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Write your name here

Surname	Other names

Centre Number | Candidate Number

Edexcel IGCSE

Geography

Unit: 4GE0
Paper: 01

Monday 13 June 2011 – Morning
Time: 2 hours 45 minutes

Paper Reference
4GE0/01

Materials required for examination:
Ruler, pencil, pen

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- This paper is arranged in three sections, A, B and C. In Section A, answer TWO questions. In Section B, answer TWO questions. In Section C, answer ONE question.
- Answer the questions in the spaces provided *– there may be more space than you need.*
- Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Information

- The total mark for this paper is 150.
- The marks for **each** question part are shown in brackets *– use this as a guide as to how much time to spend on each question.*
- The following abbreviations are used: LIC – low-income country, MIC – middle-income country, HIC – high-income country, NIC – newly-industrialised country, CBD – Central Business District.

Advice

- Write your answers neatly and in good English.

Turn over ▶

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SECTION A – THE NATURAL ENVIRONMENT AND PEOPLE

Answer TWO questions only from this section.

Put a cross in the box indicating the question you have chosen to answer ☒.
If you change your mind, put a line through the box ☒ and then put a cross in another box ☒.

If you answer Question 1 put a cross in the box ☒ .

1 River environments

(a) Study Figure 1 which shows two storm hydrographs (A and B).

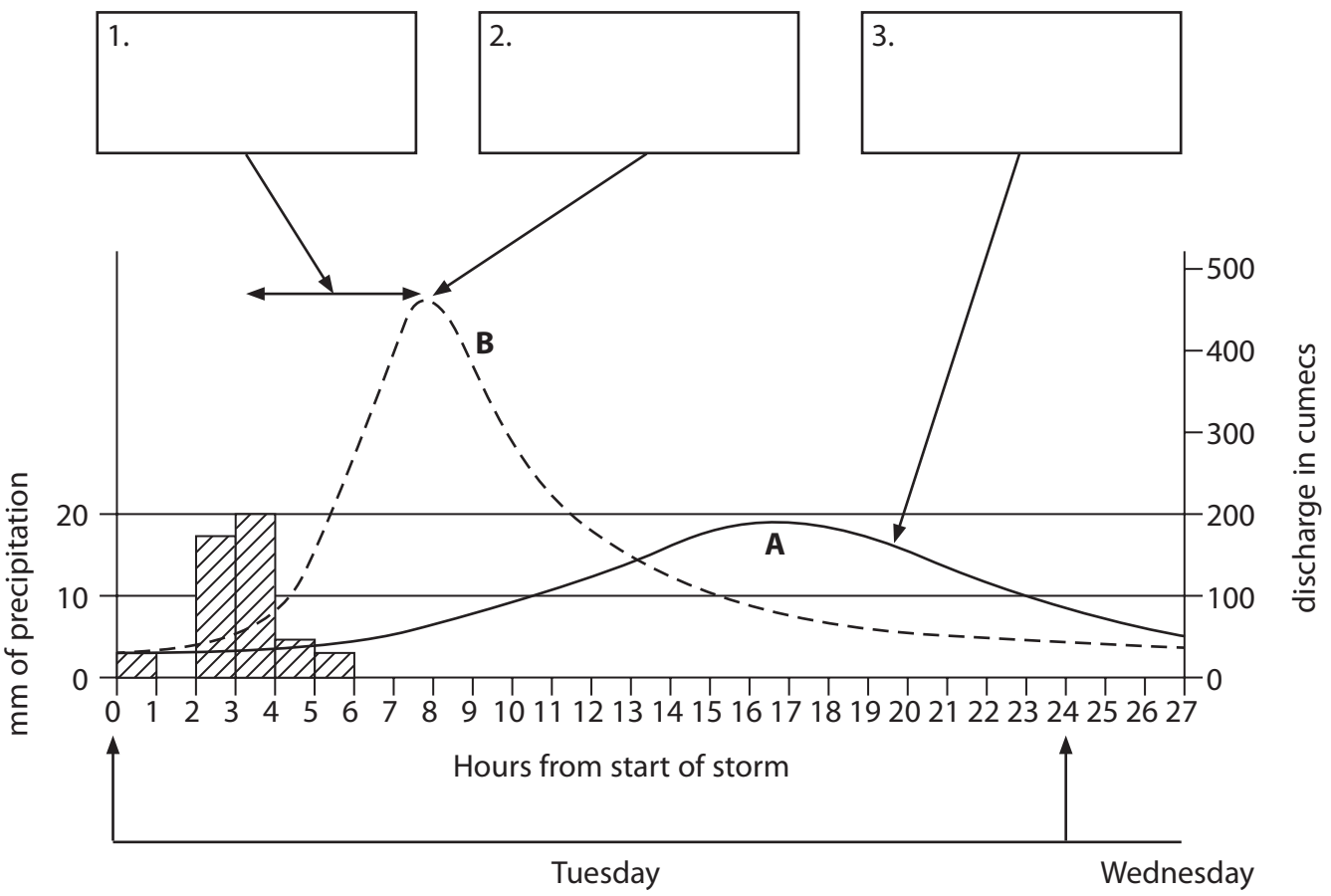

Figure 1

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(i) On Figure 1, draw the precipitation bar for 1 to 2 hours from the start of the storm when 10 mm of rain fell.

(1)

(ii) On Figure 1, complete boxes 1, 2 and 3 by correctly using **three** of the following labels:

peak discharge	lag-time
urban area hydrograph	wooded rural area hydrograph

(3)

(iii) State **two** ways in which hydrograph A differs from hydrograph B.

