



22075202

**GEOGRAPHY  
HIGHER LEVEL  
PAPER 2**

Wednesday 9 May 2007 (morning)

2 hours 30 minutes

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**INSTRUCTIONS TO CANDIDATES**

- Do not open this examination paper until instructed to do so.
- Answer four questions:
  - two from Section A;
  - one from Section B;
  - one other from any Section (A, B or C).
- Each question must be selected from a different theme.

### SECTION A

Answer at least **two** questions from this section and each question must be selected from a different theme. (Do not answer both an essay and a structured question on the same theme.)

Case studies and examples should be used to illustrate answers and where appropriate, they should be specifically located. Include well drawn, large, relevant maps, sketches, tables and diagrams as often as applicable.

#### A1. Drainage basins and their management

*Either*

**(a) Essay**

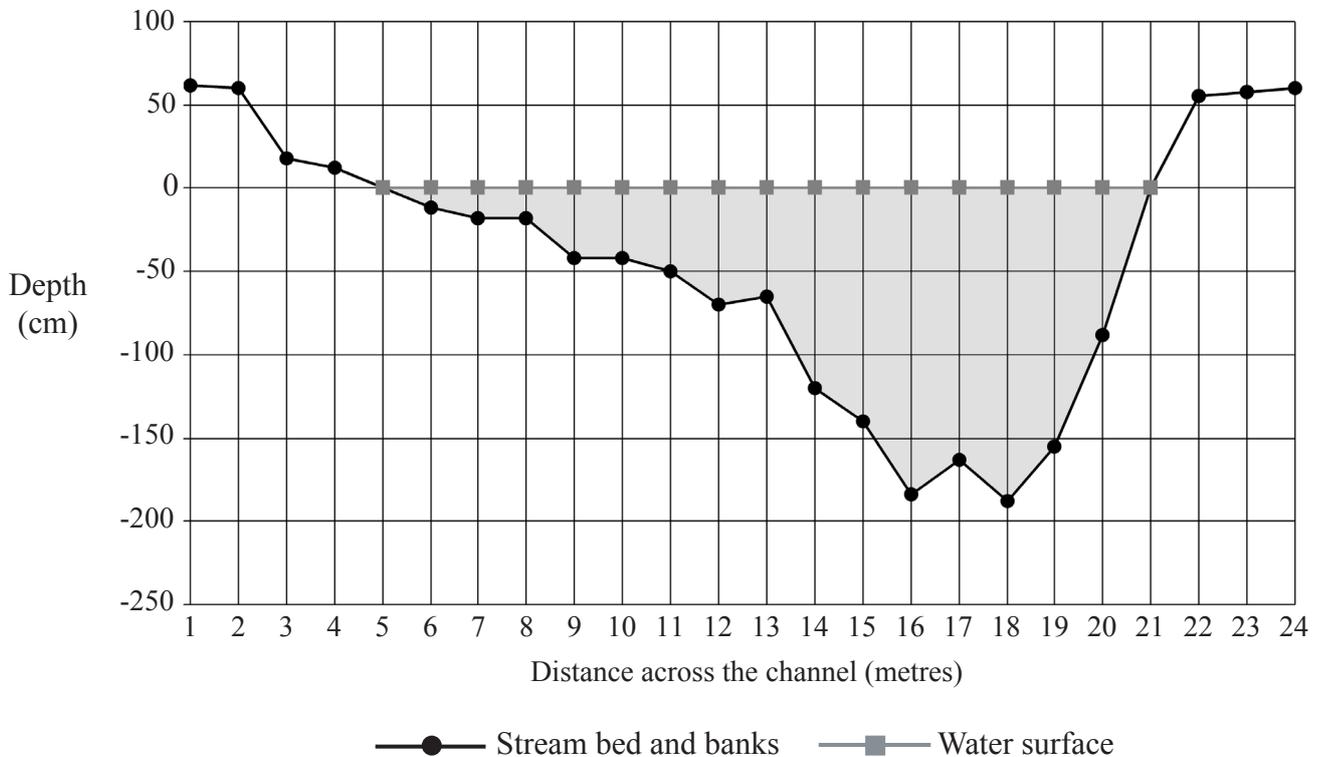
Describe the methods used to control floods on **at least one** named river and evaluate their effectiveness.

[20 marks]

*Or*

**(b) Structured question**

The diagram shows a section drawn across a river.



