Diploma Programme
Programme du diplôme
Programa del Diploma

Geography
Higher level
Paper 2

Tuesday 17 May 2016 (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
Option A — Freshwater – issues and conflicts	1 – 2
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Option D — Hazards and disasters – risk assessment and response	7 – 8
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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. If you choose to answer this question refer to the map on page 2 in the resources booklet.

    The map shows the Clutha River and the town Balclutha on the South Island of New Zealand.
    The scale of the map is 1:50 000 and the contour interval is 100 metres.

    (a) Identify **and** locate **two** natural river landforms found on the Clutha River's floodplain.   [2+2]

    (b) (i) Briefly explain how **one** human modification of the floodplain shown in area A
              (outlined in black) may reduce river flooding.   [2]

         (ii) Suggest **two** ways in which the settlement of Balclutha may have led to
               increased river flooding.   [2+2]

    (c) Examine how the environmental impacts of agriculture and irrigation on water quality
         vary from place to place.   [10]

2. (a) Outline how water is transferred through a drainage basin by:

         (i)   infiltration;   [2]

         (ii) throughflow.   [2]

   (b) Suggest how a change in the balance of water stored in oceans and ice could result in:

         (i)   **one** environmental consequence with **positive** effects for people;   [3]

         (ii) **one** environmental consequence with **negative** effects for people.   [3]

    (c) "The benefits gained from the construction of large dams outweigh any costs."
         Discuss this statement with reference to **one or more** major dams.   [10]

End of Option A

Option B — Oceans and their coastal margins

3.   The graph shows changes in average annual ocean salinity and temperature with depth.
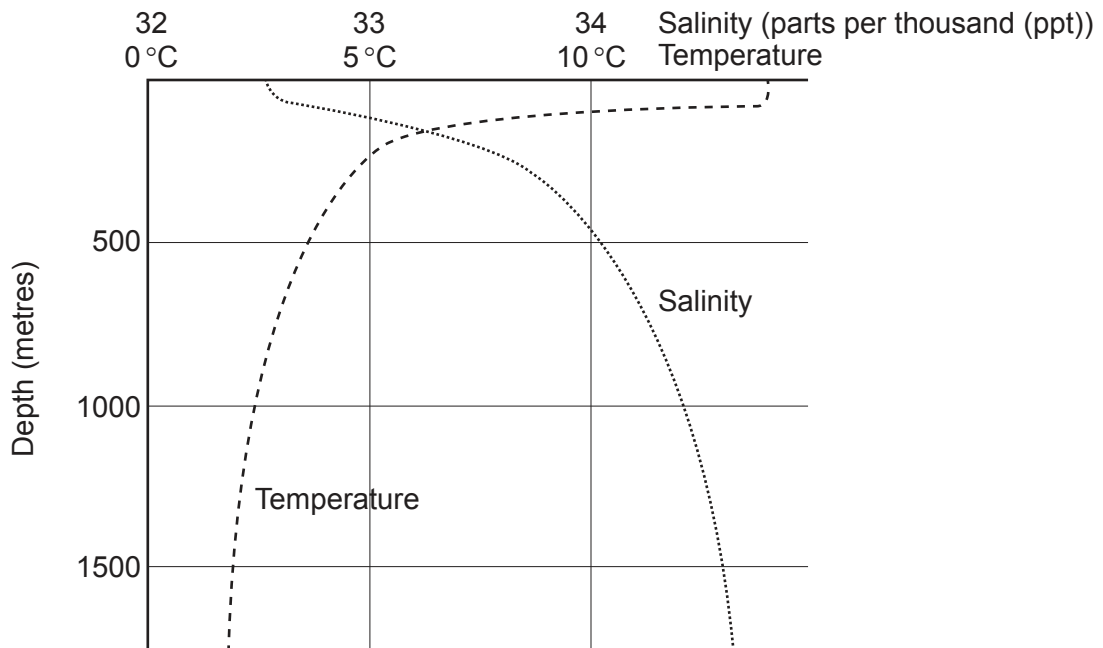
[Source: HOLDEN, J. AN INTRODUCTION TO PHYSICAL GEOGRAPHY AND THE ENVIRONMENT,
(c) 2005, p. 60. Reprinted by permission of Pearson Education, Inc., New York, New York.]