(2)

1 .....

2 .....

(iv) What is the **discharge** of a river?

(2)

.....

.....

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.....

(v) Describe the fieldwork techniques you would use to collect data about a river's discharge.

(6)

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(b) (i) Give **one** change that flooding brings to a river's valley.

(1)

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(ii) Suggest why flooding is more likely to occur in urban areas than wooded rural areas. Figure 1 may help your answer.

(6)

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(c) With reference to a named river, explain how the threat of flooding has been reduced.

(9)

Name of river: .....

(Total for Question 1 = 30 marks)

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If you answer Question 2 put a cross in the box ☒ .

2 Coastal environments

(a) Study Figure 2a, a sketch map of part of the coastline shown in the photograph, (Figure 2b).

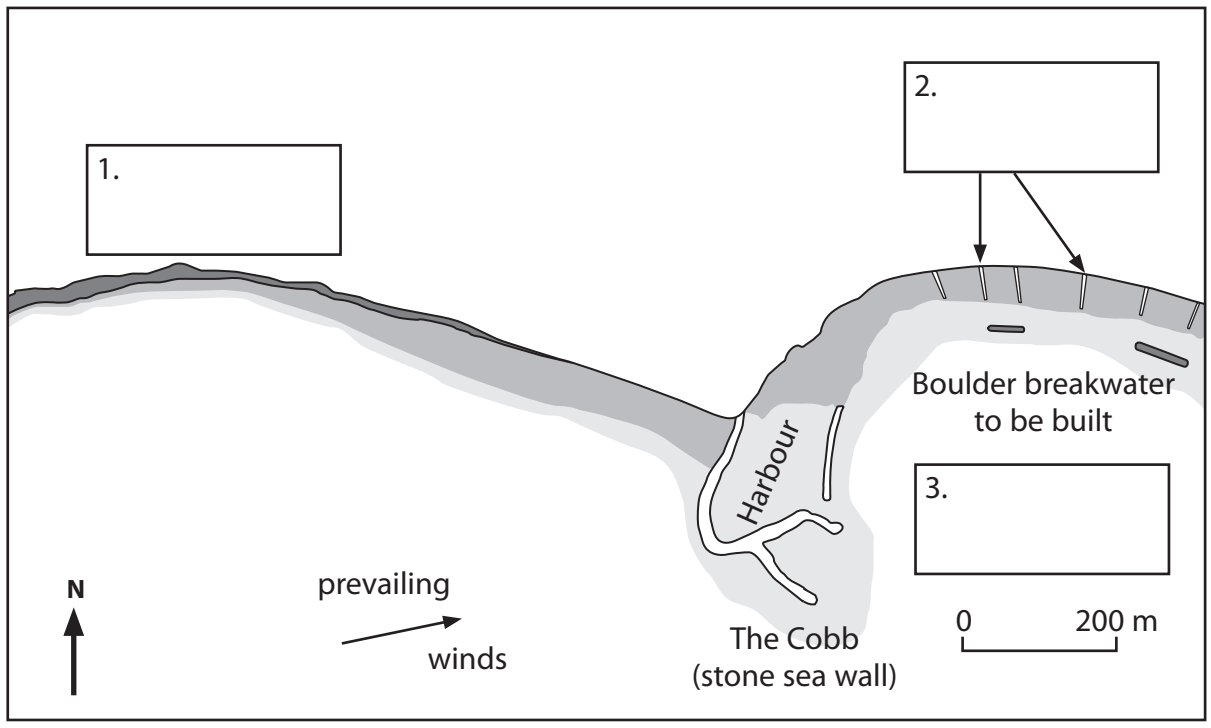

Figure 2a



Figure 2b

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(i) On Figure 2a, complete boxes 1, 2 and 3 by correctly using **three** of the following labels:

sheltered from prevailing sea winds	cliffs
groynes	spit

(3)

(ii) Name a type of coastal landform shown on Figure 2b that was formed by:

(2)

1. erosion

.....

2. deposition

.....

(b) There is longshore drift along the coastline shown in Figure 2b.

(i) What is **longshore drift**?

(2)

.....

.....

.....

.....

(ii) What is the direction of longshore drift along this coastline? Give **one** reason for your answer.

(2)

Direction .....

Reason .....

.....

.....

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(c) (i) Name **two** methods of coastal protection being used along the coastline shown in Figure 2b.

(2)

1 .....

.....

2 .....

.....

(ii) For **one** of these methods, explain how it reduces coastal erosion.

(4)

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(iii) Describe the fieldwork techniques you would use to investigate people's opinions on the coastal protection methods shown in Figures 2a and 2b.

(6)

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(d) Explain how headlands retreat to produce new coastal landforms. One or more diagrams may help your answer.

(9)

(Total for Question 2 = 30 marks)

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If you answer Question 3 put a cross in the box ☒ .

3 Hazardous environments

(a) Study Figure 3 which shows a weather system over the Caribbean Sea.

