

## Geography

### Higher level

### Paper 2

Wednesday 18 November 2015 (morning)

2 hours

#### Instructions to candidates

- Do not open this examination paper until instructed to do so.
- Answer three questions. Each question is worth **[20 marks]**.
- Each question must be selected from a different optional theme, A – G.
- Do not answer two questions on the same optional theme.
- Use case studies, examples, maps and/or diagrams where relevant.
- A copy of the geography paper 2 resources booklet is required for this paper.
- The maximum mark for this examination paper is **[60 marks]**.

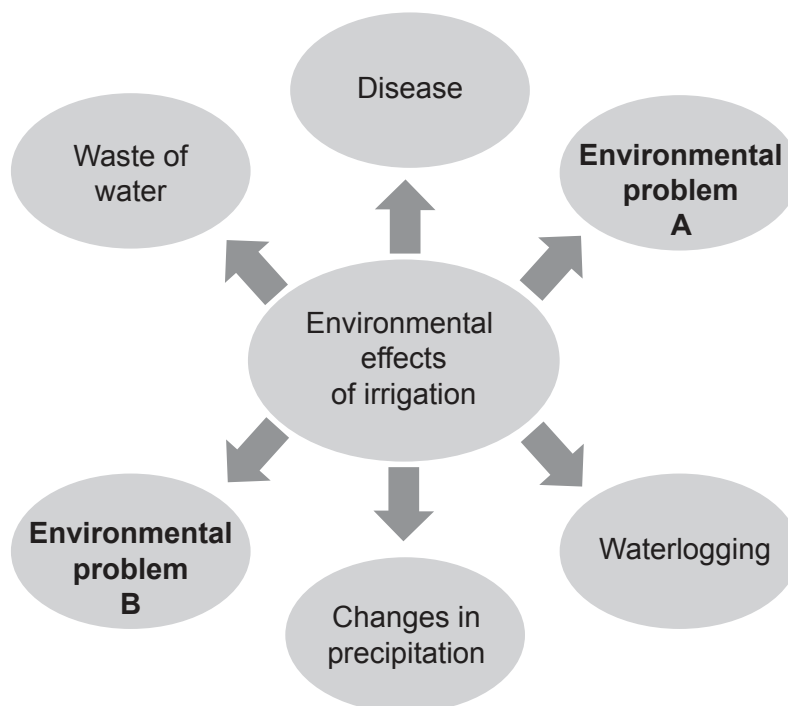
Option	Questions
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Answer **three** questions. Each question must be selected from a different optional theme.  
(Do not answer two questions on the same optional theme.)

Wherever possible, answers should include case studies and examples, and where relevant, large, well drawn maps and diagrams.

**Option A — Freshwater – issues and conflicts**

1. The diagram below outlines environmental problems for agriculture associated with the overuse of irrigation water.



[Source: © International Baccalaureate Organization 2016]

- (a) State **and** briefly outline what environmental problem A **and** environmental problem B could be. [2+2]
- (b) Using **one named** example, briefly explain **one** cause and **two** consequences of an international conflict related to freshwater. [6]
- (c) “Natural factors are always more important than human factors in causing a river flood.” Discuss this statement with reference to **one named** example. [10]

(Option A continues on the following page)

**(Option A continued)**

2. (a) (i) Briefly outline how the natural recharge of an aquifer takes place. [2]
- (ii) State **two** methods that can be used to artificially recharge an aquifer. [2]
- (b) Suggest how **three** human modifications of a floodplain can help to reduce flooding. [2+2+2]
- (c) Evaluate the strategies that have been used to resolve competing demands for water in **one named** river basin. [10]

**End of Option A**

**Turn over**

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**Option B — Oceans and their coastal margins**

3. If you choose to answer this question refer to the map on page 7 in the resources booklet and its key on page 6.

Map B shows the area around the city of Prince Rupert (population: 13 000) on the west coast of Canada. The scale of the map is 1:50 000. The contour interval is 40 metres.

- (a) Identify **and** briefly describe **two** coastal landforms in area X marked on map B. [2+2]
- (b) Using located examples, suggest **two** reasons why ocean pollution may impact areas far from the source of pollution. [3+3]
- (c) Evaluate the contribution that subaerial processes and wave action make to the development of coastal landforms. [10]

4. If you choose to answer this question refer to the photograph on page 2 in the resources booklet.

The photograph shows part of an advancing coast.

- (a) Describe **two** physical and/or human features shown in the photograph that suggest this is an advancing coastline. [2+2]
- (b) Explain how oceanic trenches are formed. [6]
- (c) “There are no simple solutions for the conflicts that arise over the use of coastal areas.” Discuss this statement. [10]

**End of Option B**

**Turn over**

**Option C — Extreme environments**

5. If you choose to answer this question refer to the photographs on page 3 in the resources booklet.

The two photographs show the Qori Kalis Glacier, Quelccaya Ice Cap, Peru. Photograph A was taken in summer 1978; photograph B was taken in summer 2002.