(a)   Referring to the graph:

    (i)   describe how ocean salinity varies with depth;   [2]

    (ii)   describe how ocean temperature varies with depth.   [2]

(b)   Explain **three** economic benefits of mangrove swamps.   [2+2+2]

(c)   To what extent have the management strategies adopted to resolve human pressures
on **one named** coastline been successful?   [10]

(Option B continues on the following page)

Turn over

(Option B continued)

4. The graph shows the global production of fish from coastal aquaculture and ocean fishing between 1980 and 2015.
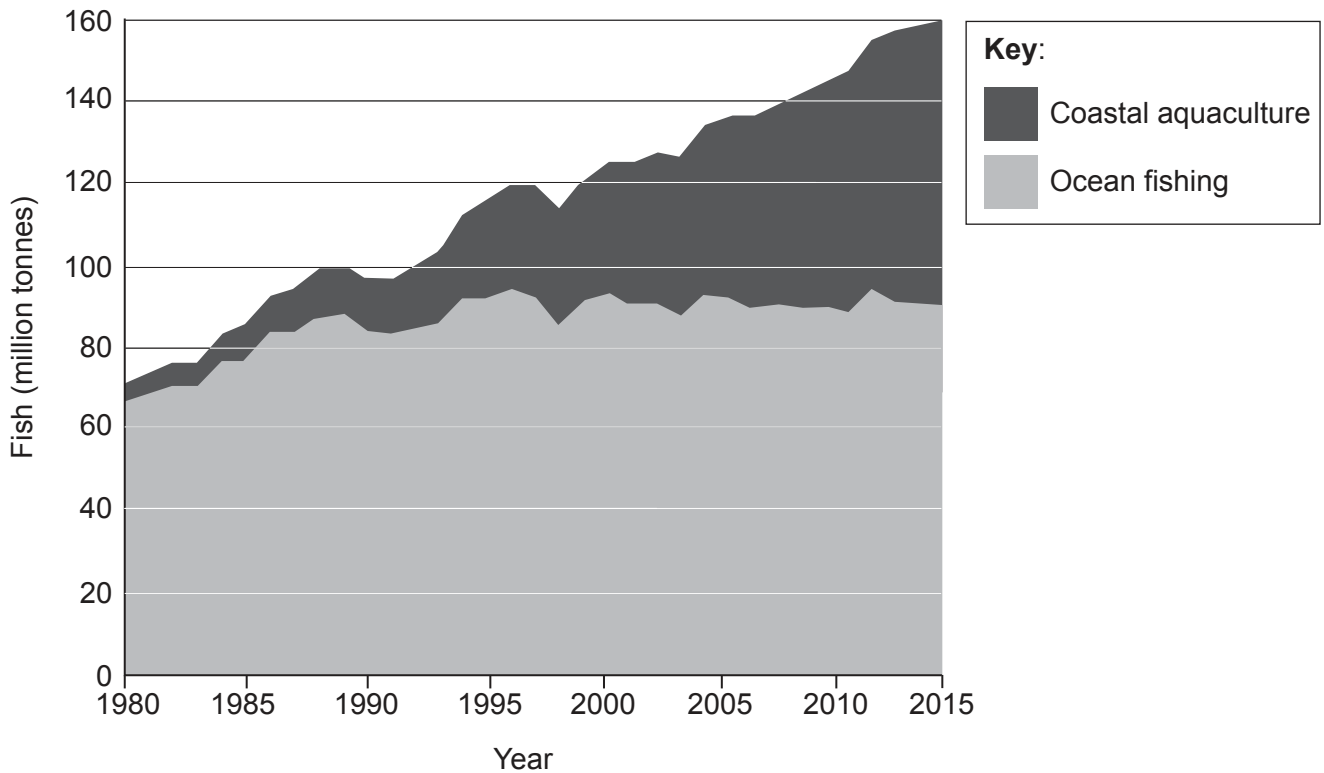

[Source: Food and Agriculture Organization of the United Nations, FAO (2014)
The State of World Fisheries and Aquaculture http://www.fao.org/3/a-i3720e.pdf
Reproduced with permission.]