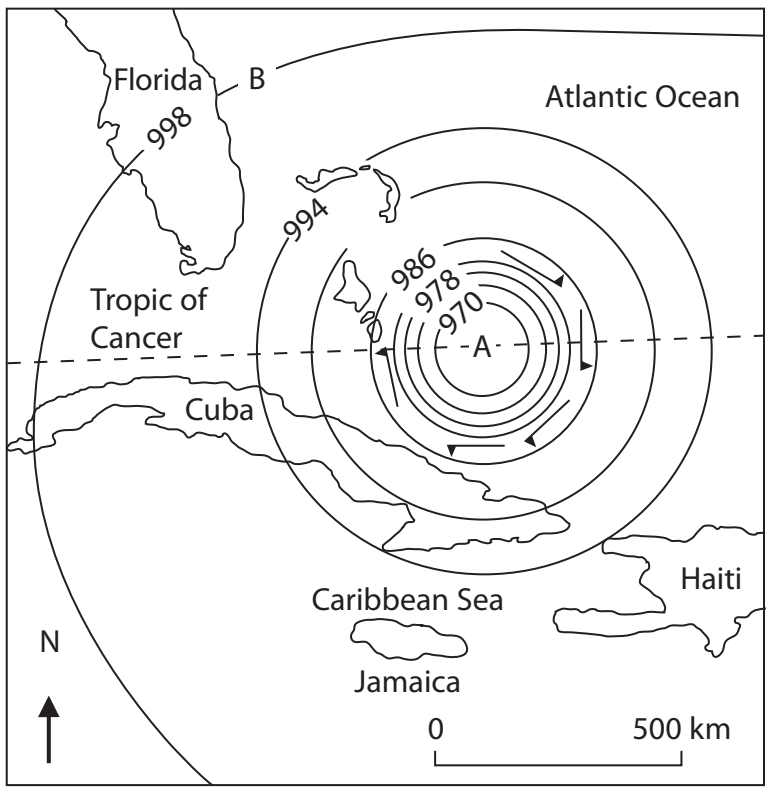

Figure 3

(i) What is the difference in pressure between the centre of the system (A) and at its edge (B)?

(1)

(ii) Which of the following best describes the pressure at the centre of the system? Put a cross in the correct box.

- High ☒
- Medium ☒
- Low ☒

(1)

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(iii) Complete the sentences by filling in the gaps using some of the words in the box.

(2)

eye	typhoon
hurricane	wall

The weather system shown in Figure 3 is known in this part of the world as a ..... . Area A is known as the ..... .

(b) (i) Suggest how the weather in Haiti changed as this weather system passed over the island.

(5)

(ii) Describe how you would collect and record data about the weather in your local area.

(6)

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(c) (i) What is meant by the term **natural disaster**?

(2)

(ii) Suggest how people in LICs might be affected by a weather system such as that shown in Figure 3.

(4)

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(d) Explain how people in HICs predict and prepare for **one** named type of natural hazard.

(9)

Name of natural hazard: .....

(Total for Question 3 = 30 marks)

TOTAL FOR SECTION A = 60 MARKS

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SECTION B – PEOPLE AND THEIR ENVIRONMENTS

Answer TWO questions only from this section.

If you answer Question 4 put a cross in the box ☒ .

4 Economic activity and energy

(a) Study Figure 4a which shows six factors (A to F) which attract high-tech manufacturing industries