(This question continues on the following page)

*(Question A1 continued)*

The table gives mean velocity and bedload data for this section.

Distance in metres across the channel	Mean velocity (m/sec)	Mean bedload size (mm)	Description
1	*	*	*
2	*	*	*
3	*	*	*
4	*	*	*
5	0.00	0.4	sand
6	0.12	0.4	sand
7	0.14	0.8	sand
8	0.18	0.8	sand
9	0.24	1.2	gravel
10	0.36	2.4	gravel
11	0.28	1.8	gravel
12	0.34	12.2	pebbles
13	0.42	15.5	pebbles
14	0.52	120.5	cobbles
15	0.74	134.8	cobbles
16	1.22	240.2	cobbles
17	0.94	525.6	boulders
18	1.15	510.2	boulders
19	0.84	404.4	cobbles
20	0.78	70.6	pebbles
21	0.00	28.6	pebbles
22	*	*	*
23	*	*	*
24	*	*	*

\* No data

[Source: Diagram and table constructed using data from a student’s fieldwork notes]

- (i) With reference to the diagram:
  - (a) state the width of the river *[1 mark]*
  - (b) state the maximum depth of the water in the channel at bankfull. *[1 mark]*
  
- (ii) With reference to the diagram and the table, describe and explain the relationship between:
  - (a) depth and velocity *[3 marks]*
  - (b) velocity and bedload size. *[3 marks]*
  
- (iii) Explain how the discharge of a river is calculated. *[2 marks]*
  
- (iv) Describe and explain the changes in discharge, velocity and load that occur between the source and the mouth of a river. *[10 marks]*

**A2. Coasts and their management**

*Either*

**(a) Essay**

Describe and explain the formation and characteristics of coastal landforms that result from changes in the relative levels of land and sea.

*[20 marks]*

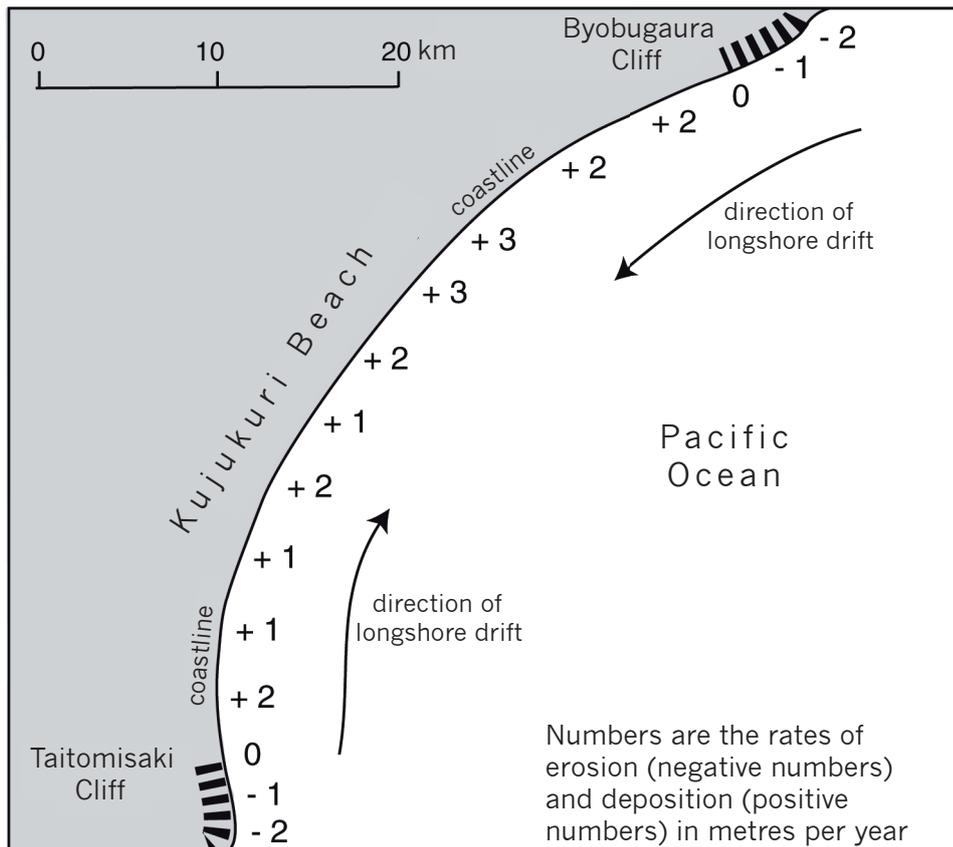
*(This question continues on the following page)*

(Question A2 continued)

Or

(b) Structured question

The map shows rates of coastal erosion and deposition on Kujukuri beach in part of eastern Honshu, Japan, from 1903 to 1965.