(a) (i)   Describe what is meant by the term "aquaculture".   [2]

     (ii) Describe the trends in coastal aquaculture shown on the graph.   [2]

(b) (i)   Briefly outline the sovereignty rights of nations in relation to oceanic resources.   [2]

     (ii) Explain how oceanic resources are the cause of **one** geopolitical conflict.   [4]

(c) Compare the importance of coastal processes and lithology for the formation of
     two or more coastal features.   [10]

End of Option B

Option C — Extreme environments

5.   The graph shows climatic data for an extreme arid environment.
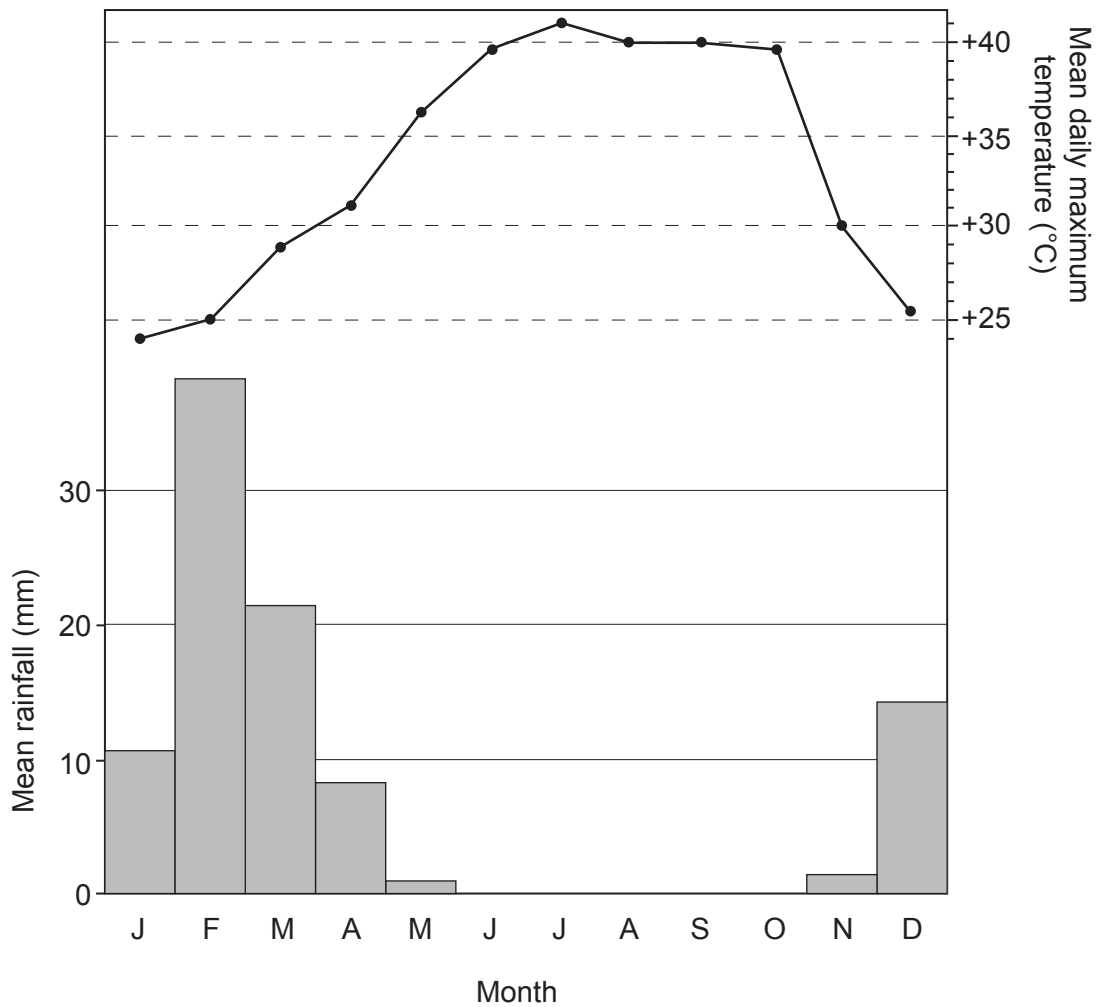
[Source: From the World Weather Information Service (WWIS) website: http://worldweather.wmo.int/en/home.html]

