



Coimisiún na Scrúduithe Stáit State Examinations Commission

LEAVING CERTIFICATE EXAMINATION, 2013

GEOGRAPHY – HIGHER LEVEL

FRIDAY, 7 JUNE – MORNING, 9.30 - 12.20

Examination Number

For the Examiner's Use Only

Part One Short-Answer Questions	Total Mark	Adv. Ex.	App. Ex.	App. Adv.
Question 1				
Question 2				
Question 3				
Question 4				
Question 5				
Question 6				
Question 7				
Question 8				
Question 9				
Question 10				
Question 11				
Question 12				
Accumulated Mark				
Disallowed Marks				
Net Mark				

Note: Remember to return this paper with your answer book.

Otherwise, marks will be lost.

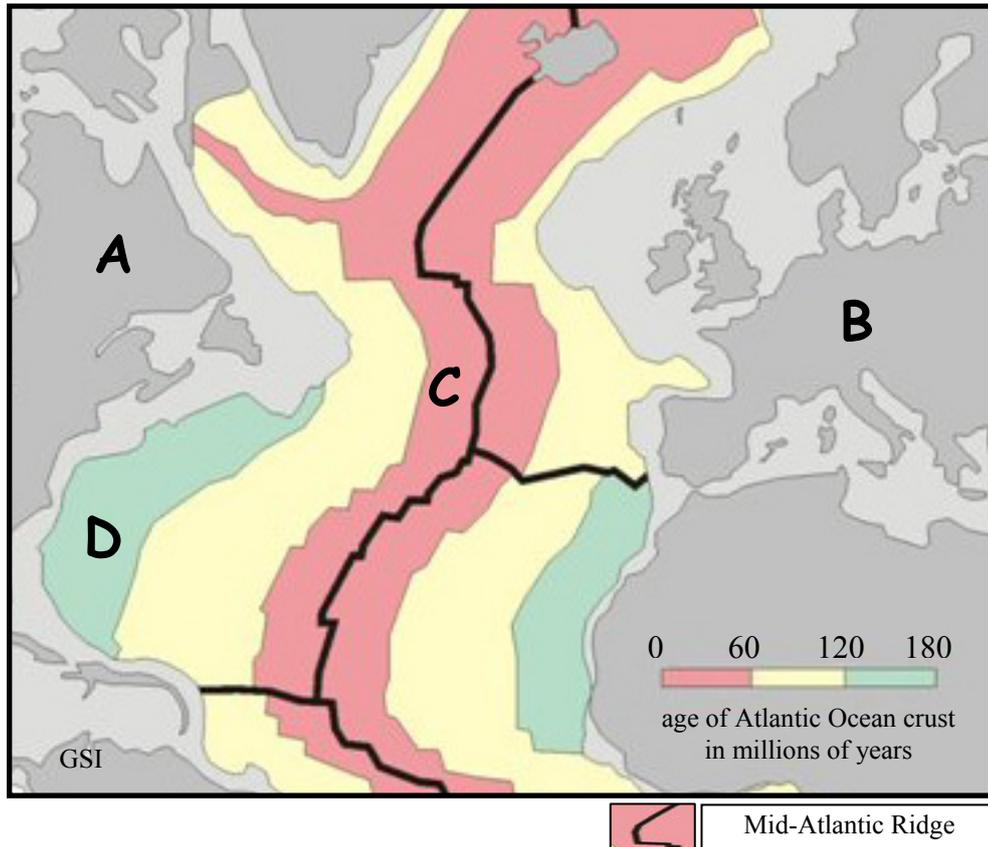
PART ONE – SHORT-ANSWER QUESTIONS – 80 MARKS

Attempt **TEN** questions.

All questions carry equal marks.

THESE QUESTIONS ARE TO BE ANSWERED IN THE SPACES PROVIDED

1. Plate Tectonics



Examine the map above and answer the following questions.

- (i) Name the plate at **A** and the plate at **B**.

A _____ **B** _____

- (ii) Name the type of igneous rock most frequently found at **C**. _____

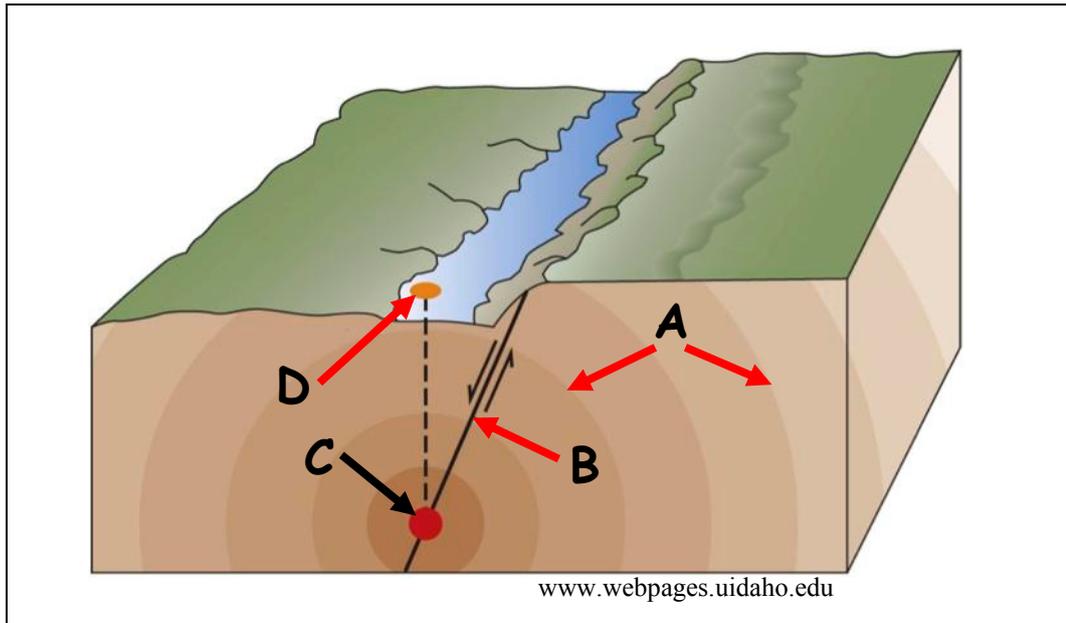
- (iii) State the age range of the ocean crust at **C** and the age range of the ocean crust at **D**.

