

Model answers to Section 3 end-of-chapter review questions

The review examination questions at the end of each chapter in *Geography for the IB Diploma: Patterns and Change* are based on the style of question found in Section A of Paper 1. Model answers to selected questions are given here.

The mark allocation for all the questions that follow, unless stated otherwise, is:

a 2 marks **b** 3 marks **c** 5 marks.

10 Soil and change, page 177, question 1

- a**
- (i) *Overgrazing* – the grazing of natural pastures at stocking intensities above the livestock carrying capacity.
 - (ii) *Deforestation* – the process of destroying a forest and replacing it with something else, especially by an agricultural system.
- b** The causes of soil degradation vary considerably by world region. For example, the share of deforestation ranges from 4% in North America to 40% in Asia and 41% in South America. In the last two regions and in Europe it is the major cause of soil degradation. The contribution of overgrazing to soil degradation varies from 15% in Central America to a massive 80% in Oceania. It is the major single cause of soil degradation in Oceania and Africa.

Agricultural practices account for 66% of soil degradation in North America and 45% in Central America, thus being the major causes in these two regions. This cause falls to a low of 8% in Oceania. Over-exploitation for firewood reaches a high of 18% in Central America. In contrast it is not at all significant (less than 1% of the total) in North America, Europe and Oceania.

Figure 10 shows that soil degradation due to industrialisation is only significant in Europe.

- c** The best candidates will strike a relevant balance between human and physical factors. Discussion is likely to centre on the following factors:
- Soil degradation due to deforestation is greatest where (a) the highest rates of legal and illegal cutting are occurring and (b) remedial measures are at their weakest. The best candidates may point to the fact that many developed countries such as the UK now have only a small area under forest as their forests were cleared centuries ago to make way for the expansion of agriculture. However, some interesting explanations may be offered for the high figure for Europe compared with the rest of the developed world.
 - Over-exploitation for firewood is also concentrated in developing regions as firewood is the major source of energy for many of the world's poor.
 - The dominance of overgrazing as a cause of soil degradation in Oceania is an example where candidates might be expected to comment on the fragile nature of much of the physical environment in this region. Candidates may also point to the types of landscape in Africa where overgrazing is most likely to occur.
 - In terms of agricultural practices, good candidates might contrast the high degree of soil degradation caused by agro-industrialisation in North America with the impact of poor farming practices in many developing countries due to fragile environments, lack of investment and limited farming knowledge.

- Some reference should be made to the impact of industrialisation and why it is significant in Europe, but not elsewhere in the world.

12 Biodiversity and change, page 210, question 1

- a** *Biodiversity* – the diversity of plant and animal life in a particular habitat or in the world as a whole.
- b** Candidates should select three of the eight factors offered by the diagram. The brief notes supplied with each factor should serve as a useful prompt to begin discussion but candidates must elaborate to a reasonable degree for the higher marks awarded in this section. For example:
- Global climate change – reference could be made to the projected scale of climate change with examples given of habitats/countries at particular risk.
 - Attitudes of humans towards biodiversity – attitudes in individual societies change over time from initial action by pressure groups to government legislation. Reference might be made to NGOs such as the Sierra Club, Friends of the Earth and Greenpeace.
 - Over-exploitation – examples of illegal logging and over-fishing could be provided along with details of wildlife trade.
- c** The relative contribution of different reasons for the loss of biodiversity may vary from one area of rainforest to another. However, it is important that candidates show a clear understanding that loss of biodiversity in virtually all areas of rainforest is multivariate.

Candidates using the Amazon rainforest as an example are likely to refer to biodiversity loss due to:

- the expansion of soybean farms
- the creation of huge cattle ranches
- providing newly settled smallholders with land
- cutting timber for furniture manufacture, pulp and paper, and for fuel
- the exploitation of mineral deposits
- building roads
- providing land for urban and industrial uses.

Some reference to the extent of biodiversity loss over a certain time period should be expected. Better candidates might make some reference to future projections.