(a)   (i)   Identify the month with the highest rainfall.   [1]

       (ii)   Estimate the annual temperature range.   [1]

       (iii) Suggest why October is a more challenging month for human activity than June.   [2]

(b)   Explain **two** processes of weathering or erosion that operate in hot, arid areas.   [3+3]

(c)   "All cold extreme environments are equally challenging for human activity."
       Discuss this statement.   [10]

(Option C continues on the following page)

Turn over

(Option C continued)

6. The map shows a polar view of the Southern Hemisphere and locates Antarctica, an area experiencing an extreme environment.
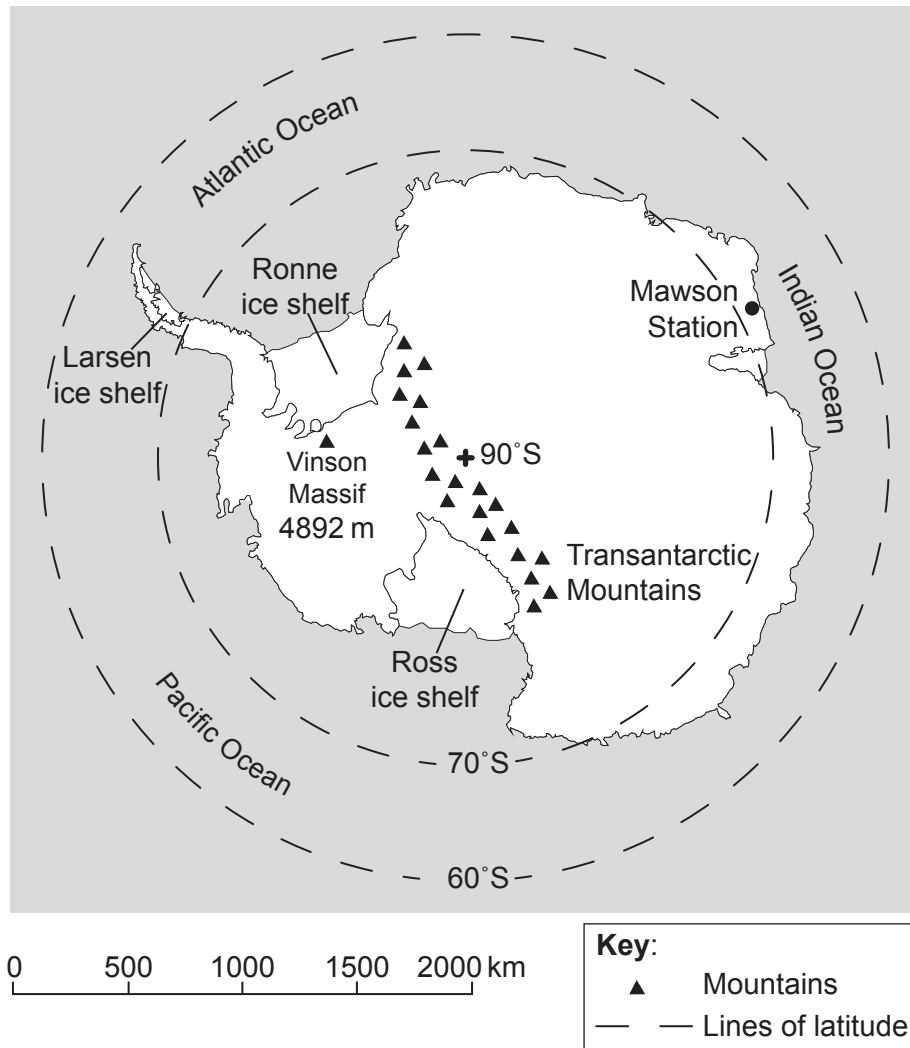
[Source: © International Baccalaureate Organization 2016]