- (a) Describe **two** changes in the landscape shown by the two photographs that demonstrate glacial retreat. [2+2]
- (b) Explain the formation of **two** features resulting from the processes of glacial and/or fluvioglacial deposition. [3+3]
- (c) Using examples, discuss the opportunities for agriculture in hot, arid areas. [10]

6. If you choose to answer this question refer to the photograph on page 4 in the resources booklet.

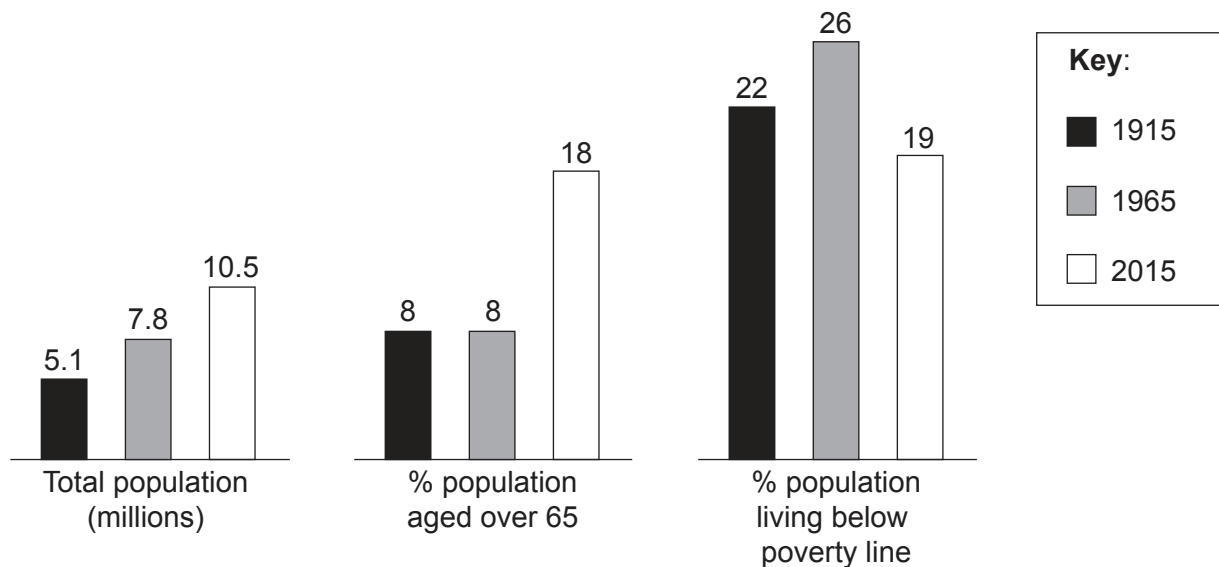
The photograph was taken at 68° North.

- (a) Referring to the photograph, briefly describe how people have adapted their clothing **and** transport in order to live in extreme cold environments. [2+2]
- (b) Explain **two** causes of low rainfall in hot, arid environments. [3+3]
- (c) Examine how tourism in **one** type of extreme environment has led to a wide range of adverse environmental impacts. [10]

**End of Option C**

**Option D — Hazards and disasters – risk assessment and response**

7. The diagram shows changes in population and vulnerability for a city at risk of multiple natural hazards, between 1915 and 2015.



[Source: © International Baccalaureate Organization 2016]