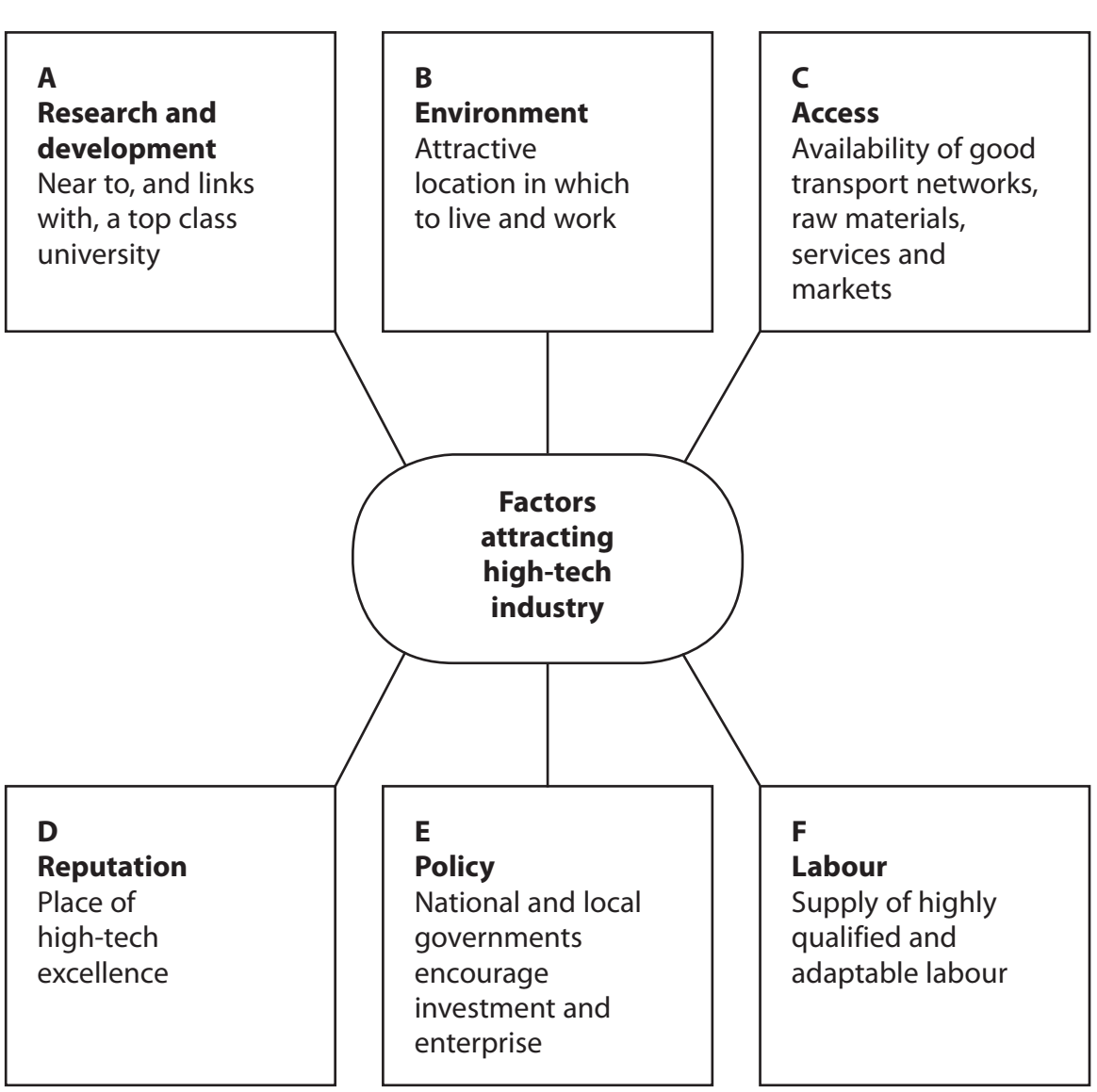

Figure 4a

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(i) Choose the factor (A to F) which each of the following is an example of:

(2)

1. motorway link to an international airport ☐
2. government support for business ☐

Write the appropriate letter, A to F, in each box.

(ii) What are **raw materials**?

(2)

(iii) Manufacturing is part of which of the following employment sectors? Put a cross in the correct box.

(1)

☒ primary

☒ secondary

☒ tertiary

☒ quaternary

(iv) Name a high-tech manufacturing industry.

(1)

(v) Suggest why universities help attract high-tech industry.

(3)

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(b) Study Figure 4b which shows the results of a fieldwork investigation into how the managers of ten factories (A to J) ranked six factors when choosing their present location.

Locational factors	Order of importance (rank) to:										Factor score	Ranking of factor scores
	Food processing factories				Electronics factories			Car component factories				
	A	B	C	D	E	F	G	H	I	J		
Available road transport	4	4	2	4	4	1	1	1	1	1	23	
Closeness to markets	3	2	4	1	3	3	4	2	2	2	26	
Suitable labour at competitive wage rates	5	5	5	6	2	4	2	3	5	4	41	
Suitable buildings and site	6	6	6	5	5	5	5	4	3	3	48	
Nearness to raw materials	1	3	1	2	6	6	6	5	4	5		
Personal reasons	2	1	3	3	1	2	3	6	6	6		

1 = most important factor 6 = least important factor

Figure 4b

(i) Complete Figure 4b.

(2)

(ii) What conclusions can be drawn about the importance of the various locational factors?

(6)

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(c) Describe the factors encouraging the recent growth of tertiary and quaternary activities in HICs.

(4)

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(d) Explain why energy efficiency is becoming so important for many countries.

(9)

(Total for Question 4 = 30 marks)

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If you answer Question 5 put a cross in the box ☒ .

5 Ecosystems and rural environments

(a) Study Figure 5a which represents a rice field (*padi*) as an ecosystem.

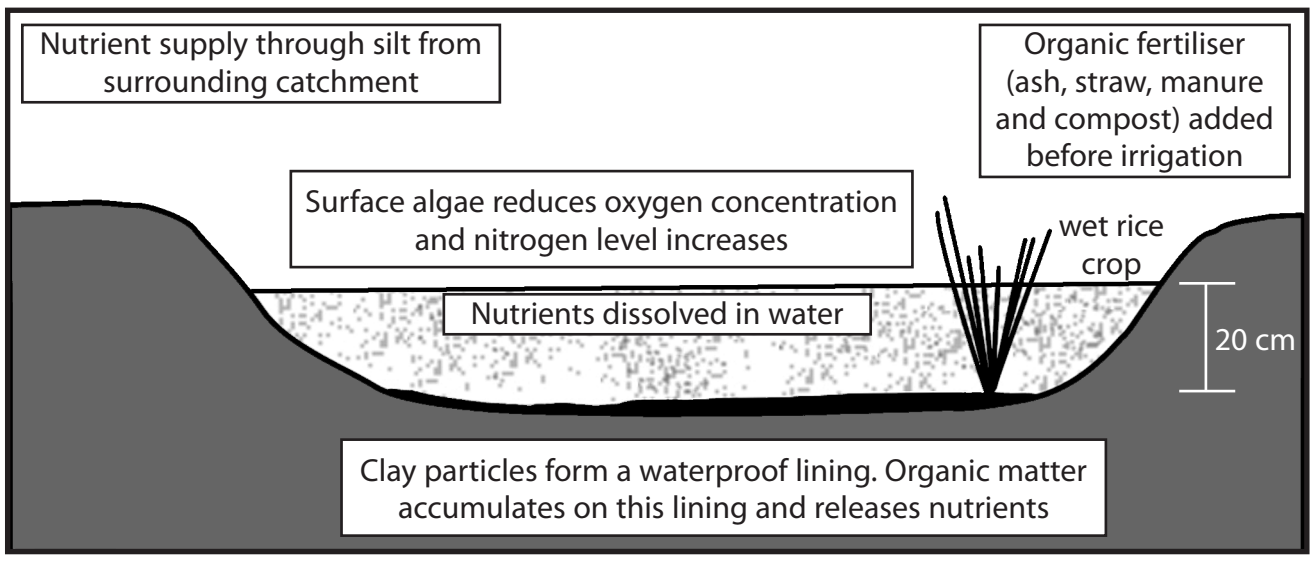

Figure 5a

(i) Which of the following best describes this ecosystem? Put a cross in the correct box.