C _____ **D** _____

- (iv) Explain briefly why the ocean crust at **D** is older than the ocean crust at **C**.

[8m]

2. Earthquakes



- (i) Match each of the letters **A**, **B**, **C** and **D** on the above diagram with the correct feature in the table below.

Feature	Letter
Focus	
Epicentre	
Seismic waves	
Fault line	

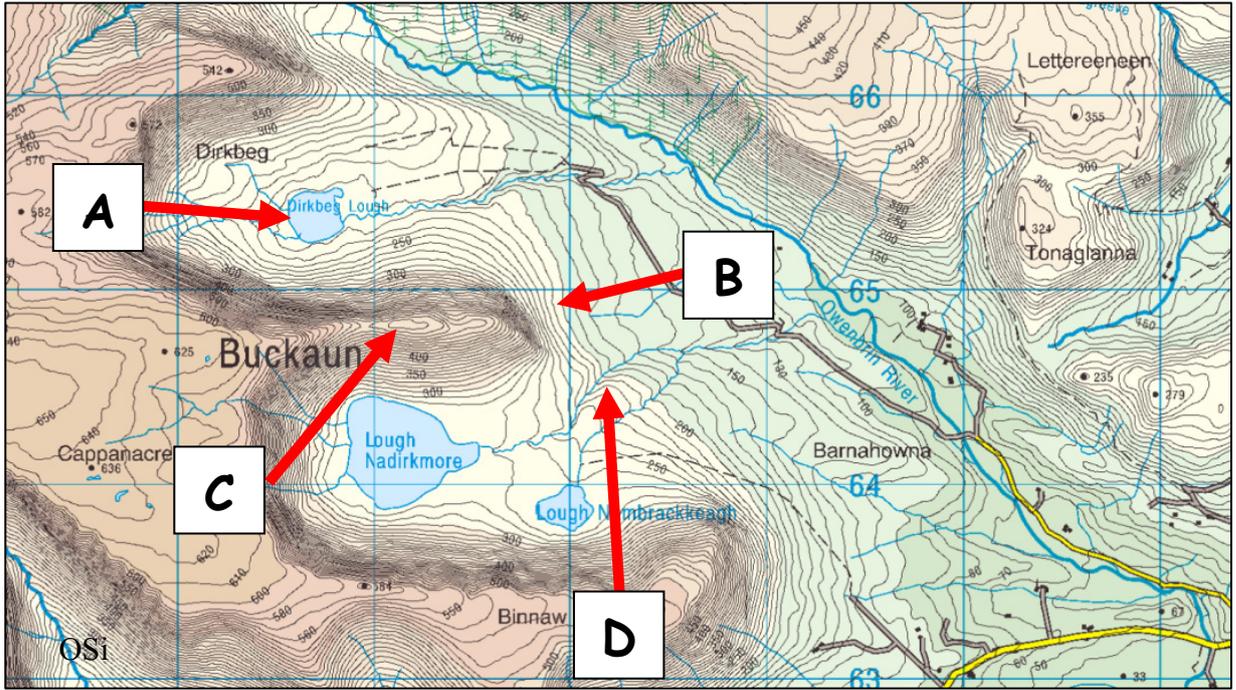
- (ii) Explain briefly each of the following terms.

Seismologist _____

Seismometer _____

[8m]

3. Glaciation



- (i) Examine the Ordnance Survey extract above and match each of the letters A, B, C and D with the correct feature in the table below.

Feature	Letter
Hanging valley	
Arête	
Tarn	
Truncated spur	

- (ii) Explain briefly each of the following terms.

Plucking _____

Abrasion _____

[8m]

4. Physical Features and Processes



Examine the photographs and answer each of the following questions in the table below.

- (i) Insert the letter which best matches each of the photographs with its correct description.
- (ii) Insert the correct process from the following list, which best matches the process at work in each of the photographs:
- Air pressure
 - Freeze thaw action
 - Attrition
 - Soil creep.

Description of Photograph	(i) Letter	(ii) Process at Work
Scree		
Pebble beach		
Blow hole		
Terracettes		

[8m]

5. Ordnance Survey Map

Using the 1:50000 Ordnance Survey map and legend that accompany this paper, write the correct answer for each of the following questions.

- (i) Name and give a six-figure grid reference for an antiquity built by the Normans.

Name _____ Grid reference _____

- (ii) Name and give a six-figure grid reference for the highest point on the map.

Name _____ Grid reference _____

- (iii) Calculate the area of the map which is west of easting T 00.

- (iv) Name **two** ways that height is shown on an Ordnance Survey map.

1. _____ 2. _____

[8m]

6. Aerial Photograph and Ordnance Survey Map

Using the aerial photograph, the 1:50000 Ordnance Survey map and legend that accompany this paper, write the correct answer for each of the following questions.

- (i) In which direction was the camera pointed when the aerial photograph was taken?

- (ii) Name the main road in the centre background of the aerial photograph.