(a) (i) Estimate the distance of Mawson Station from the South Pole. [1]

(ii) Estimate the latitude of the Vinson Massif. [1]

(iii) State **two** reasons why most of Antarctica is covered in ice. [1+1]

(b) Referring to **at least one** example, suggest **three** reasons why mineral extraction has led to the growth of settlements in extreme environments. [2+2+2]

(c) Using located examples, discuss the opportunities and risk associated with the use of irrigation in hot, arid environments. [10]

End of Option C

Option D — Hazards and disasters – risk assessment and response

7. (a) (i) Describe what is meant by the term "drought". [2]

(ii) Outline **one climatic** reason for the occurrence of **one named** drought. [2]

(b) Referring to **either** earthquakes **or** volcanoes, explain **three** reasons why fewer deaths are caused by these hazards than in the past. [2+2+2]

(c) Using located examples, examine why the intensity of hurricanes varies over time. [10]

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

The map shows the impacts of Hurricane Sandy on selected states in the Eastern United States in 2012.

(a) (i) Using map evidence, determine which state was worst affected and outline why. [2]

(ii) Using map evidence, determine which state was least affected and outline why. [2]

(iii) Suggest how land-use planning (zoning) could help reduce vulnerability to hurricanes in this area. [2]

(b) Suggest why the distinction between a hazard event and a disaster is not always completely clear. [4]

(c) Referring to **two or more** types of hazard, examine why the highest magnitude hazard events are not necessarily the most harmful. [10]

End of Option D

Turn over

Option E — Leisure, sport and tourism

9. (a) (i) Describe what is meant by the term "heritage tourism locations".   [2]

(ii) State examples of **two** different kinds of heritage tourism.   [2]

(b) (i) Suggest what is meant by the term "remote tourist destination".   [2]

(ii) Suggest **two** reasons for the growth of tourism in **one named** remote tourist destination.   [2+2]

(c) Evaluate strategies that have been designed to make tourism more sustainable in different environments.   [10]