(1)

☒ small-scale

☒ a biome

☒ natural

(ii) For this ecosystem, name:

1 one input

(1)

2 one output

(1)

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(iii) What is **irrigation**?

(2)

(iv) Identify **two** nutrient movements taking place within this ecosystem.

(2)

1 .....

.....

2 .....

.....

(b) (i) State **two** of the components of a biome or ecosystem.

(2)

1 .....

2 .....

(ii) Describe the link between any **two** components in a temperate grassland biome.

(4)

Components .....

.....

.....

.....

.....

.....

.....

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(c) Study Figure 5b which shows the results of a fieldwork survey of four neighbouring rice farms (A to D) in south-east Asia.

Farm		A	B	C	D
Area of farm (hectares)		1.9	5.2	3.1	2.2
Rice yields (tonnes per hectare)		1.0	3.9	3.2	1.8
Factors influencing yield	Use of irrigation	No	Yes	Yes	Yes
	Use of fertilisers / pesticides	No	Yes	Yes	No
	Use of machinery	No	Yes	Yes	No
	Use of HYV seeds	No	Yes	No	No
	Rice is dominant crop	No	Yes	Yes	Yes
	Total number of yield-influencing factors	0	5		

Figure 5b

(i) Complete Figure 5b.

(1)

(ii) Plot the yield influencing factors for the four rice farms in Figure 5b on the graph, Figure 5c.

(3)

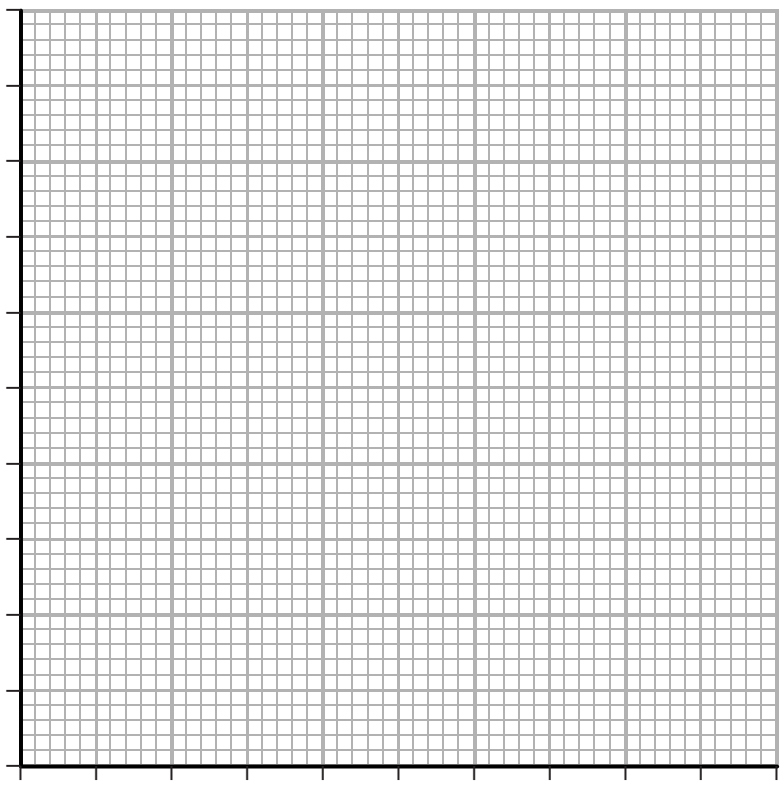

Figure 5c

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(iii) Draw **two** conclusions from the evidence in Figures 5b and 5c.

(4)

1 .....

.....

.....

.....

2 .....

.....

.....

.....

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(d) For a named country, describe the ways in which agricultural production has been increased.

(9)

Named country: .....

(Total for Question 5 = 30 marks)

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If you answer Question 6 put a cross in the box ☒ .

6 Urban environments

(a) Study Figure 6a which shows some developments taking place on the edge of the city of Oxford, UK.