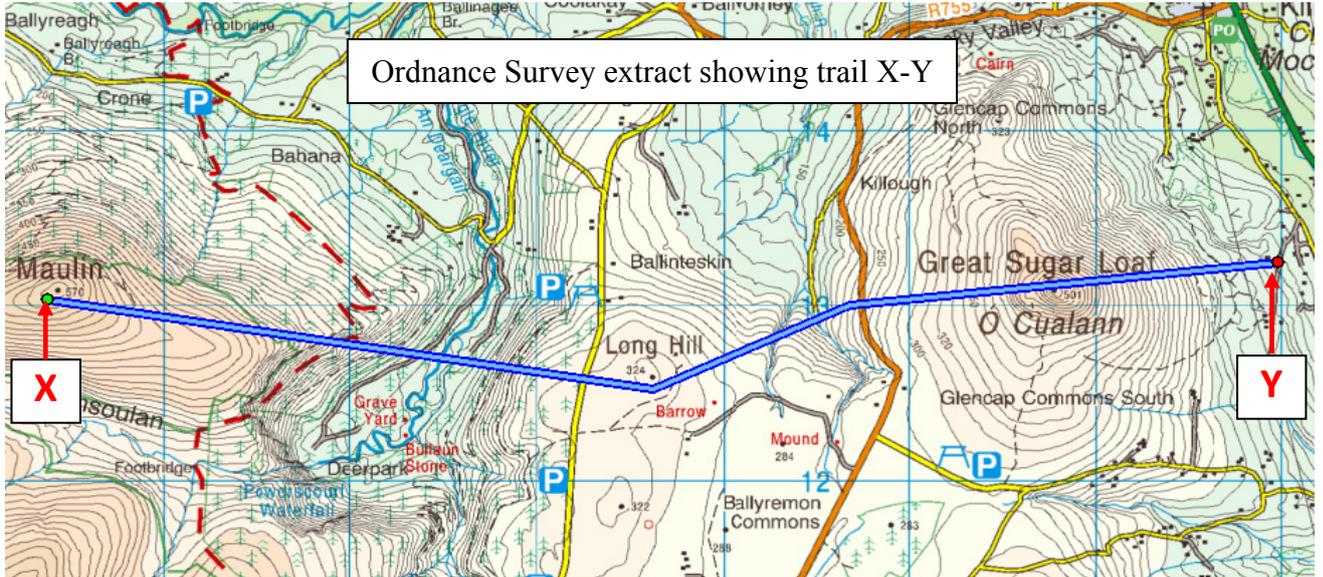
- (iii) The railway station is shown on the Ordnance Survey map at S 974 402. Using accepted notation (right background, etc.) state the location of the railway station shown on the aerial photograph.

- (iv) Explain briefly why there is an absence of settlement in the area to the right of the river in the centre of the aerial photograph.

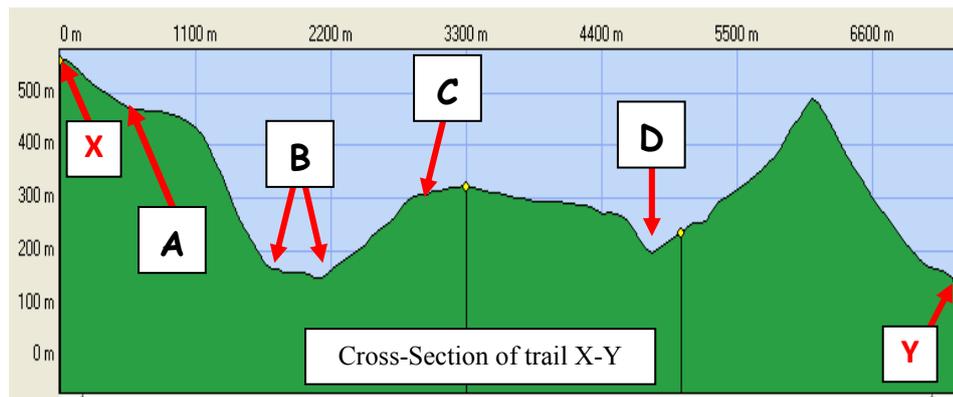
[8m]

7. Map Skills – Cross-Section

The blue line indicates the location of a trail X-Y on the Ordnance Survey extract below. A cross-section of the trail X-Y is also shown.



Trail Master



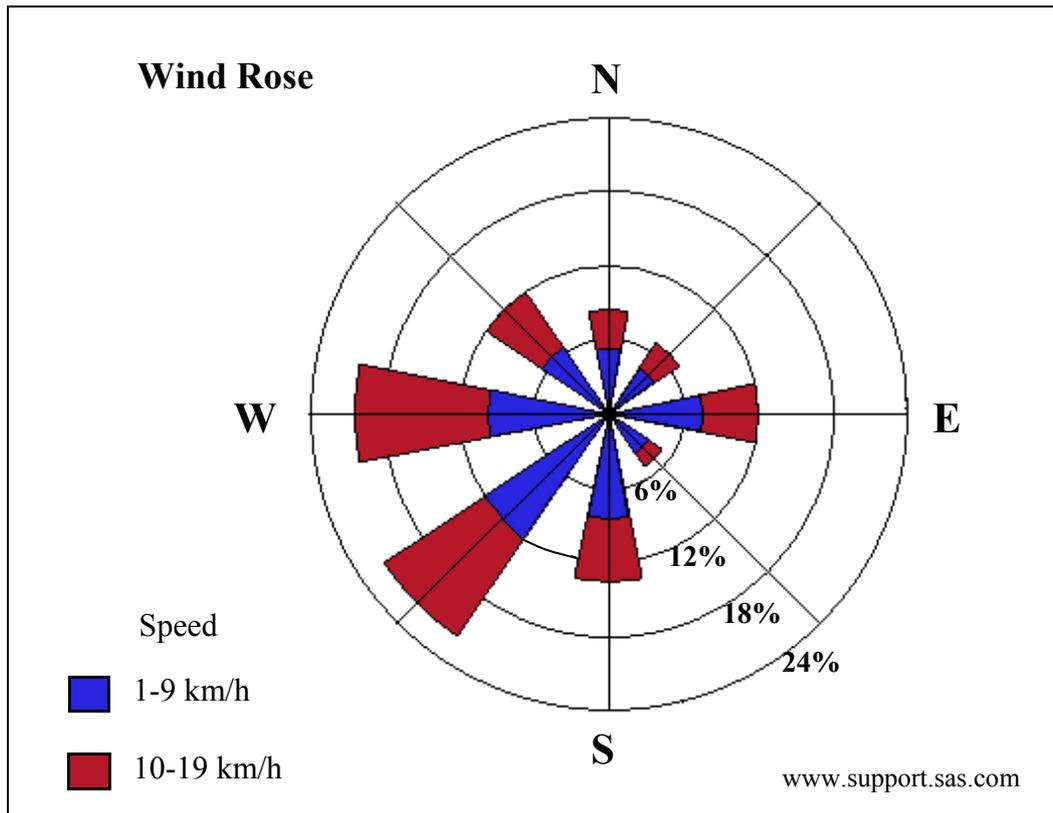
Examine the Ordnance Survey extract and cross-section, and the Ordnance Survey legend accompanying this paper.