[Source: based on Sunamura and Horikawa (1977)]

- (i) Describe the changes in this coastline between 1903 and 1965. [2 marks]
- (ii) Provide **two** possible reasons why some parts of this coast have experienced erosion while others have experienced deposition. [4 marks]
- (iii) Using annotated diagrams, explain the formation and characteristics of swash and drift aligned beaches. [6 marks]
- (iv) Describe the management strategies adopted to stabilize a named coastline and evaluate their effectiveness. [8 marks]

**A3. Arid environments and their management**

*Either*

**(a) Essay**

With reference to examples, explain why desert and semi-desert environments can be difficult to manage.

*[20 marks]*

*Or*

**(b) Structured question**

*If you choose to answer this question refer to the map in the Resources Booklet.*

The map shows the locations of the world's arid and semi-arid environments.

(i) Stating examples, describe the distribution of desert areas (arid environments) shown on the map.

*[4 marks]*

(ii) Select **one** desert area and, with the aid of diagrams, explain the reasons for its aridity.

*[6 marks]*

(iii) Using examples, examine why the demand for water is a major concern in arid **or** semi-arid regions.

*[10 marks]*

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**A4. Lithospheric processes and hazards**

*Either*

**(a) Essay**

Explain how the stability of slopes can be affected by natural and human factors.

*[20 marks]*

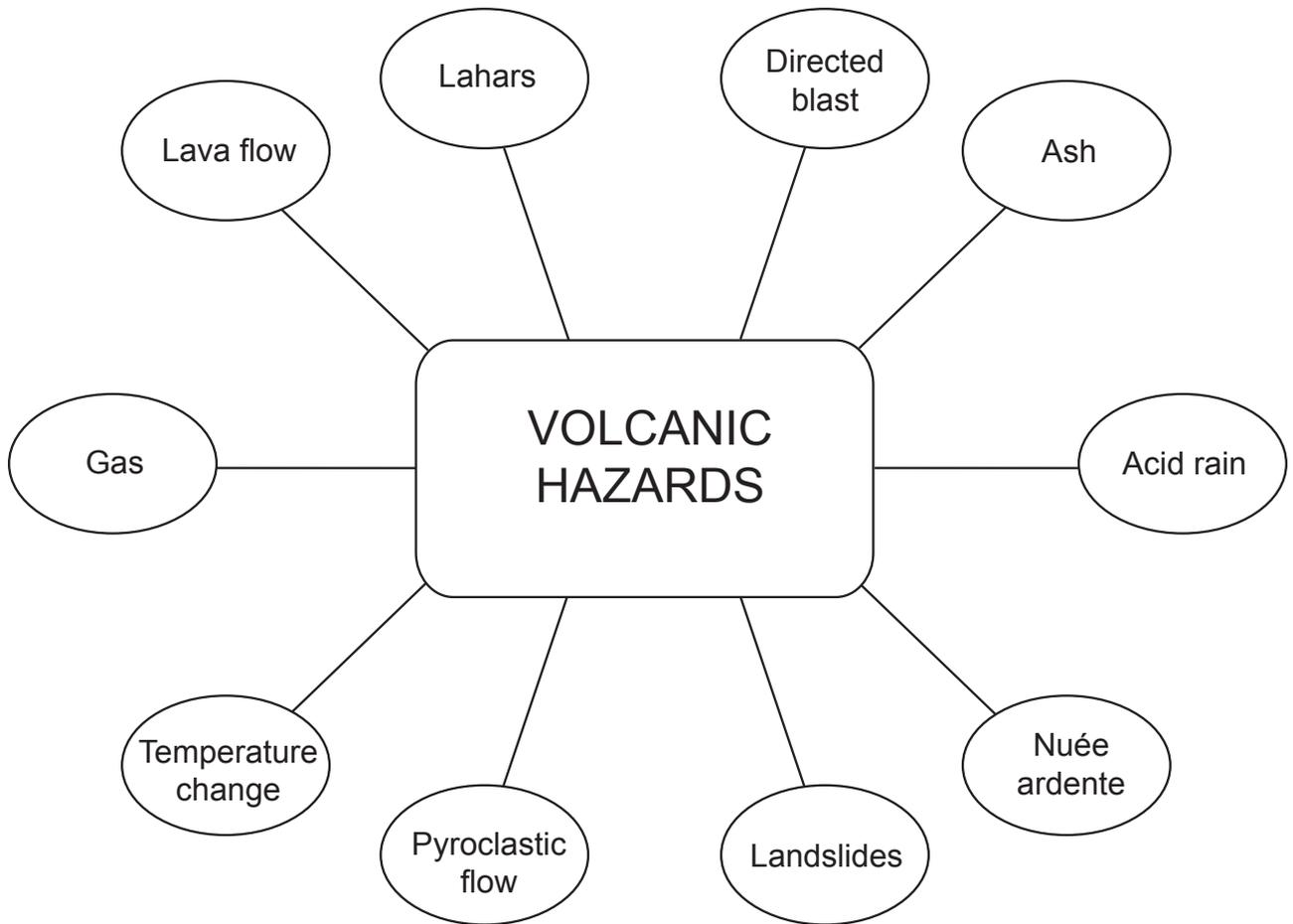
*(This question continues on the following page)*

