

# **Examiners' Reports**

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**January 2011**

**HX78/R/11J**

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

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

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### Advanced Subsidiary GCE Science (H178)

#### EXAMINERS' REPORTS

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# G641 Remote Sensing and the Natural Environment

## General Comments

Candidates found this an accessible paper with few misinterpreting the thrust of a question. There was a good, even, spread of marks. Arithmetical problems were generally well answered.

## Comments on Individual Questions

### Q.1

The best answered question on the paper.

- (a) Most candidates could draw a correct waveform, but only the better candidates realised that  $0.12\text{m} = 12\text{cm}$ .
- (b) Candidates are gaining confidence with this type of question, and most could rearrange the equation and substitute the figures correctly. Standard form, powers but especially units, were more of a problem. However, a score of 2 or 3 marks was usual.
- (c) Well answered, using the correct terminology.
- (d) The cause and problems of ionising radiation were well known, but some of the answers were very low level.

### Q.2

This question proved to be a good discriminator.

- (a) Candidates only had a very sketchy idea of what a temperate climate is. Many confused it with tropical rainforest. Others struggled to describe the climate in Britain, but were unsure if it is warm or cold.
- (b) There were some excellent answers with good descriptions of the light dependent and independent stages of photosynthesis. However, a significant number of candidates scored no marks at all. They betrayed considerable confusion between photosynthesis and respiration and had little understanding of the connection between glucose and starch.
- (c) Most candidates could identify the trend in total world grain production and suggest a reason. However, interpreting the graph proved more difficult. Some could not cope with the two vertical scales and would suggest that the world production per head of population was initially higher than the total world production and were confused about the reason for the decline in recent years. Good candidates scored 3 marks with ease.
- (d) Candidates are much more confident with this question, which they have now seen several times in various guises. The term 'steady state' was well defined.

### Q.3

- (a) The term 'biodiversity' is now well understood, although the definitions could be rather vague.

- (b) Candidates realised that geographical isolation was involved here, then would launch into lengthy descriptions of natural selection, but failed to mention that the driving force behind evolution is a CHANGE in circumstances.
- (c) The problems goats may cause was well understood.
- (d) Answers here tended to be rather vague, along the lines of 'loss of medicines', rather than the understanding that it is the loss of the potential to produce these things in the future.

**Q.4**

- (a)
  - (i) Candidates found this question straightforward.
  - (ii) Weaker candidates gave poor answers here which showed little thought here beyond the information they were given in the question eg they can look and see how much vegetation there is.
  - (iii) Well answered by stronger candidates. The weaker ones failed to see the link between nitrates and increased plant growth.
- (b) A difference between waves of thermal IR and NIR was not well known.
- (c) Whilst most candidates could identify the weather over SE England, not many gave a valid enough reason for the use of a negative image. In part (iii), most knew that clouds were cold, but reasoning could be confused. Some assumed that radiation was being emitted by the satellite and was then being absorbed by the clouds.

**Q.5**

- (a)
  - (i) This was well answered
  - (ii) The majority of students could correctly calculate 12% of 160 as 19.2, however, a significant number then went on to subtract this figure from 160.
  - (iii) This question was well answered.
- (b) Candidates lost marks by not going into enough detail. Most would recognise that blackbirds would be adversely affected, but they would then fail to describe the knock on effect in any depth.
- (c) Many candidates could come up with oxygen as the appropriate gas and some would recognise that it is involved in respiration. There were some excellent descriptions of the processes involved by strong candidates.

## **G642 Science and Human Activity**

No report for this unit due to small entry.

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