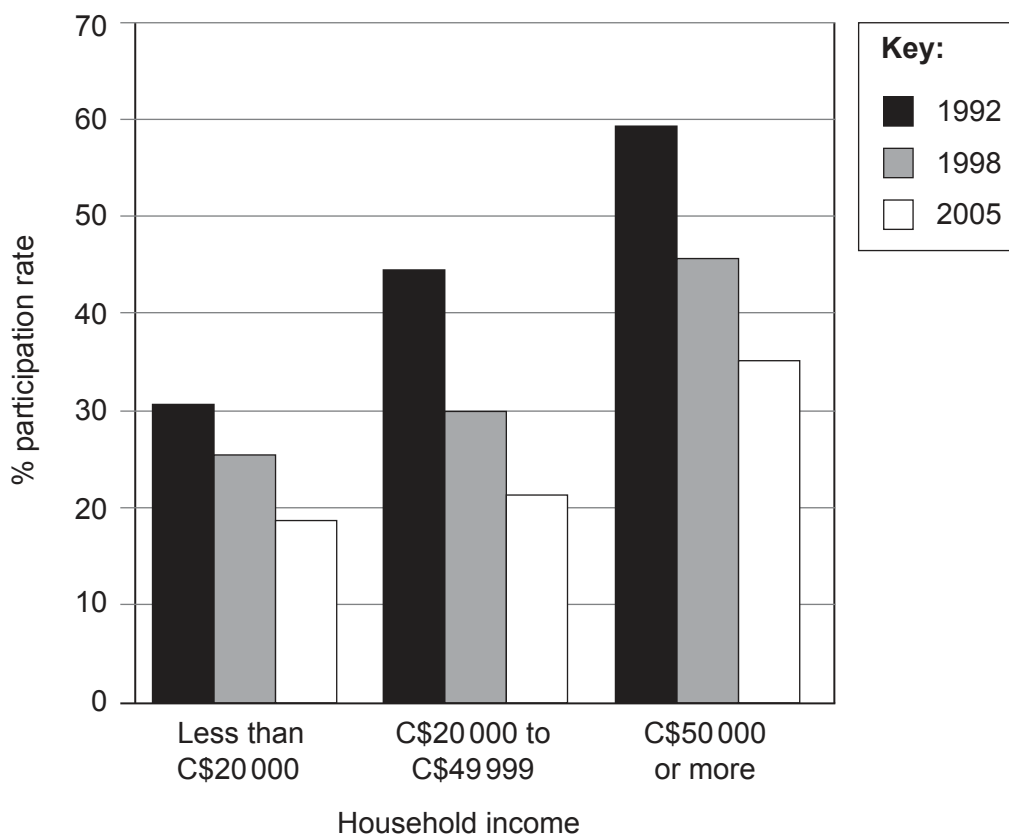
- (a) Using data from the diagram, describe **three** trends shown. [4]
- (b) Suggest how a community's vulnerability to hazards is affected by:
- (i) the demographic characteristics of its population; [3]
  - (ii) the socio-economic characteristics of its population. [3]
- (c) Using examples, contrast the strategies adopted to minimize the risk from future droughts and hurricanes. [10]
8. (a) Referring to **either** earthquakes **or** volcanoes, briefly outline:
- (i) **one** scale used to measure the magnitude of the hazard event; [2]
  - (ii) why some hazard events are categorized as disasters. [2]
- (b) Referring to **either** earthquakes **or** volcanoes, briefly explain their occurrence:
- (i) at a destructive (convergent) plate margin; [3]
  - (ii) in areas **other than** along a plate margin. [3]
- (c) Discuss why some hazard events are easier to predict than others. [10]

**End of Option D**

**Turn over**

**Option E — Leisure, sport and tourism**

9. The graph shows people's participation in sport in Canada in relation to their household income between 1992 and 2005.



[Source: adapted from www.statcan.gc.ca]

- (a) Referring to the graph, describe the relationship between household income and participation in sport in Canada. [4]
- (b) Using examples, explain how levels of participation in international sport are affected by:
- (i) **one** economic factor; [3]
- (ii) **one** political factor. [3]
- (c) "Land value is the most important factor influencing the location of recreation and sports facilities in urban areas." Discuss this statement with reference to specific urban areas. [10]

**(Option E continues on the following page)**



**(Option E continued)**

- 10.** If you choose to answer this question refer to the diagram on page 5 in the resources booklet.

The diagram shows information about international tourist arrivals in 2012.