(Question A4 continued)

Or

**(b) Structured question**

The diagram shows a range of volcanic hazards.



- (i) Briefly explain the difference between primary and secondary hazards. *[2 marks]*
  
- (ii) List **three** primary hazards and **three** secondary hazards shown on the diagram. *[2 marks]*
  
- (iii) Select **one** volcanic hazard and referring to **one or more** examples, describe and explain its effect on people and the environment. *[6 marks]*
  
- (iv) To what extent can the impact of volcanic hazards be reduced? *[10 marks]*

**A5. Ecosystems and human activity**

*Either*

**(a) Essay**

Explain why some ecosystems or biomes are more easily damaged by human activity than others.

*[20 marks]*

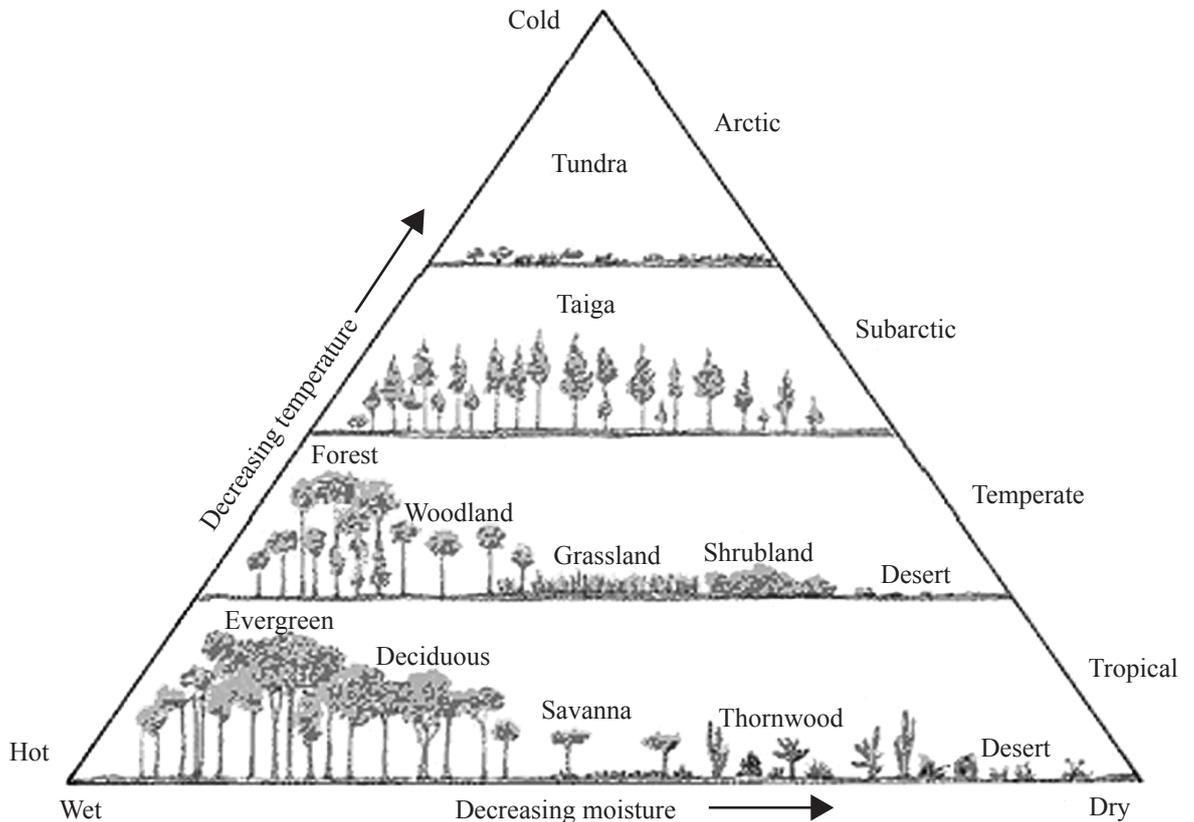
*(This question continues on the following page)*