Match each of the letters **A**, **B**, **C** and **D** on the cross-section to its correct description in the table below.

Description	Letter
U-Shaped valley	
V-Shaped valley	
Third class road	
Concave slope	

[8m]

8. Graphical Interpretation - Weather



Examine the wind rose above and answer each of the following questions.

- (i) What percentage of wind blowing from the South West was at a speed of between 1-9 km/h?

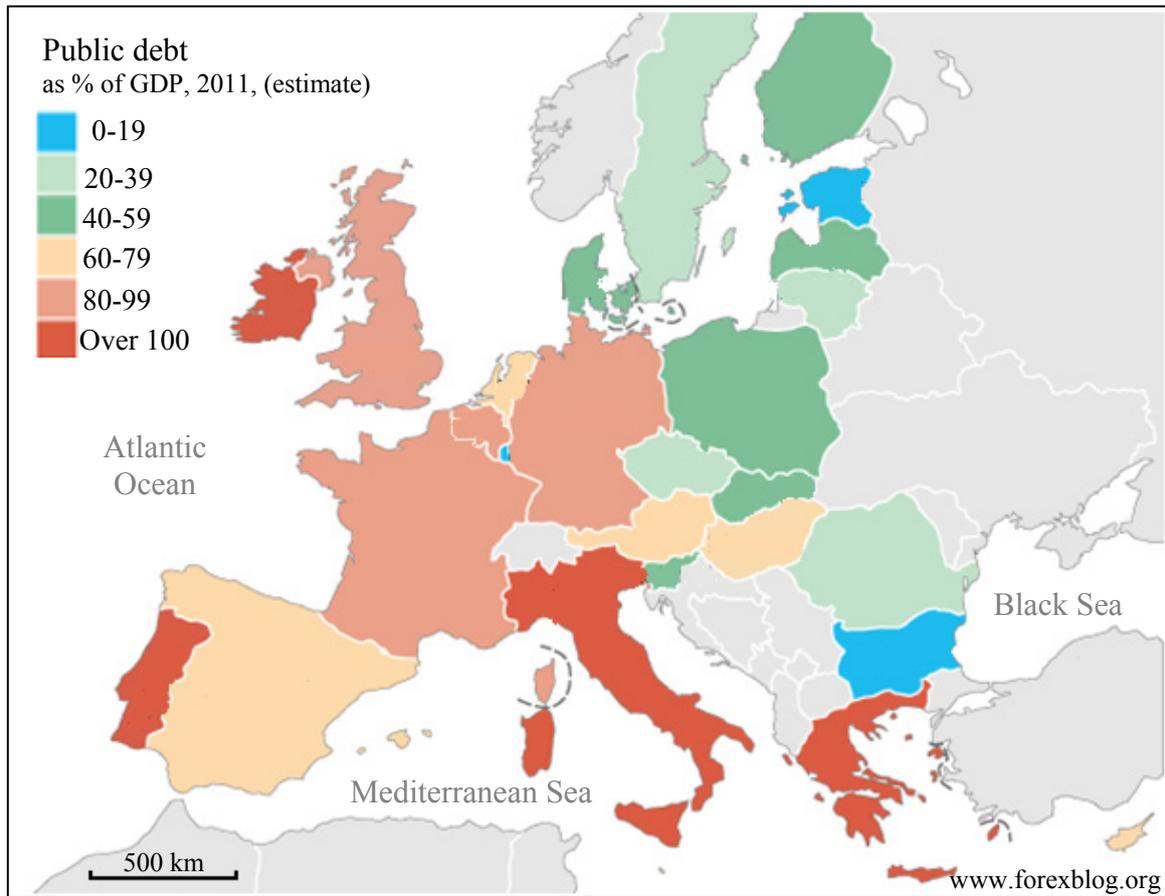
- (ii) What percentage of wind blew from the North West?

- (iii) From what direction did the wind blow most frequently?

- (iv) From what direction did the wind blow least frequently?

[8m]

9. European Economy



Examine the map of Europe above showing public debt as a percentage of Gross Domestic Product (GDP) for 2011 (estimate) and state whether each of the following statements are true or false by ticking the correct box.

- (i) Four EU member states had a public debt of over 100% of GDP in 2011.
- True False
- (ii) Portugal had a public debt of between 80-99% of GDP in 2011.
- True False
- (iii) Poland and Denmark had the same public debt as a percentage of GDP in 2011.
- True False
- (iv) Spain, Austria and Hungary had a public debt of 60-79% of GDP in 2011.
- True False

[8m]

10. Satellite Image Interpretation



Examine the satellite images above.
Match each of the letters **A**, **B**, **C** and **D** with the description in the table below that best matches it.

Description	Letter
Deforestation	
Hydro electric power station	
Nuclear power station	
River flooding	

[8m]

11. Statistical Interpretation

Daily Irish Speakers in Gaeltacht Areas 2006 and 2011

Gaeltacht Area	2006	2011	Change in Daily Irish Speakers	
	Persons	Persons	Total	Percentage
Cork County	867	982	115	13.3
Donegal County	6,956	7,047	91	1.3
Galway City	571	636	65	11.4
Galway County	9,654	10,085	431	4.5
Kerry County	2,394	2,501	107	4.5
Mayo County	1,281	1,172	-109	-8.5
Meath County	336	314	X	-6.5
Waterford County	456	438	-18	-3.9
All Gaeltacht Areas	22,515	23,175	660	2.9

Amended from CSO Preliminary Report on the 2011 Census

Examine the table above which shows Daily Irish Speakers in Gaeltacht Areas in 2006 and 2011 and answer the following questions.

- (i) What was the percentage change in Daily Irish Speakers in All Gaeltacht Areas between 2006 and 2011?
- _____
- (ii) Calculate **X**, the decrease in the total number of Daily Irish Speakers in the Meath County Gaeltacht area between 2006 and 2011.
- _____
- (iii) How many Gaeltacht areas had an increase in the number of Daily Irish Speakers between 2006 and 2011?
- _____
- (iv) Explain briefly **one** reason why the percentage of Daily Irish Speakers in the Mayo County Gaeltacht area fell by 8.5% between 2006 and 2011.
- _____
- _____

[8m]

12. Rocks

The table below contains information on rocks regarding their name, category, location in Ireland and the name of the metamorphic rock they can become following metamorphosis.

