefully.

(iii) The calculations were often completed correctly and if an error was made then subsequent answers correctly calculated gained credit.

(iv) Many candidates either estimated or calculated 6 days correctly.

(c) (i) Many candidates appreciated where silt would be trapped on the diagram and showed shading between and above both sets of stones. There were examples of total shading and some with no shading. The dotted line did seem to prompt nearly all candidates to present an answer and even if they only gave a suitable description on the dotted line they gained credit.

(ii) A wide range of sensible answers were given.

(iii) Root binding was well known as was the process of interception.

(iv) Replanting trees with further detail of controls or only cutting branches gained the marks.

(d) This was an open question and candidates were able to gain all four marks for reasonable suggestions with a described or implied advantage. The candidates with limited command of English found it hard to express their ideas, the Examiners considered their answers carefully and gave credit were possible.

(e) Most candidates appreciated that turbine P would receive less wind due to obstructions and they could think of two uses of electricity.

(f) (i) Nearly all candidates attempted a graph and only a small proportion plotted the 17.00 hour data as well (which was ignored by examiners). Many chose appropriate scales and plotted correctly. A common error was not to label both axes fully, metres per second (m/s) or equivalent was frequently missing.

(ii) The patterns were complicated but the examiners were pleased to see that good candidates could describe the decreasing and increasing wind speeds accurately.

(iii) Many selected B and gave one convincing reason, a second reason from the data was only suggested by good candidates.

Question 3

This question changed the focus to methods for carrying out a field trial.

(a) Candidates who suggested details that should be kept the same for the planting, the harvest and the recording could easily gain 6 marks. The examiners were disappointed with the number of vague or inaccurate answers presented. Planting one bean of each type or measuring the length of each bean at harvest were not sensible suggestions. Very few candidates weighed the crop or counted the number of sacks (of the same size). There was a mark for writing down their results in a table (or notebook or on a graph).

This type of question will be asked in every paper to examine the data collection aspects of the syllabus. Had candidates carried out coursework this type of work would be at the centre of their report.

(b) A wide range of reasons why the farmers decided not to plant the GM bean were given. The cost of the beans, the fact that some could not be saved for next year and their fear of low harvest (for a variety of reasons) were the best answers. Some credit was given to suggestions that they might need more water or fertilisers.