(Question A5 continued)

Or

(b) Structured question

The diagram shows the relationship between temperature, moisture and the structural characteristics of biomes.



[Source: Arms 1990]

- (i) Define the term *biome*. [2 marks]
- (ii) Referring to examples shown in the diagram, describe the effect of moisture and temperature on vegetation structure. [4 marks]
- (iii) Describe the soil type associated with **one** named biome or ecosystem. [4 marks]
- (iv) Referring to **one** biome or ecosystem of any scale, examine the costs and benefits of conserving it. [10 marks]

**A6. Climatic hazards and change**

*Either*

**(a) Essay**

Assess the impact of human activities on microclimates.

*[20 marks]*

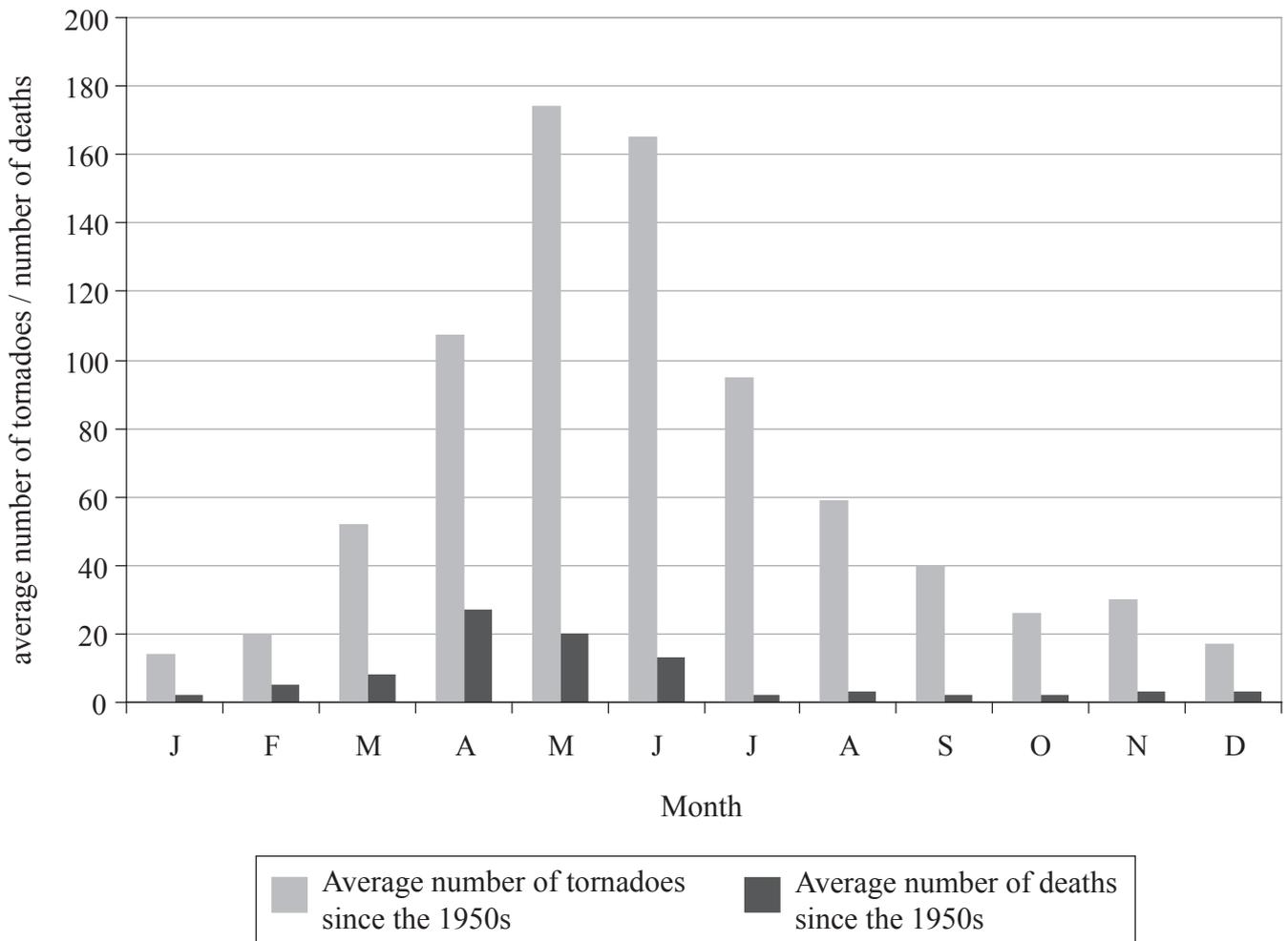
*(This question continues on the following page)*