Complete the table by inserting the correct term from the list below in its correct position in the table.

One row of the table is completed for you.

Sedimentary Central Plain of Ireland Sandstone Gneiss
 Igneous Marble Wicklow Mountains Granite
 Mountains of Munster Quartzite Limestone Sedimentary

Name of Rock	Category of Rock	Location in Ireland	Metamorphic Rock
Limestone	Sedimentary	Central Plain of Ireland	Marble

[8m]

PART TWO – STRUCTURED and ESSAY QUESTIONS – 320 MARKS

You must attempt **FOUR** questions, as follows:

- **TWO** questions from **Section 1 – Core**:
 - **One** question from Questions 1, 2 and 3
 - AND**
 - **One** question from Questions 4, 5 and 6
- **ONE** question from **Section 2 – Electives**
- **ONE** question from **Section 3 – Options**

THESE QUESTIONS ARE TO BE ANSWERED IN THE ANSWER BOOK

SECTION 1 – CORE

Questions 1 to 6

You **MUST** attempt **TWO** questions:

➤ **ONE** from **Patterns and Processes in the Physical Environment**

AND

➤ **ONE** from **Regional Geography**

PATTERNS AND PROCESSES IN THE PHYSICAL ENVIRONMENT

Questions 1 to 3

Attempt **ONE** question

Question 1

A. Ordnance Survey Map

Examine the 1:50000 Ordnance Survey map and legend that accompany this paper.
Draw a sketch map to half scale of the area shown.

On it, correctly show and name each of the following:

- The complete course of the River Slaney
- The confluence of the River Slaney and Boro River (mark it with an X on the sketch map)
- An area of land above 170 metres
- An area of Natural Woodland.

[20m]

B. Rocks

Explain the formation of metamorphic rocks, with reference to examples from Ireland.

[30m]

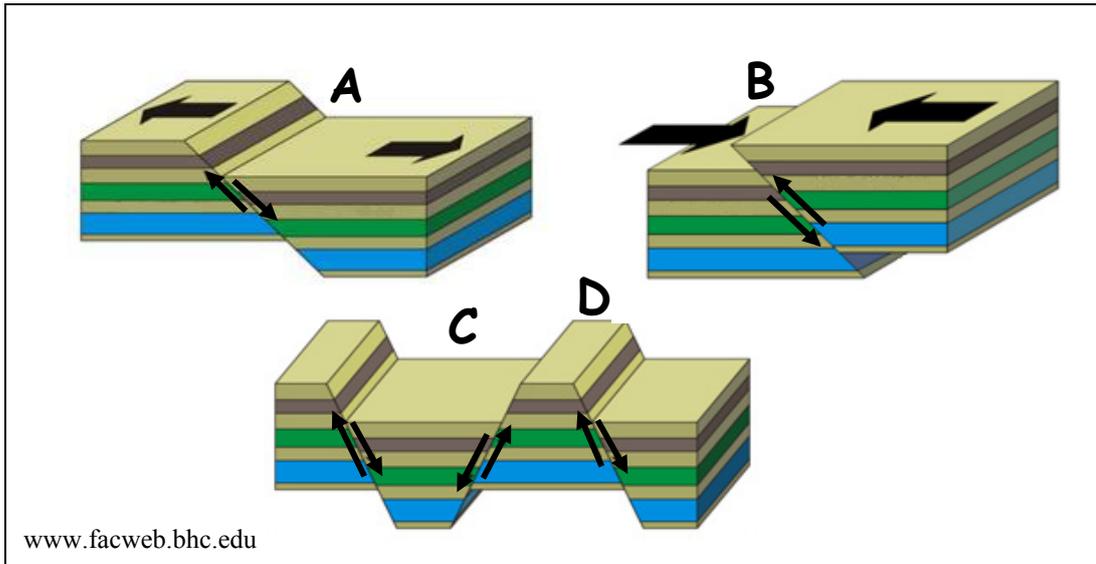
C. Fluvial Adjustment

Explain how rivers adjust to a change in base level, with reference to example(s) that you have studied.

[30m]

Question 2

A. Faulting and Landforms



Examine the diagrams above and answer the following questions.

- (i) Name the type of fault at **A** and the type of fault at **B**.
- (ii) Explain briefly what causes the type of faulting at **A** or at **B**.
- (iii) Name the landform at **C** and the landform at **D** that result from faulting.

[20m]

B. Landform Development

Answer (i) or (ii).

- (i) Explain with the aid of a labelled diagram(s) the formation of **one** landform of erosion that you have studied.

Or

- (ii) Describe and explain **one** process of mass movement that you have studied.

[30m]

C. Human Interaction

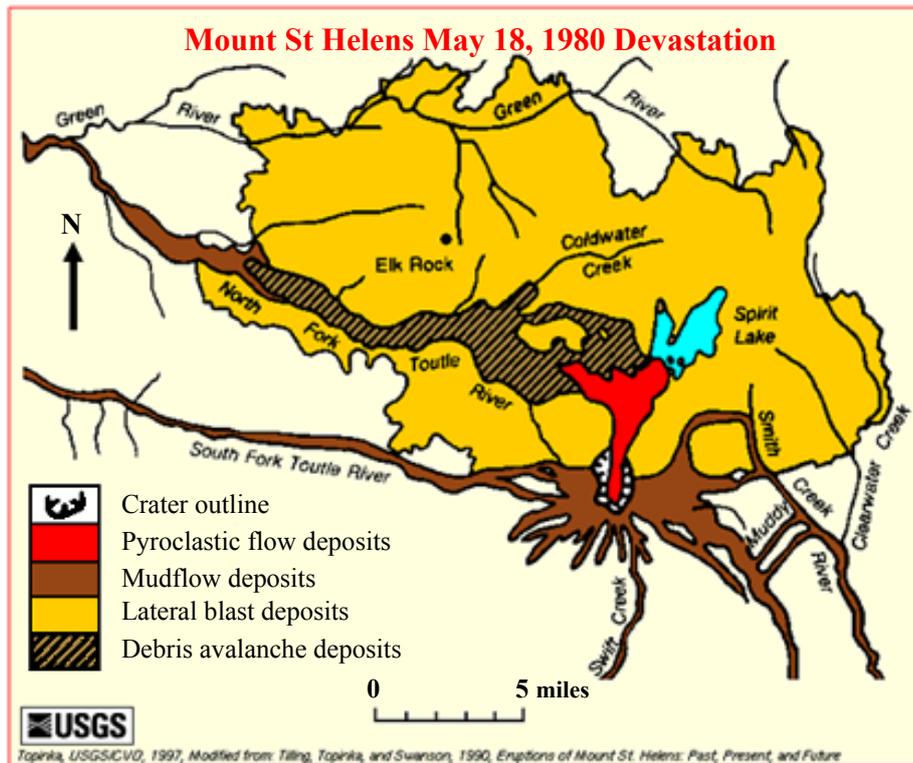
Examine how humans interact with the rock cycle, with reference to **one** of the following:

- Mining
- Extraction of building materials
- Oil/gas exploration
- Geothermal energy production.

[30m]

Question 3

A. Volcanoes



Examine the map and legend above showing the extent of the materials deposited as a result of the eruption of the Mount St Helens volcano and answer the following questions.

- What were the most extensive deposits as a result of the eruption?
- What was the direction of the pyroclastic flow deposits?
- What distance did the pyroclastic flow deposits extend to?
- Name **two** examples of pyroclastic materials.
- Explain briefly why some volcanoes erupt violently.

[20m]

B. Weathering

Explain the process(es) of physical weathering **or** the process(es) of chemical weathering.

[30m]

C. Earthquakes and Volcanoes

Explain how the occurrence of earthquakes and volcanic eruptions can be monitored and predicted.

[30m]

REGIONAL GEOGRAPHY

Questions 4 to 6

Attempt **ONE** question

Question 4

A. European Region

Draw an outline map of a **European** region (not in Ireland) that you have studied. On it, correctly show and name the following:

- A named feature of relief in the region
- A named river in the region
- **Two** named urban centres in the region.

[20m]

B. Secondary Economic Activity in Ireland

Examine the factors that influence the development of secondary economic activity in an **Irish** region that you have studied.

[30m]

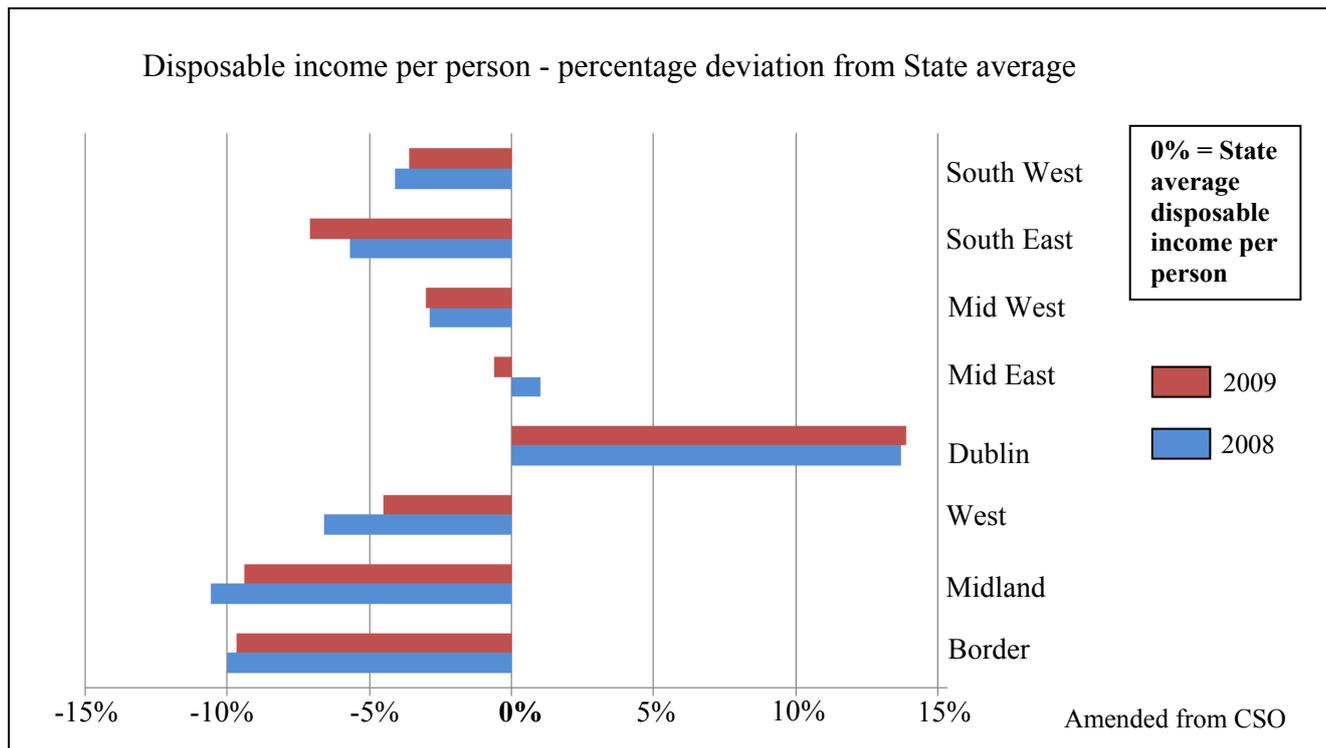
C. Concept of a Region

Examine how socio-economic factors can be used to define regions, with reference to examples that you have studied.

[30m]

Question 5

A. Disposable Income of Irish Regions



Examine the graph above and answer the following questions.

- How many regions had a disposable income per person below the State average in 2008?
- Which region had a disposable income per person 10% below the State average in 2008?
- Which region's disposable income per person was closest to the State average in both 2008 and 2009?
- Which region had a disposable income per person above the State average in both 2008 and 2009?
- Explain briefly why this region had a disposable income per person above the State average in both 2008 and 2009.