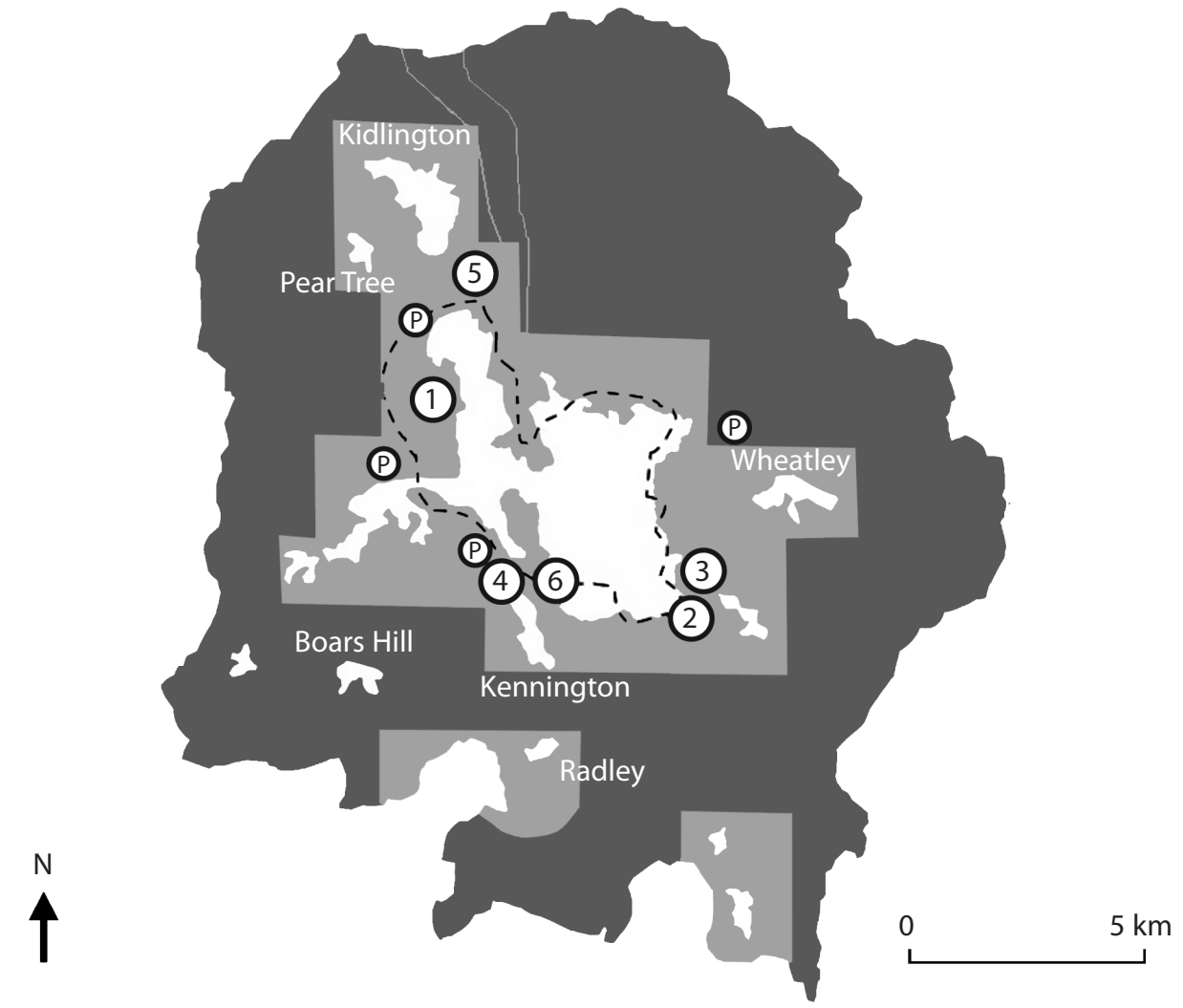

Figure 6a

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(i) Name **one** location on the edge of the city of Oxford.

(1)

(ii) Describe the changes in land use taking place on the edge of the city.

(3)

(iii) These changes have a number of effects. State:

(2)

1 one positive effect

2 one negative effect.

(iv) Give reasons for the changes taking place **on the edge** of many HIC cities such as Oxford.

(4)

(b) Suggest how the use of **brownfield** sites may help reduce development pressures on the edges of HIC cities.

(3)

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(c) Study Figure 6b which shows the results of a land use and environmental quality survey along a transect running from the CBD to the outer suburbs of a city.

Data collection site		1	2	3	4	5	6
Land use		Retailing	Offices	Car parking / derelict land	Terrace housing and flats	Large detached housing	New housing estate
Location		CBD	CBD	Inner city	Inner city	Suburban	Suburban
Environmental Quality scores	Street cleanliness	3	5	1	2	3	4
	Exterior appearance	5	5	2	3	4	5
	Empty buildings / vacant land	4	4	1	3	4	5
	Total score for site	12	14	4	8		

Scores run from 1 to 5 with 5 = clean streets, attractive buildings, all premises occupied.
1 = dirty streets; poorly maintained buildings; empty buildings and derelict land.

Figure 6b

(i) Complete Figure 6b.

(1)

(ii) Plot the Environmental Quality scores for the six sites in Figure 6b on the graph, Figure 6c.

(3)

