GCSE

Environmental and Land-Based Science

OCR Report to Centres

June 2012

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General Certificate of Secondary Education

Environmental and Land-Based Science (J271)

OCR REPORT TO CENTRES

B681/01 Management of the Natural Environment (Foundation Tier)

General Comments

The B681 paper of the Environmental and Land-Based Science GCSE is the first examination of the new specification. This paper differs from that within the previous specification most notably in that it consists of 50 marks.

The paper is a mixture of short response questions, multiple choice, data analysis and longer response questions. The latter of these typically consist of 6 marks each and assess the level of written communication as well as subject knowledge. The mark scheme accompanying this paper should therefore be evaluated within this context.

As with the previous specification, there are some common questions to both the higher and foundation tier papers allowing for a direct comparison of candidates who are attaining results around the C grade boundary.

The new specification contains new teaching topics, and in general they have been covered well. Where there are specific issues these have been identified within the review of individual questions.

This examination was available as either paper or computer-based (CBT) versions. However, the question numbers quoted relate to the paper-based version.

Comments on Individual Questions

Q1   A well answered introductory question, the more able candidates tended to identify the link between pH and choice of appropriate plants. Lower attaining candidates erroneously chose the response related to moisture.

Q2   Use of large machines: Accessible to most candidates who were well versed in the advantages of their use.

Q3   Soils: Aimed at F grade, this question was well answered by the majority of candidates, who understood their properties.

Q4   Earthworms: Not so well answered. A number of lower attaining candidates did not get to the correct response; sand content.

Q5   Ancient monuments: Well answered my most candidates. The need to keep damage to a minimum is well understood.

Q6   a)   Data analysis work; this caused few issues across the sample.

     b)   A more complex question, many candidates had difficulty expressing their answers or indeed the natural variation that is likely to be present.

     c)   Responses allowed for assumptions made within the previous question, again there was lack of clarity or understanding of the nature of planting. A consistent erroneous concept was to sow before the animals appeared to prevent them being eaten.

Q7   Ivy: A good discriminator question, higher attaining candidates were able to think about the characteristics and environment and bring the two factors together.

Q8   Pyramid of energy (overlap questions).

    a)   Many identifications of the correct crop, but the mark was only awarded if a reason was also given. This was not always present.

    b)   Energy transfer: Caused few issues to those performing at higher levels.

    c)   Not so well answered in all cases, this was a subject that seemed less well understood.

Q9   Hedge planting: Responses aimed at increase in pests and diseases- both valid reasons. Few responses referred to increasing complexities in farm management.

Q10   Sampling:

    a)   Most candidates at most levels able to understand the efficiencies in sampling.

    b)   i)   Good scoring by those at most levels, reasons were more of a discriminator.

        ii)   A surprising number of candidates failed to choose RSPB.

Q11   a)   This question relied on the interpretation and application of data from different descriptions. This was a minor issue to higher attaining candidates.

    b)   Most candidates were able to interpret the table to identify the lack of activity in certain months. Errors from the previous question were factored into the evaluation of responses.

Q12   A 'Level of Response' question common to both papers. This six mark question gave candidates who had a depth of knowledge in this area a chance to express themselves. The incorporation of assessment of written communication must be considered by Centres if they are to develop skills in their candidates to maximise their performance.

13   a)   Weed control: A topic which was clearly taught well in most Centres. This was answered by most candidates with confidence. Again there was an assessment of quality of written communication.

    b)   Two distinct methods of weed control needed - and stated by most higher attaining candidates.

Q14   A longer response question aimed at F grade. This allowed candidates to demonstrate their knowledge but some lower attaining candidates stated hazards from quite a limited range rather than looking at the whole situation. Again, this was a question where the level of communication was assessed and affected the overall marks.

B681/02 Management of the Natural Environment (Higher Tier)

General Comments

The B681 paper of the Environmental and Land-Based Science GCSE is the first examination of the new specification. This paper differs from that within the previous specification in that it consists of 50 marks.

The paper is a mixture of short response questions, multiple choice, data analysis and longer response questions. The latter of these typically consist of 6 marks each and assess the level of written communication as well as subject knowledge. The mark scheme accompanying this paper should therefore be evaluated within this context.

As with the previous specification, there are some common questions to both the higher and foundation tier papers allowing for a direct comparison of candidates who are attaining results around the C grade boundary (a total of eleven of the available marks). This paper however extends up to A* grade with some questions requiring high level responses from successful candidates.

The new specification contains new teaching topics, and in general they have been covered well. Where there are specific issues these have been identified within the review of individual questions.

This examination was available as either paper or computer based (CBT) versions. However, the question numbers quoted relate to the paper-based version.

Comments on Individual Questions

Q1   a)   Biodiversity: Aimed at D and C grades, this question was answered well by most candidates.

       b)   Golf course fertility: Again most candidates were able to identify that these are closely managed and use large quantities of fertilisers.

Q2   Preservation v conservation: Widely ranging responses were seen, with some candidates able to articulate the differences well, and others using the actual words from within the question - which therefore did not score well.

Q3   a)   i)   Calculation was correctly completed by most candidates and their success was related to their overall marks on the paper.

           ii)   Value of production: A related calculation with a similar profile.

       b)   This question required an application of the candidates' knowledge of soil properties and to give a justification. Many stated a correct soil but some lost the mark for lack of justification.

Q4   Production system efficiency (parts a, b and c common with the Foundation paper).

       a)   As with the Foundation paper there were a high proportion of correct responses but the mark also needed a reason, which was sometimes lacking.

b)   Calculation of energy transfer: Achieved well by most candidates.

c)   Reasons for loss of energy were expressed well by most candidates, who also were able to apply the concept to give a good answer for section d) in terms of making the production more intensive.

Q5   a)   A more complex calculation with only those attaining higher marks gaining the correct answer.

b)   Risk assessment: Marks were only given for appropriate risk, effect and recommendation to reduce the risk. However, the question was generally answered well.

c)   The issues relating to complying with NSA guidelines were poorly understood. There were few instances where candidates mentioned the need to keep accurate records, for example.

Q6   a)   Extrapolation of the chart was a skill demonstrated well within this cohort.

b)   Trends for production changes were generally identified but the suggestion of possible reasons were less well covered, although the mark scheme allowed for a wide range of different interpretations.

c)   i)   Lower attaining candidates were more likely to give a wrong answer but generally there were few problems with this question.

ii)   Some candidates failed to give units for their calculation and this should be a learning point that is re-enforced with future cohorts as part of their exam preparation.

Q7   A common question, generally attempted well by the cohort. Candidates should be reminded that this type of question is also assessed for the quality of their written communication and may prevent them from achieving their maximum marks if the work is difficult to read and follow.

Q8   A wide range of responses were allowed but marks were focussed upon the effects of the hedge position and there was an expectation that the answer should show a scientific component relating , for example, to the rate of photosynthesis.

Q9   A six mark question with a written communication component to the marking criteria. Most candidates were able to answer this at a superficial level, but this question allowed candidates to demonstrate the depth of their knowledge on the topic. There were also some responses which were not considered worthy of credit as they were not particularly practical, such as changing all the soil in the field or building a large glasshouse over the area. This question targeted responses up to, and including A* grade.

Q10 Again a question requiring a longer response, targeting the higher grades. Most candidates were familiar with the issue and this proved to be a good discriminator as the depth and thoroughness of their response varied quite markedly.