[20m]

B. Agriculture in a Continental / Sub-Continental Region

Explain the development of agriculture in a **Continental / Sub-Continental** region (not in Europe) that you have studied, with reference to any **two** of the following factors:

- Soils
- Markets
- Relief.

[30m]

C. Population in a European Region

Account for the distribution of population throughout a **European** region (not in Ireland) that you have studied.

[30m]

Question 6

A. Tourism and Travel

Overseas Visits to and from Ireland (in thousands)

	2007	2008	2009	2010	2011
Number of Overseas Visitors to Ireland	8012	7839	6928	6037	6505
Number of Visits Abroad by Irish Residents	7713	7877	7049	6572	6293

www.cso.ie

Examine the table above and answer the following questions.

- (i) How many overseas visitors came to Ireland in 2009?
- (ii) In which years did the number of overseas visitors to Ireland exceed the number of visits abroad by Irish residents?
- (iii) Calculate the difference between the number of overseas visitors to Ireland and the number of visits abroad by Irish residents in 2011.
- (iv) Explain briefly **one** advantage of tourism to the Irish economy.
- (v) Explain briefly why, after a steady decrease from 2007 to 2010, there was an increase in the number of overseas visitors to Ireland between 2010 and 2011.

[20m]

B. Urban Area in a Continental / Sub-Continental Region

With reference to **one** urban area in a **Continental / Sub-Continental** region (not in Europe) that you have studied, explain why this urban area developed at its present location.

[30m]

C. Economic, Political and Cultural Activities

Examine the interaction between economic, political and/or cultural activities in any region that you have studied.

[30m]

SECTION 2 – ELECTIVES

Questions 7 to 12

You **MUST** attempt **ONE** question from:

Patterns and Processes in Economic Activities

OR

Patterns and Processes in the Human Environment

PATTERNS AND PROCESSES IN ECONOMIC ACTIVITIES

Questions 7 to 9

Question 7

A. International Trade

Irish External Trade with selected EU Countries

Country	Exports (€ million)		Imports (€ million)	
	2009	2010	2009	2010
Spain	3,275.8	3,361.5	568.7	667.1
France	4,527.1	4,492.5	2,193.3	1,832.1
Germany	5,974.4	7,214.6	3,045.4	3,499.1
Italy	2,784.4	2,713.2	911.1	766.9
Total	16,561.7	X	6,718.5	6,765.2

Amended from Eurostat

Examine the table above and answer the following questions.

- (i) Which of the selected countries above had the highest value of imports and exports with Ireland in both 2009 and 2010?
- (ii) Which of the selected countries above received the lowest value of exports from Ireland in both 2009 and 2010?
- (iii) Calculate **X**, the total value of exports from Ireland to the selected EU countries in 2010.
- (iv) Calculate the percentage decrease in imports from Italy between 2009 and 2010.
- (v) Explain briefly **one** of the following:
 - Balance of Trade
 - Balance of Payments.

[20m]

B. Tertiary Economic Activity

Using evidence from the 1:50000 Ordnance Survey map accompanying this paper, discuss the potential for the development of tourism, in the area shown on the map, under the following headings:

- Accessibility
- Attractions
- Services (excluding transport).

[30m]

C. European Union

Examine the impact of membership of the European Union on the Irish economy.

[30m]

Question 8

A. Aerial Photograph

Examine the aerial photograph of Enniscorthy accompanying this paper.
Draw a sketch map of the aerial photograph, half the length and half the breadth.
On it, correctly show and name each of the following:

- The railway bridge
- Two connecting streets
- The river
- The grain storage area in the centre of the aerial photograph.

[20m]

B. Environmental Impact

Examine the environmental impact of burning fossil fuels.

[30m]

C. Economic Development

With reference to a developed economy that you have studied, examine the factors that influence its level of economic development.

[30m]

Question 9

A. Oil Production

Oil Production, 2011	Millions of barrels per day
Asia Pacific	8
Eurasia / Europe	17.5
Central / South America	7
Africa	8.5
Middle East	27.5
North America	14.5

Amended from www.bp.com

Examine the data in the table above showing oil production in 2011.

- (i) Using graph paper, draw a suitable graph to illustrate this data.
- (ii) Explain briefly the term fossil fuel.

[20m]

B. Developing Economy

Examine the impact of globalisation on a developing economy that you have studied.

[30m]

C. Multinational Company (MNC)

Examine the factors that influence the global distribution of **one** multinational company that you have studied.

[30m]

PATTERNS AND PROCESSES IN THE HUMAN ENVIRONMENT

Questions 10 to 12

Question 10

A. Urban Growth

Fastest growing towns in Ireland

Town	Region	Population 2006	Population 2011	%Population Change 2006-2011
Saggart	South Dublin	868	2,144	147
Courtown Harbour	Wexford	1,421	2,857	X
Newcastle	South Dublin	1,506	2,659	77
Carrigtwohill	Cork	2,782	4,551	64
Ballymahon	Longford	963	1,563	62

Amended from CSO

Examine the table above and answer the following questions.

- (i) Calculate the increase in the total population of Newcastle, between 2006 and 2011.
- (ii) Calculate X, the percentage change in Courtown Harbour's population, between 2006 and 2011.
- (iii) State **two** reasons for the rapid growth of towns in South Dublin, between 2006 and 2011.
- (iv) Explain briefly **one** problem caused by the rapid growth of Irish towns.
- (v) Explain briefly **one** reason why the Census of Population is important for urban planning.

[20m]

B. Rural Settlement Patterns

With reference to the 1:50000 Ordnance Survey map accompanying this paper, describe and explain **three** rural settlement patterns evident on the map.

