

## Answers to exam-style questions for Paper 1 Section B

An abbreviated answer is given for one Paper 1 Section B example question per syllabus topic.

Section B questions have a maximum mark allocation of 15 marks. Marks should be allocated according to the markbands which can be found on pages 55 and 56 of the IB Geography Guide. The level descriptors range from markband A (0 marks) to markband F (13–15 marks).

### Populations in transition

*Examine the reasons for global variations in fertility and mortality.*

Moderate candidates may directly or indirectly make references to fertility and mortality in terms of birth and death rates only, while better candidates will make at least some reference to age-specific rates (total fertility rate, infant mortality rate etc.).

Factors influencing global variations in fertility may be grouped into four main categories, as follows:

- Demographic – for example, in many societies high infant mortality rates have in the past been an incentive to high levels of fertility, with parents often having many children to compensate for expected deaths in childhood. A large proportion of women in the reproductive age range can be a major influence on the birth rate.
- Social/cultural – in some societies tradition demands a high rate of reproduction. Education, particularly female literacy, is the key to lower fertility. In some countries religion is an important factor influencing fertility. As countries develop, fertility tends to decline first among the higher socio-economic groups and last among the poorest in society, due mainly to a combination of high infant mortality and low educational opportunities for women.
- Economic – in many poor countries children are viewed as an economic asset due to (a) the work they can do and (b) the support they are expected to give their parents in old age. In developed countries the economic cost of children is often more apparent, with couples deciding between starting/expanding a family and having a higher quality of life (in economic terms).
- Political – different countries have at various times in the past encouraged population growth for economic and strategic reasons.

The best candidates might argue that the factors covered above do not affect fertility directly, but influence another set of variables that determine the rate and level of childbearing – the ‘intermediate variables’ that affect fertility (see page 11 Figure 9 in *Geography for the IB Diploma: Patterns and Change*). Good candidates might also be expected to supply some data to illustrate the extent of the fertility gap and also to note that the gap is narrowing.

Discussion of the factors affecting global variations in mortality will probably centre around the relationship between wealth and mortality and the very significant difference in the causes of death between the developed and developing worlds. For example, in the developing world infectious and parasitic diseases account for over 40% of all deaths. This may be part of a discussion of the challenges of the physical environment in many developing countries. As countries develop, the impact of disease tends to change from infectious to degenerative – the epidemiological transition.

Good candidates should be able to detail the social and economic factors that contribute to high rates of infectious diseases. These include: poor nutrition, poor access to health care, deficient immune systems, evolving human migration patterns, and new infectious agents. The better candidates should be able to supply some data and to note that the global mortality gap is also narrowing.

## Disparities in wealth and development

*Discuss the factors responsible for disparities and inequalities within countries.*

It is reasonable to expect that answers will make some reference to the scale of socio-economic disparities within countries before discussing the reasons responsible. Reference might be made to the Gini coefficient as a technique frequently used to illustrate the extent of income inequality within countries, with some mention of countries at different ends of the scale according to the Gini coefficient. In general more affluent countries have a lower income gap than lower-income countries.

Explanation might begin with the application of core–periphery theory (cumulative causation) where standard diagrams could be usefully applied. Regional economic divergence can be expected in the earlier stages of economic development, but as development gains momentum regional economic convergence should take over.

Detailed discussion of individual factors is likely to centre on those itemised in the syllabus:

- Residence – disparities are evident in terms of (a) regional differences (b) urban/rural contrasts (c) intra-urban contrasts.
- Ethnicity and employment – the development gap often has an ethnic and/or religious dimension whereby some ethnic groups in a population have income levels significantly below the average for a country. Ethnic minorities are often over-represented in the informal sector of an economy, with all of its disadvantages.
- Education – education is a major factor in explaining the development gap within countries. Those with higher levels of education invariably gain better-paid employment. In developing countries there is a clear link between education levels and family size.
- Land ownership – in developing countries in particular the greatest disparities tend to occur alongside the largest inequalities in land ownership. The ownership of even a very small plot of land provides a certain level of security that those in the countryside without land do not have.

Some candidates may have useful information on other relevant factors which will add to the depth of their arguments. Exemplification may be focused on one country or span a number of different countries.

## Patterns in environmental quality and sustainability

*Examine the causes and consequences of soil degradation.*

A good introductory paragraph should include a clear definition of soil degradation, e.g. the physical loss and the reduction in quality of topsoil associated with nutrient decline and contamination. There might also be some brief description of the global scale of soil degradation with mention of some of the worst-affected regions.

### Causes

In temperate areas much soil degradation is the result of market forces and the attitudes adopted by commercial farmers and governments. In contrast, in the tropics much degradation results from high population pressure, land shortages and lack of awareness.

The main cause of soil degradation is the removal of the natural vegetation cover, leaving the surface exposed to the elements. Some candidates may refer to the universal soil loss equation which is an attempt to predict the degree of erosion that will occur in an area on the basis of certain factors which increase susceptibility to erosion.

Expect discussion to focus on:

- Deforestation – occurs for a number of reasons – agriculture, timber exploitation and mining. The loss of vegetation for fuelwood is a massive problem in many developing countries. Deforestation means that rainfall is no longer intercepted by vegetation.
- Overgrazing – this is the grazing of natural pastures at stocking intensities above the livestock carrying capacity. Good candidates will explain the chain of causation for this process, perhaps with the aid of an appropriate diagram.
- Agricultural mismanagement – due to both a lack of knowledge and the pursuit of short-term gains against consideration of longer-term damage. Various types of mismanagement might be considered.

Consideration should also be given to the agents of erosion – water and wind. Candidates may differentiate between physical, chemical and biological degradation.

### Consequences

The environmental and socio-economic consequences are considerable. Discussion is likely to focus on:

- desertification including dust storms
- the reduction in soil buffering capacity
- impact on water bodies
- loss of biological diversity
- mudflows and floods
- the threat to food security.

A good balance between causes and consequences is required to reach the top markbands.



## Patterns in resource consumption

*Discuss the opposing views of the neo-Malthusians and anti-Malthusians in terms of population and resource relationships.*

Expect brief definitions of ‘neo-Malthusians’ (resource pessimists) and ‘anti-Malthusians’ (resource optimists) at first; better candidates may provide some elaboration on ‘resources’. Some reference to current concerns with regard to resources may be made to illustrate the contemporary nature of this debate.

### Neo-Malthusians

Neo-Malthusians argue that an expanding population will lead to unsustainable pressure on food and other resources. Most candidates will describe the main elements of Malthus’s *Essay on the principle of population* – the difference between arithmetical progression and geometrical progression, limiting factors etc. Simple diagrams may be provided. Discussion on overpopulation, underpopulation and optimum population may follow. The best candidates might be expected to show understanding of the concept of ‘optimum rhythm of growth’ whereby population growth responds to substantial technological advances. Any exemplification is likely to be historical in nature.

### Anti-Malthusians

Anti-Malthusians believe that human ingenuity will continue to conquer resource problems, pointing to many examples in human history where, through innovation or intensification, humans have responded successfully to increased numbers. The issues discussed may include:

- the development of new resources
- the replacement of less efficient with more efficient resources
- the rapid development of green technology
- important advances in agricultural research
- stabilising levels of consumption in some developed countries.

The better candidates will provide a reasonable level of exemplification, for example reference to the Green Revolution and the development of renewable energy resources as a substitute for fossil fuels.

A reasonable balance between the two sides of the argument is required to reach the top markbands.