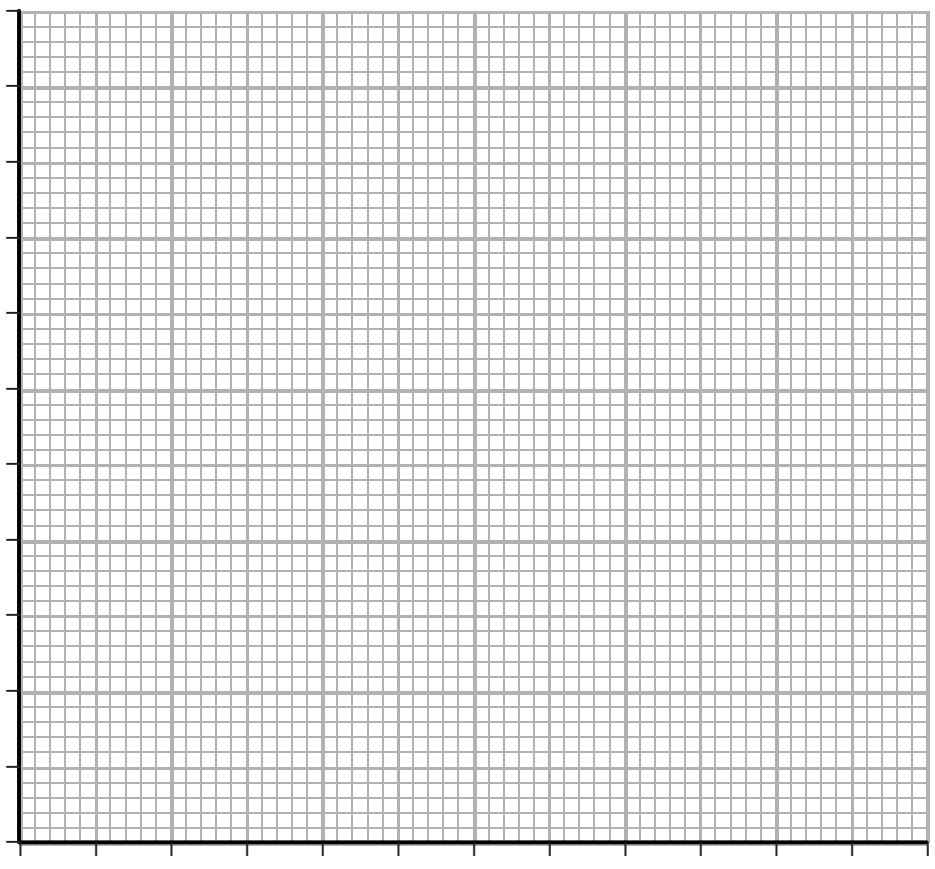

Figure 6c

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(iii) What conclusions can be drawn from the evidence in Figures 6b and 6c?

(4)

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(d) For a named city in an LIC, explain the management strategies being used to minimise the problems of its shanty towns (squatter communities).

(9)

Name of city: .....

(Total for Question 6 = 30 marks)

TOTAL FOR SECTION B = 60 MARKS

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SECTION C – GLOBAL ISSUES

Answer ONE question only from this section.

If you answer Question 7 put a cross in the box ☒ .

7 Fragile environments

(a) Study Figure 7 which shows how the environment of an area changed between 1990 and 2010.

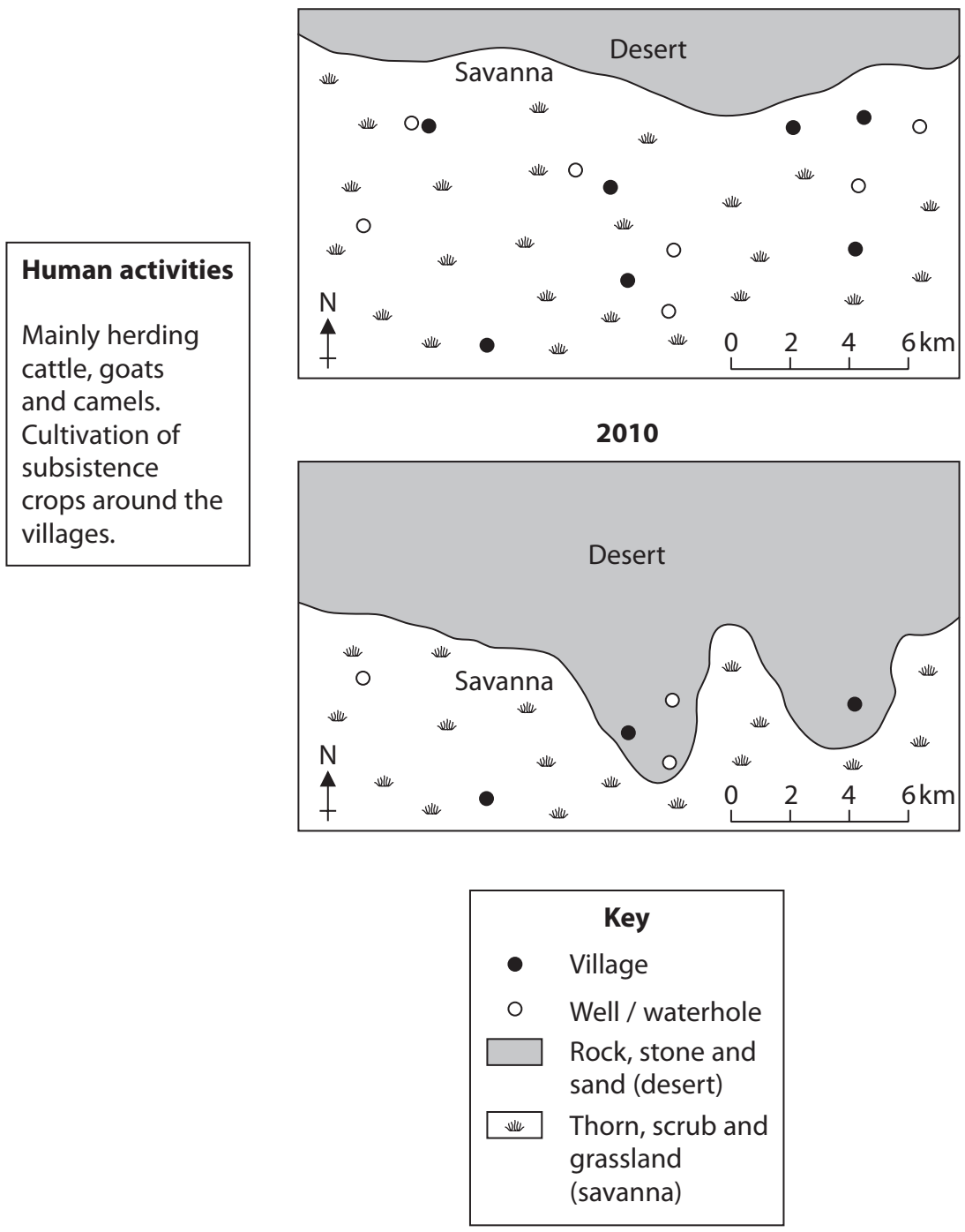

Figure 7

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(i) What term best describes the process of change in this area (Figure 7)?
Put a cross in the correct box.

(1)

- ☒ afforestation
- ☒ desertification
- ☒ globalisation
- ☒ pollution

(ii) Describe the settlement changes that took place between 1990 and 2010.