(Question A6 continued)

Or

**(b) Structured question**

The diagram shows the average number of tornadoes, and the average number of deaths related to tornadoes, month by month, in the USA and Canada since 1950.



[Source: Jacaranda Atlas, the Physical World]

- (i) Describe the trend shown for the average number of tornadoes per month. [2 marks]
- (ii) Suggest why the peak value for deaths does not occur in the same month as the peak value for the number of tornadoes. [3 marks]
- (iii) Explain the formation of tornadoes. [5 marks]
- (iv) Discuss the extent to which humans respond in similar ways to the hazards of tornadoes and tropical cyclones. [10 marks]

## SECTION B

Answer at least **one** question from this section. If more than one question is selected from this section, each must be taken from a different theme. (Do not answer both an essay and a structured question on the same theme.)

Case studies and examples should be used to illustrate answers and, where appropriate, they should be specifically located. Include well drawn, large, relevant maps, sketches, tables and diagrams as often as applicable.

### B7. Contemporary issues in geographical regions

*Either*

**(a) Essay**

“The boundaries between regions are broad areas of transition. As a result, it is inaccurate to represent regional boundaries by lines on maps.” Discuss, with reference to **at least two** regions you have studied.

[20 marks]

*Or*

**(b) Structured question**

*If you choose to answer this question refer to the maps in the Resources Booklet.*

Map 1 shows Australia’s agricultural regions and Map 2 shows its natural vegetation regions.

- (i) State whether the regions shown on Map 1 are *single-feature regions*, *functional regions* or *multi-feature regions*, and justify your decision. [2 marks]
- (ii) Describe the size and distribution of the agricultural regions that lie along Australia’s eastern coast. [5 marks]
- (iii) Examine the extent to which the boundaries of Australia’s agricultural regions are similar to the boundaries of its natural vegetation regions. [5 marks]
- (iv) Using **only** an annotated map, locate and explain the boundaries of your local region. [8 marks]

**B8. Settlements**

*Either*

**(a) Essay**

To what extent can the size and spacing of settlements be explained by central place theory?

*[20 marks]*

*Or*

**(b) Structured question**

*If you choose to answer this question refer to the maps in the Resources Booklet.*

The maps show the ethnic composition in Los Angeles County, USA in 1970 and 2000.

- (i) Describe the changing distribution of and concentration of **two** ethnic groups in Los Angeles County, USA, between 1970 and 2000. *[5 marks]*
- (ii) Explain why social segregation occurs in many large towns and cities around the world. *[5 marks]*
- (iii) Explain the changes in social structure in rural settlements in **either** MEDCs **or** LEDCs in the last 30 years. *[10 marks]*

**B9. Productive activities: aspects of change**

*Either*

**(a) Essay**

Referring to examples, examine the reasons for the shift in manufacturing employment from MEDCs to the newly industrialized countries (NICs).