[30m]

C. Patterns of Migration

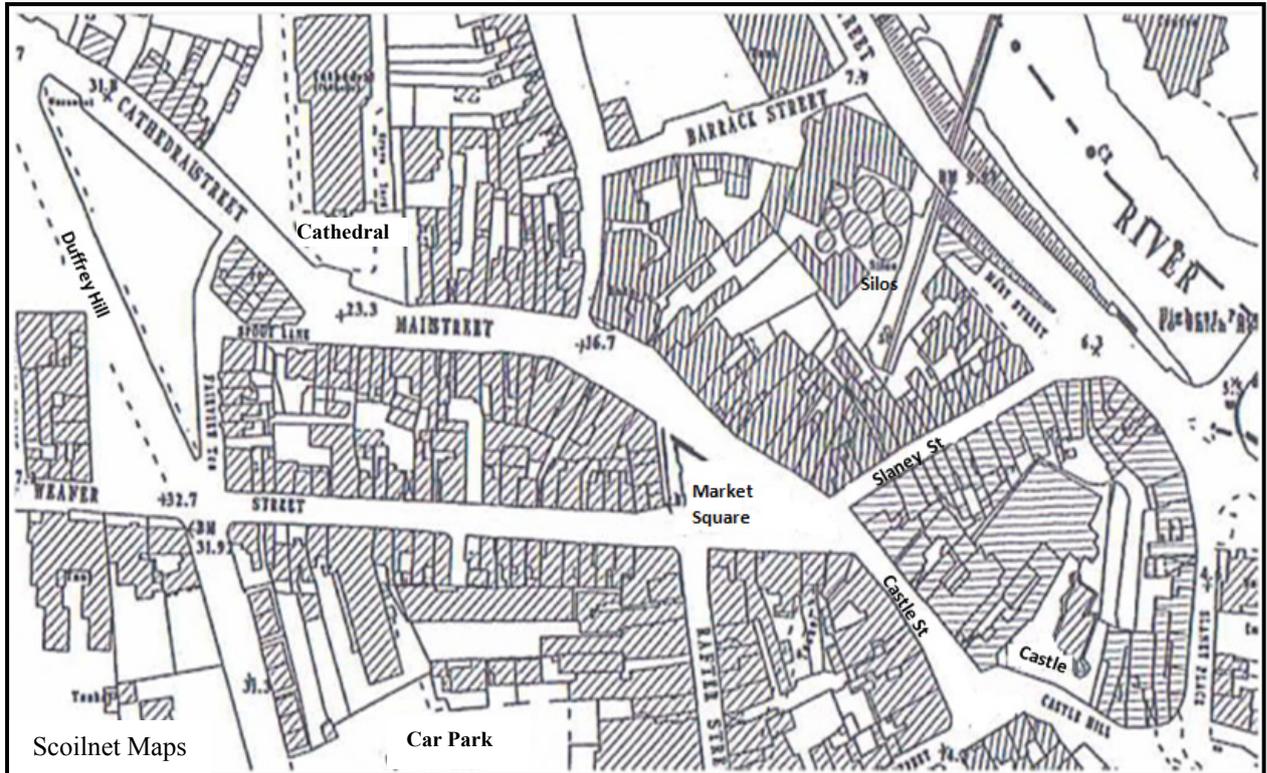
Describe and explain changes in the patterns of migration into and out of Ireland since the 1950s.

[30m]

Question 11

A. Map Skills

1:2000 Map of Central Enniscorthy



Examine the 1:2000 map of Enniscorthy shown above.

Draw a sketch of the 1:2000 map and on it, correctly show and name each of the following:

- Two connecting streets
- The Cathedral
- The Market Square
- The Car Park.

[20m]

B. Population

Explain how the development of resources impacts on population change, with reference to examples that you have studied.

[30m]

C. Migration

Examine how ethnic and religious issues can arise as a result of migration, with reference to example(s) that you have studied.

[30m]

Question 12

A. Population

Percentage (%) of Population aged 65 years and over, 2001 and 2011

Country	2001	2011
Switzerland	15	17
Ireland	11	12
Germany	17	21

Amended from Eurostat

Examine the data in the table above showing the percentage of the population aged 65 years and over for a number of European countries in 2001 and 2011.

- (i) Using graph paper, draw a suitable graph to illustrate this data.
- (ii) Explain briefly the term dependency ratio.

[20m]

B. Urban Development

With reference to the aerial photograph that accompanies this paper, explain **three** reasons for the growth of the town of Enniscorthy.

[30m]

C. Future Urbanisation

Discuss **two** issues facing cities in the future in the developed world.

[30m]

SECTION 3 – OPTIONS

Questions 13 to 24

Attempt **ONE** question

Note: It is better to discuss **three** or **four** aspects of the theme in some detail, rather than to give a superficial treatment of a large number of points.

Global Interdependence

Note: It is better to discuss **three** or **four** aspects of the theme in some detail, rather than to give a superficial treatment of a large number of points.

13. Discuss why sustainable development is important for the future. [80m]
14. Examine the impact of global trading patterns in relation to both producer and consumer regions, with reference to **one** multinational company (MNC) that you have studied. [80m]
15. Discuss the arguments for and against international aid. [80m]

Geocology

Note: It is better to discuss **three** or **four** aspects of the theme in some detail, rather than to give a superficial treatment of a large number of points.

16. Examine how desertification and conservation have impacted on soil characteristics. [80m]
17. With reference to **one** biome that you have studied, account for the type of climate experienced in this biome and explain how this climate impacts on soils and vegetation within the biome. [80m]
18. Discuss how soil development is influenced by any **three** of the following factors: [80m]
- Mineral matter
 - Air
 - Water
 - Organic matter.

Culture and Identity

Note: It is better to discuss **three** or **four** aspects of the theme in some detail, rather than to give a superficial treatment of a large number of points.

19. Many cultural groups do not have a nation state of their own.
Discuss. [80m]
20. Examine how people express their culture and identity in everyday life. [80m]
21. Identity as a concept entails a variety of cultural factors.
Discuss this statement with reference to **one** case study of a European region that you have studied. [80m]

The Atmosphere - Ocean Environment

Note: It is better to discuss **three** or **four** aspects of the theme in some detail, rather than to give a superficial treatment of a large number of points.

22. Examine how circulation patterns in the atmosphere and/or the oceans affect weather and climate at the earth's surface. [80m]
23. Examine **one** climate type that you have studied. [80m]
24. Give an account of how atmosphere-ocean phenomena are measured and examine the importance of such measurements with reference to pressure, temperature, wind and humidity. [80m]

Blank Page

Blank Page