10. The map shows the distribution of Formula One motor racing tracks in 2015.

Key:
• Formula One motor racing tracks
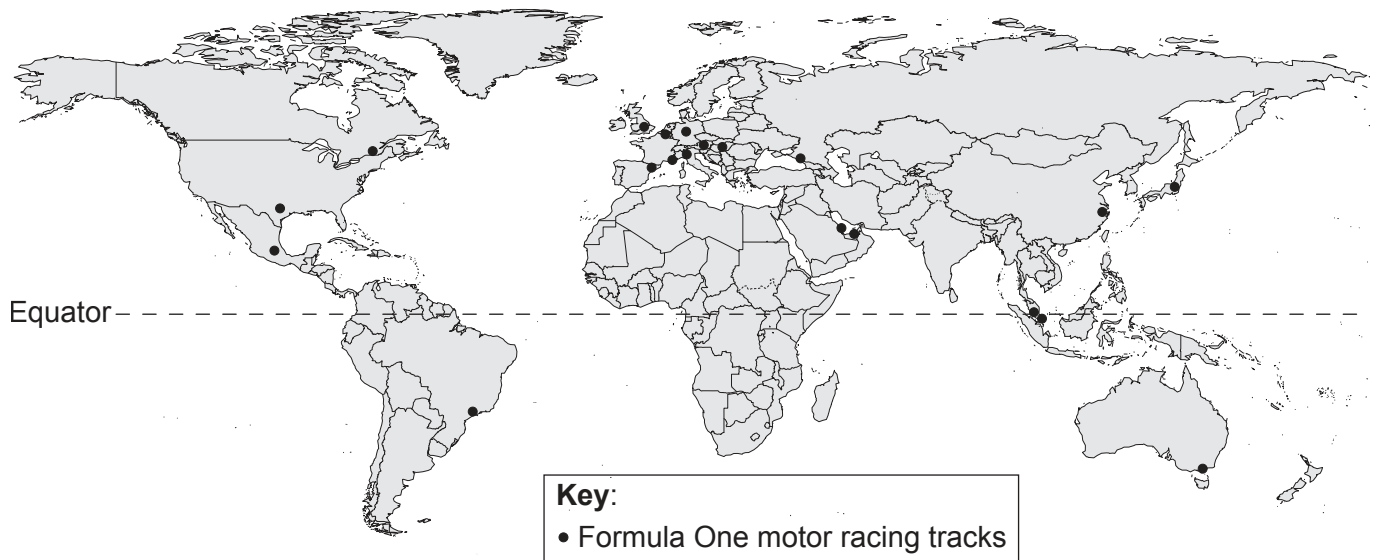
[Source: https://en.wikipedia.org/wiki/List_of_Formula_One_circuits#/media/File:Formula_1_all_over_the_world-2016-new.svg]

(a) Describe the geographical distribution of Formula One motor racing tracks shown on the map.   [4]

(b) Explain **two** reasons for increased global participation in sport.   [3+3]

(c) For **one** national sports league you have studied, examine the relationship between the location of the teams and the residence of its supporters.   [10]

End of Option E

Option F — The geography of food and health

11. (a) (i) Outline what is meant by the term "diseases of affluence". [2]

(ii) Briefly describe the global distribution of diseases of affluence. [2]

(b) Referring to **one named** water-borne or vector-borne disease, distinguish between policies relating to its prevention and policies relating to its treatment. [6]

(c) Examine the effects of transnational corporations (TNCs) and fair trade on the level of sustainability of agriculture. [10]

(Option F continues on the following page)

Turn over

(Option F continued)

12. The graph shows changes in global food production and global yields of food crops from 1980 to 2010.
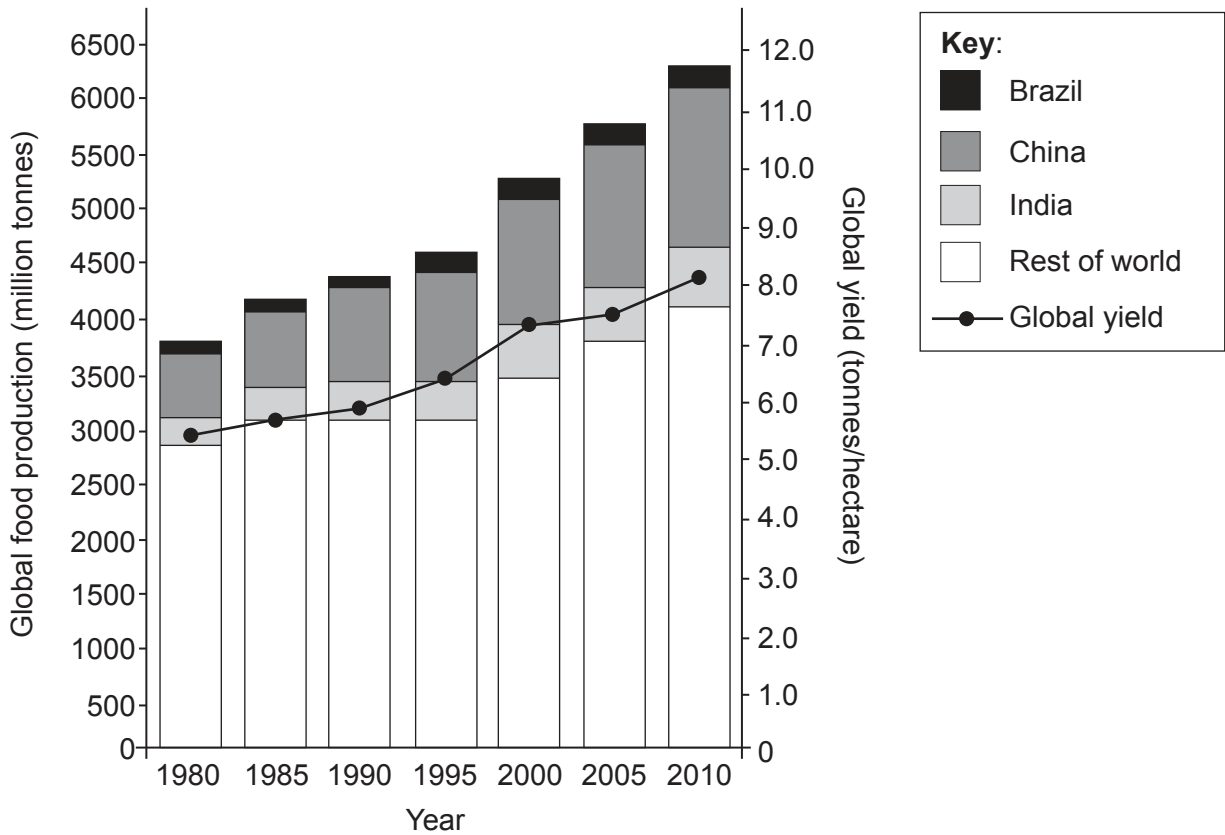