*[20 marks]*

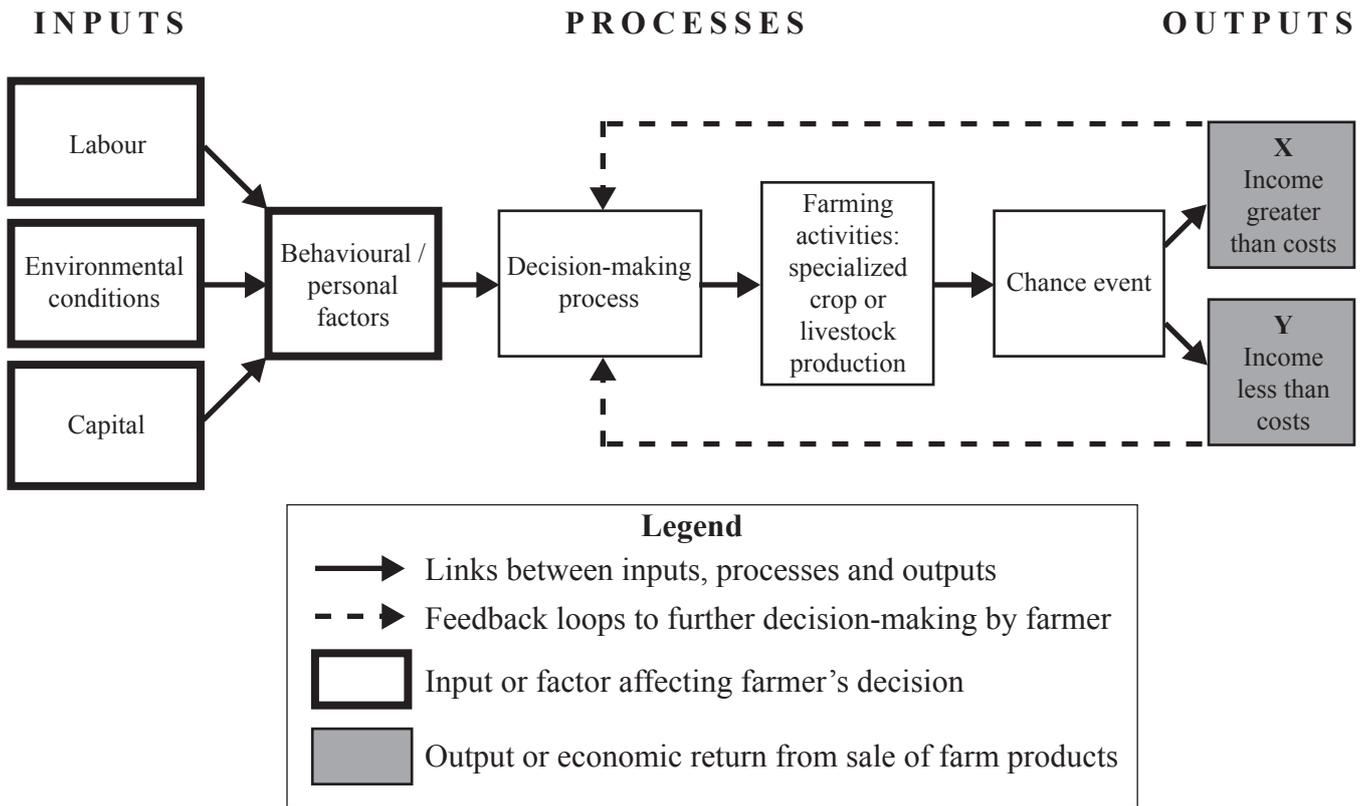
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(Question B9 continued)

Or

**(b) Structured question**

The diagram is a model showing inputs, decision-making processes and outputs in an intensive commercial farming system.



(i) Identify and describe how the following factors, A and B, might affect this farmer's choice of farming activity, and C might affect the output:

- factor A – a positive environmental condition
- factor B – a behavioural factor
- factor C – a negative chance event.

[2+2+2 marks]

(ii) Explain how the farmer might respond to the outputs (outcomes) X and Y.

[2+2 marks]

(iii) Referring to examples, discuss government involvement in agriculture.

[10 marks]

**B10. Globalization**

*Either*

**(a) Essay**

Explain why sustainable tourism is necessary but difficult to achieve, referring to **one or more** examples.