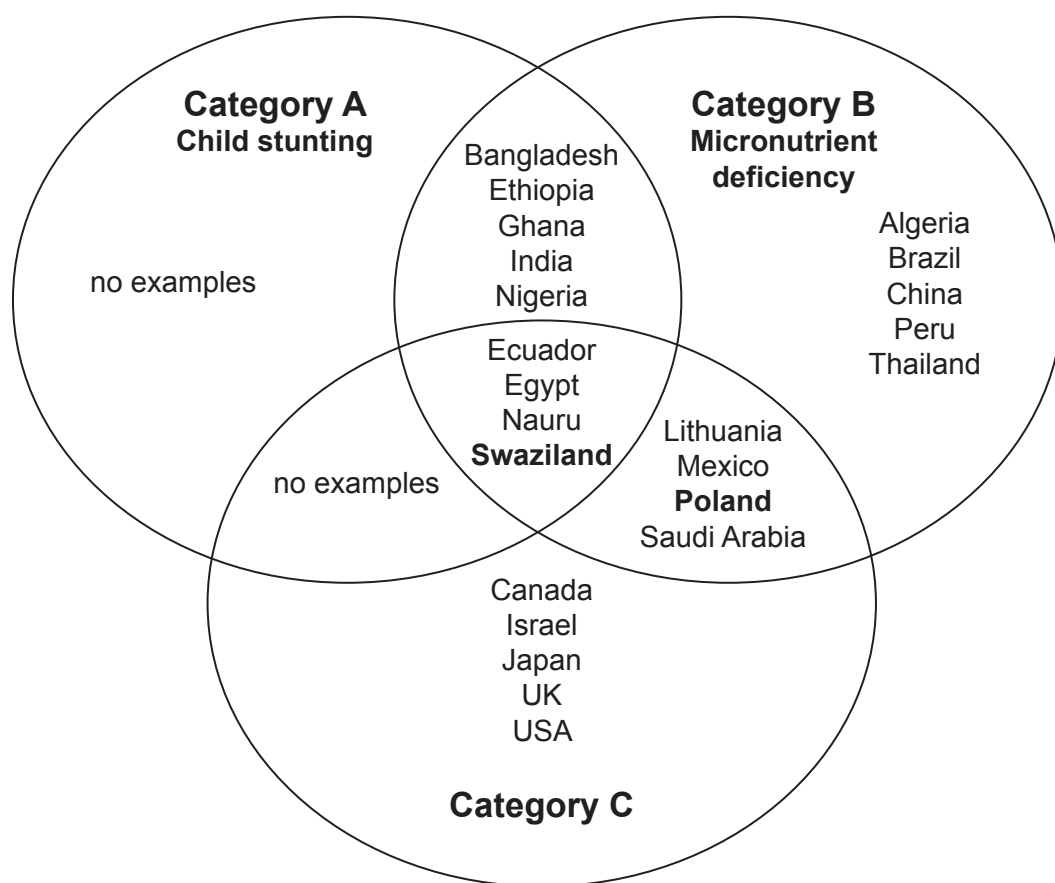
- (a) Briefly describe:
- (i) the pattern shown on the bar graph; [2]
  - (ii) the trend shown on the map. [2]
- (b) Using examples of countries, suggest **three** reasons why numbers of international tourist arrivals have sometimes **decreased**. [2+2+2]
- (c) “The economic gains from tourism always exceed its negative social impacts.”  
Discuss this statement with reference to **one or more** case studies. [10]

**End of Option E**

**Turn over**

**Option F — The geography of food and health**

11. The Venn diagram shows overlapping categories of malnutrition, with some examples of countries in different categories.



[Source: © FAO 2013 'The state of food and agriculture', www.fao.org (accessed November 2015)]

- (a) (i) Identify the malnutrition category experienced in Swaziland, but **not** in Poland. [1]
- (ii) Briefly describe how the malnutrition category you have identified in (a)(i) affects an individual. [2]
- (iii) Identify malnutrition category C. [1]
- (b) Briefly describe what is meant by the term famine. [2]
- (c) Referring to **one** type of agricultural system, explain what is meant by the term energy efficiency ratio. [4]
- (d) To what extent is access to safe water a good indicator of the health of a population? [10]

**(Option F continues on the following page)**

**(Option F continued)**

- 12.** If you choose to answer this question refer to the maps on pages 6–7 in the resources booklet.

Map A shows the spread of an influenza (flu) outbreak in the area over a four-week period. All people catching flu in the first week lived inside the area marked 1, all people catching flu in the second week lived inside the area marked 2, and so on.

Map B shows the area around the city of Prince Rupert (population: 13 000) on the west coast of Canada. The scale of the map is 1:50 000. The contour interval is 40 metres.

- (a) (i) Identify the type of diffusion shown on map A by the spread of flu in the first two weeks. [1]
- (ii) Identify the type of diffusion shown on map A by the spread of flu in week four to new areas such as the settlement of Digby Island. [1]
- (iii) Using evidence from map B, suggest why the flu outbreak started in square 1419. [2]
- (b) Using evidence from map B, suggest **three** reasons for the spread of this disease between the end of week one and week four. [2+2+2]
- (c) Examine the reasons why some communities enjoy greater food security than others. [10]

**End of Option F**

**Turn over**

**Option G — Urban environments**

13. The photograph shows part of the informal sector of the economy in King William's Town, South Africa.



[Source: © International Baccalaureate Organization 2016]

- (a) Using photographic evidence, outline **two** characteristics of the informal sector of the economy in King William's Town. [2+2]
- (b) Referring to examples, explain **two** factors that influence the location of megacities. [3+3]
- (c) "Sustainable urban management is desirable but impossible to achieve." Discuss this statement, using examples. [10]
14. (a) (i) Define the term *suburbanization*. [2]
- (ii) Briefly outline **two** possible **population** changes in an urban area where suburbanization is occurring. [2]
- (b) Referring to **one or more named** cities, explain **two** ways in which humans affect urban air pollution. [3+3]
- (c) Examine the effects of the movement of services and manufacturing activities to new locations in cities. [10]

**End of Option G**