[Source: adapted from Ellen MacArthur Foundation, (2013), *Towards the Circular Economy* **2**, page 22]

(a) (i) Referring to the graph, briefly describe the change in food production in India from 1980 to 2010. [3]

(ii) **Other than** increasing global yield, state **one** reason why global production has increased. [1]

(b) Explain **two** ways in which the yield of some food crops can be increased. [3+3]

(c) Referring to **two** diseases, compare the factors affecting their spread from place to place. [10]

End of Option F

Option G — Urban environments

13. The graph shows the total population living in urban areas of different sizes, between 1970 and 2011.
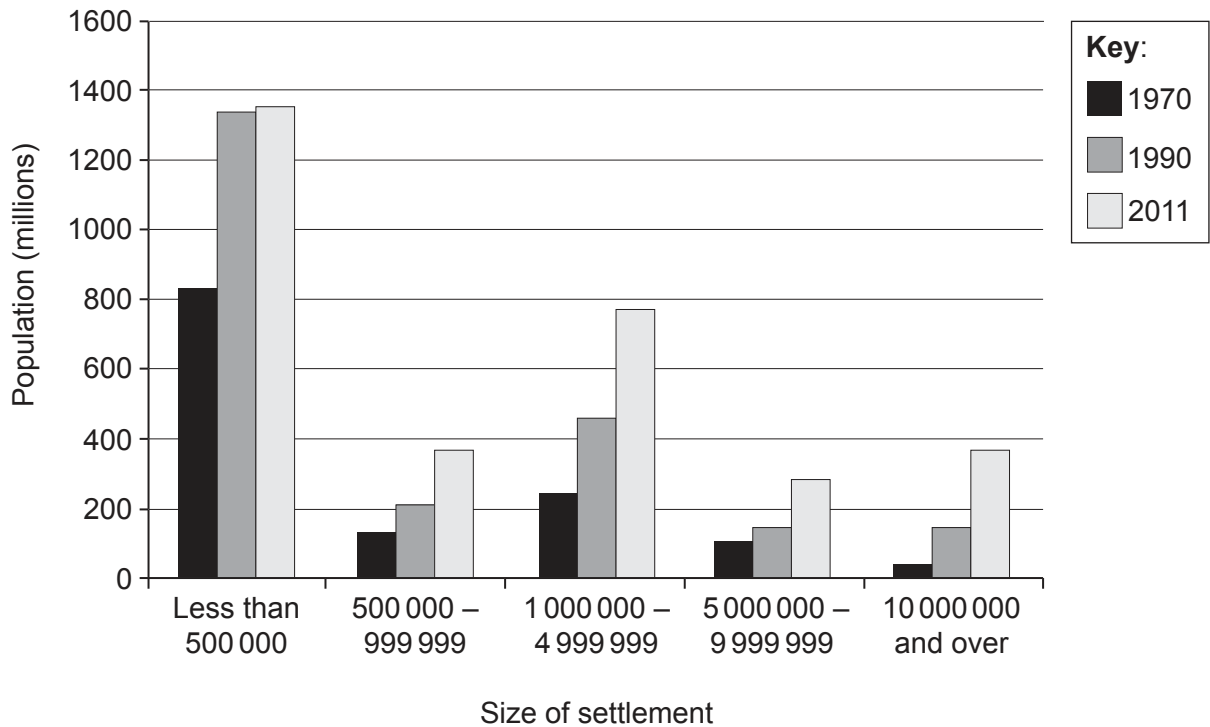
[Source: From UN Department of Economic and Social Affairs (DESA), Population Division (2012) *World Urbanization Prospects*, by Gerhard K. Heilig, © 2012 United Nations. Reprinted with the permission of the United Nations.]