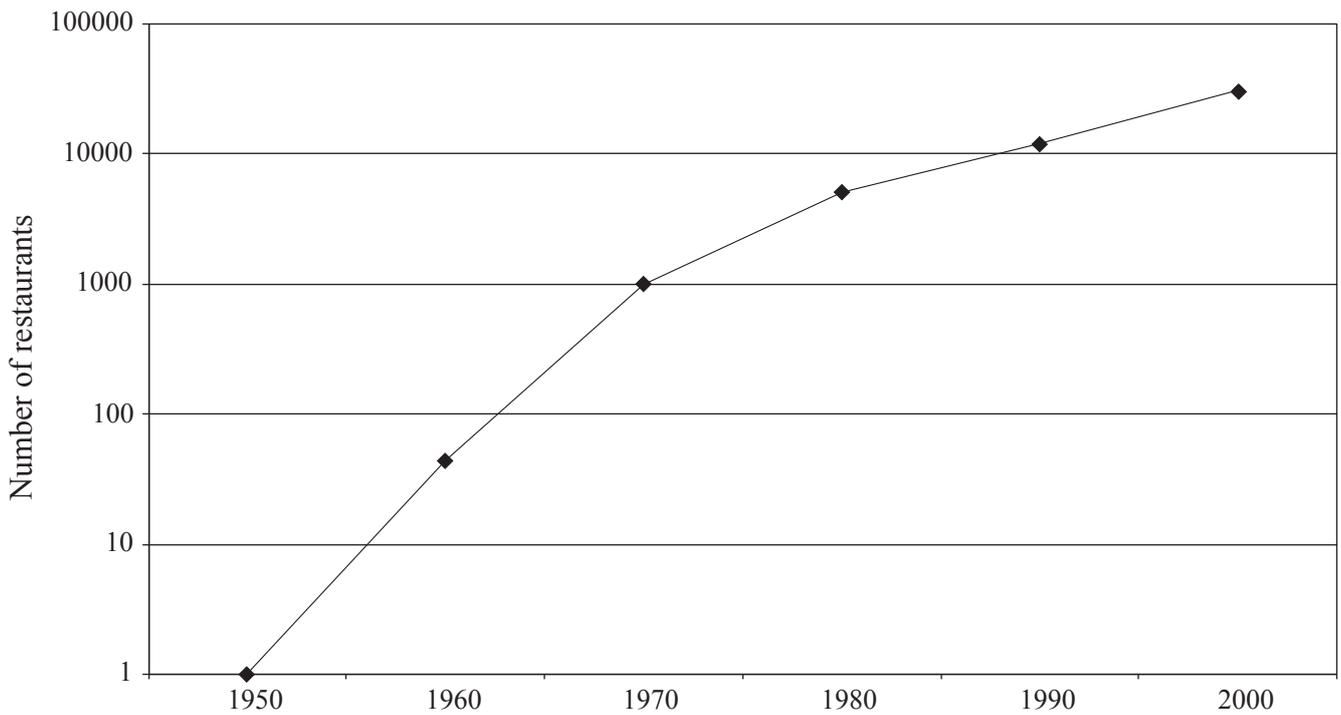
[20 marks]

*Or*

**(b) Structured question**

*If you choose to answer this question refer to the map in the Resources Booklet.*

The graph below shows the growth in the number of McDonald’s restaurants in the world since 1950. The map in the resources booklet shows the current worldwide distribution of McDonald’s restaurants.



[Source: McDonald’s company information]

- (i) Describe the changes in the number of McDonald’s restaurants shown on the graph. [2 marks]
- (ii) Explain the current distribution of McDonald’s restaurants. [3 marks]
- (iii) Examine the reasons for the global spread of transnational corporations. [5 marks]
- (iv) To what extent do transnational corporations benefit LEDCs? [10 marks]

### SECTION C

*If you choose to answer this question, use the topographic map extract and the aerial photograph in the Resources Booklet to answer **all** parts.*

#### **C11. Topographic mapping**

The map extract and the oblique aerial photograph show part of the city of Sydney, the largest city in Australia with a population of four million.

Sydney is the main financial, transport, trade and cultural centre of Australia. It is located on the Parramatta River, which provides the largest natural harbour in the world.

The contour interval of the map extract is 10 metres and the scale of the map extract is 1:25 000.

- (a) Give the six-figure grid reference for Point A on the photograph. *[2 marks]*
  
  - (b) State the length in kilometres of Sydney Harbour tunnel (underwater section **only**). *[2 marks]*
  
  - (c) Compare the advantages of the map and the aerial photograph for showing:
    - (i) communications *[3 marks]*
    - (ii) settlement characteristics. *[3 marks]*
  
  - (d) Describe and explain the type and pattern of land uses along the shoreline. *[10 marks]*
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