(2)

(iii) Identify a part of the world where these changes are happening.

(1)

(iv) For the location named in (a) (iii), explain how human activities are contributing to these changes.

(5)

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(b) (i) What is meant by **deforestation**?

(2)

(ii) Describe **two** consequences of deforestation.

(4)

1

2

(c) Describe the main causes of global warming and climate change.

(6)

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(d) Describe efforts being made to slow the progress of global warming and climate change.

(9)

(Total for Question 7 = 30 marks)

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If you answer Question 8 put a cross in the box ☒ .

8 Globalisation and migration

(a) Study Figure 8 which shows changes in the population of the UK between 2002 and 2008.

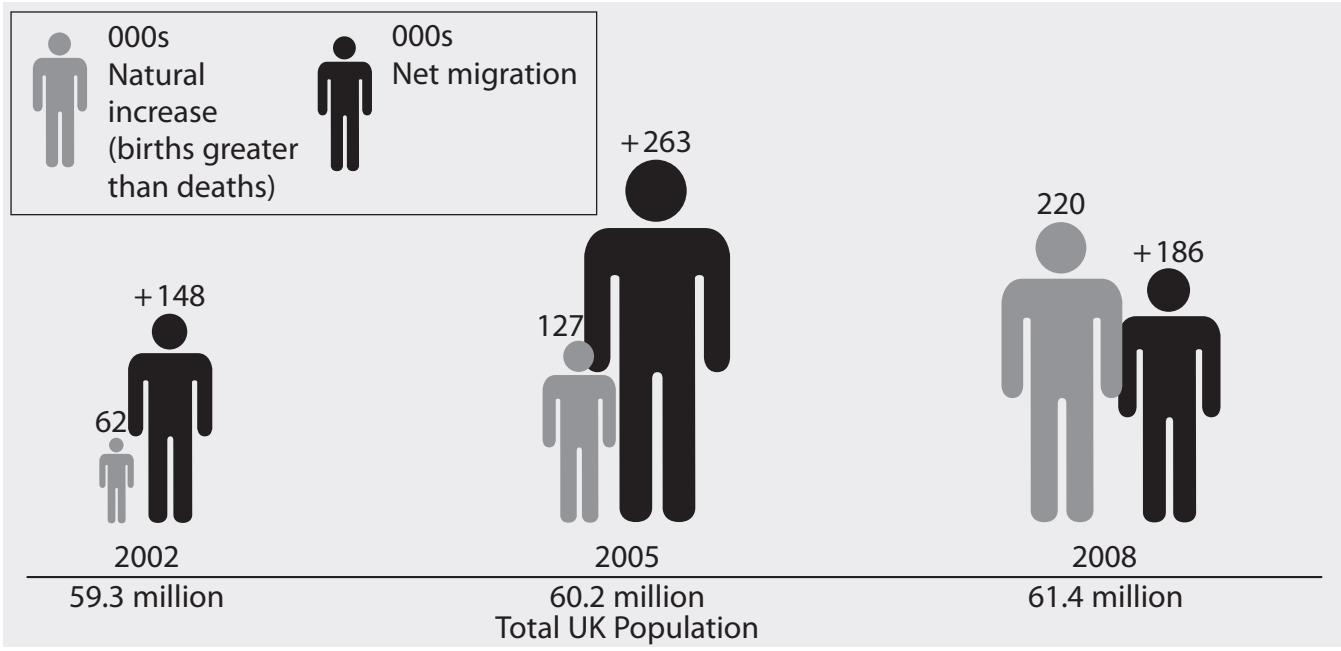

Figure 8

(i) In which year was net migration highest?

(1)

(ii) What is **net migration**?

(2)

(iii) How did the Total UK population change between 2002 and 2008?

(1)

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(iv) Describe how the contribution of net migration to total population changed between 2002 and 2008.

(3)

(b) Describe the main push and pull factors that result in positive net migration in some HICs, such as the UK.

(6)

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(c) (i) What is the **global economy**?

(2)

(ii) What role do transnational companies (TNCs) play in the global economy?

(6)

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(d) Explain the rise in global tourism.

(9)

(Total for Question 8 = 30 marks)

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If you answer Question 9 put a cross in the box ☒ .

9 Development and human welfare

(a) Study Figure 9 which gives information about the HDI and how development varies between selected countries.

HDI range	Level of human development	Selected countries	HDI	per capita GDP
0 to 0.49	Low	Afghanistan	0.35	$461
		Guinea	0.43	$418
0.5 to 0.79	Medium	India	0.61	$1033
		Vietnam	0.72	$1052
0.8 to 1.0	High	Singapore	0.94	$34340
		Norway	0.97	$76692

Figure 9

(i) What does **HDI** stand for?

(1)

.....

(ii) The HDI is calculated using three development indicators. Name **one**.

(1)

.....

(iii) Complete the sentences by filling in the gaps using the words in the box.

social indicators quality of life

economic development

(2)

GDP measures .....

whereas HDI uses .....

to measure ..... .

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(iv) Identify the evidence in Figure 9 that:

(5)

1 HDI and per capita GDP are linked

2 countries can have a similar HDI but a very different per capita GDP.

(b) Describe how the quality of life in a high HDI country, such as Singapore, differs from that in a low HDI country, such as Guinea.

(6)

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(c) Describe how the global pattern of development is changing.

(6)

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(d) Explain how disparities in development and quality of life are being reduced.

(9)

(Total for Question 8 = 30 marks)

TOTAL FOR SECTION C = 30 MARKS
TOTAL FOR PAPER = 150 MARKS

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