(a) (i) Estimate the number of people worldwide living in megacities (10 000 000 people and over) in 1990. [1]

(ii) Describe changes in the total number of people living in small cities of less than 500 000 people. [3]

(b) Explain **two** characteristics of the distribution of **one named** economic activity within **one named** urban area. [3+3]

(c) "Managing a city sustainably requires a wider range of strategies than those that only limit its ecological footprint." Discuss this statement. [10]

(Option G continues on the following page)

Turn over

(Option G continued)

14.   The graph shows population change in Detroit, a city in the USA.
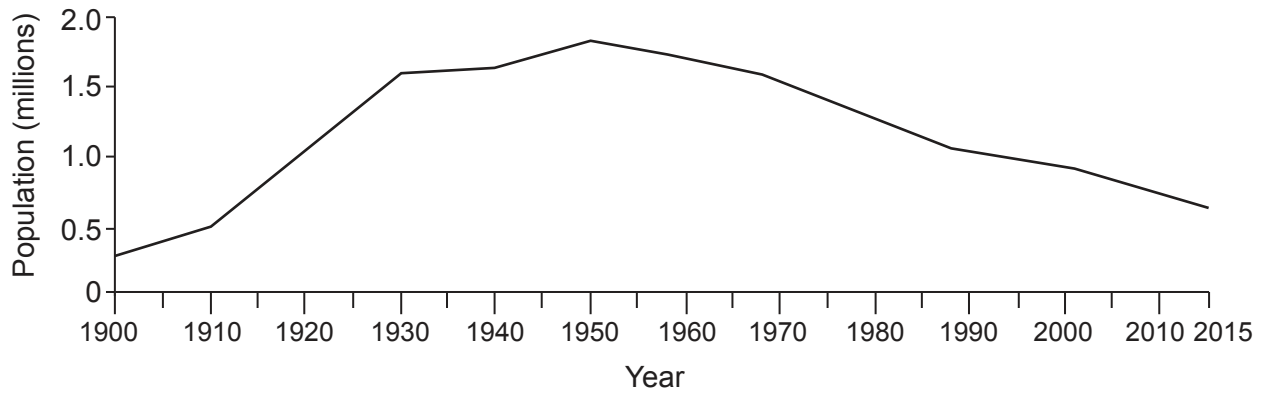
[Source: *The Economist,* July 2013]

(a)   Describe the changes in the size of Detroit's population between 1900 and 2015.   [4]

(b)   Using examples, explain **two** push factors and **one** pull factor that help explain
        counter-urbanization movements.   [2+2+2]

(c)   Using examples, discuss the varied effects of human activity on urban microclimates.   [10]

End of Option G