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Environmental Studies ENVS2

(Specification 2440)

Unit 2: The Physical Environment

Report on the Examination

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General

This proved to be an accessible examination paper. Almost all students attempted all question sections. There was a wide spread of marks, producing good discrimination between students of different abilities.

The best students used precise technical terminology. This allowed them to write more succinct answers without the need to use large amounts of prose to describe issues. They also matched the components of their answers to the number of marks available.

Question 1

Over 66% of students gained full marks. The most common mistake was to confuse infiltration and percolation.

Question 2

(a)(i)&(ii) Many students gave good answers. Some made true statements, but ignored the instruction to use information from the table.

(b) 75% of students gained one mark for referring to photosynthesis, but very few gained a second mark for explaining why this lowered atmospheric CO_2 levels by storing the carbon in a named reservoir eg biomass or fossil fuels.

(c) Most students either knew this answer very well or very poorly. Some students confused fusion and fission.

(d) This was surprisingly poorly answered, with barely half the students knowing that UV is absorbed by ozone.

(e) Nearly half the students did not understand the concept of albedo and scored zero.

Question 3

(a) The best answers gave an overview of the general trend, described variations in the trend and referred to specific dates and DU values.

(b) This was very poorly answered by most students. Very few students understood that fluctuations in trends can only be detected if the data is collected at that time. If the values fluctuate rapidly then more frequent data collection is needed.

(c) Nearly all students correctly named chlorofluorocarbons.

(d)/(e) About half the students scored full marks in each section.

Question 4

(a) (i)/(ii) These were generally not answered well, although more students could give explanations in part **(ii**). In **(i)** few understood that the main effect of ploughing is to make the soil more aerobic so decomposition can occur more rapidly.

(a) (iii) This was well answered, with most students using fossil fuel combustion as an example.

(b) Very few students scored full marks, with nearly half getting 0 or 1 mark. While many students understood the concept of negative feedback, few could relate it to rising CO_2 levels.

Question 5

(a) Only about 25% of students could correctly select data and complete percentage calculations.

(b) (i)&(ii) Most students knew that the sandy soil would have the highest permeability, but fewer knew that the clay content of soil A would result in the highest nutrient level.

(c) Nearly 75% of students could correctly add an X to the triangular graph.

(d) Marks were evenly spread in this question. Better answers stated the erosion control method and gave brief details of how it works.

Question 6

(a) More than 50% of the students gained no marks. The most common correct method was leachate collection or the use of bacteria. Mechanisation was often quoted, but only gained marks if it explained how it enabled lower-grade ores to be exploited, such as by lowering extraction costs and therefore making the ores more profitable.

(b) This was generally well answered.

(c) Most students gained two or more marks. Better students named two methods, gaining additional marks for stating how they affect mine viability.

About 75% of students gained a mark for naming a change in the economy that would affect the cut-off ore grade, with about half gaining a second mark for correctly stating how it would be affected.

Question 7

(a) This was generally poorly answered. While many understood that a balance is created, few understood that fertilisers are needed to replace the nutrients that have been removed or lost.

(b) Nearly half the students did not know how nutrients can cause pollution. Better answers gave clear descriptions of algal blooms, decomposition and deoxygenation.

(c) About 66% of students did not know that the lower solubility of phosphates makes leaching less likely.

(d) The marks awarded for this question were very evenly spread. Better answers stated specific farming activities, how they changed a particular process, and then explained why they had that effect.

Question 8

(a) This was surprisingly poorly answered. Most referred to the use of universal indicator solution or papers, but often missed most essential details.

(b) (i) Few students gained both marks. Many gave trivial answers about the accidental loss or gain of soil.

(b) (ii) Most students failed to score, with very few gaining both marks. Only the best answers showed an understanding that 200 ^{o}C will drive off all water without destroying organic matter, while 500 ^{o}C will burn off organic matter without breaking down minerals.

(b)(iii)&(iv) Only a minority of students could select the correct values and perform percentage calculations.

(b) (v) Nearly 50% of students failed to gain marks in this question. Only a small minority understood that a standardised technique allows comparisons to be made between results within a single study, or between studies, with similar degrees of accuracy.

Question 9

(a) The marks awarded for this question were evenly spread. Many students failed to gain marks by giving true statements that were very vague.

(b) This was generally well answered, with about 66% of students gaining 6 or more marks. The better answers gave precise details, using technical terminology rather than general descriptions. Vague answers such as 'more expensive' gained no credit unless they explained what was more expensive or why.

Mark Ranges and Award of Grades
Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.

UMS conversion calculator www.aqa.org.uk/umsconversion