



Coimisiún na Scrúduithe Stáit State Examinations Commission

LEAVING CERTIFICATE EXAMINATION, 2018

GEOGRAPHY – HIGHER LEVEL

FRIDAY 8 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, you will lose marks.

PART ONE – SHORT-ANSWER QUESTIONS – 80 MARKS

Attempt any **TEN** questions.

All questions carry equal marks.

THESE QUESTIONS ARE TO BE ANSWERED IN THE SPACES PROVIDED

1. Landscape Identification

Examine the 1:50 000 Ordnance Survey map and legend accompanying this paper and answer each of the following questions.

(i) In the table below, match each of the following features with the grid reference that best matches its location on the Ordnance Survey map:

- Trellised drainage pattern
- Dendritic drainage pattern
- Swallow hole
- Plateau surface of 100 metres high.

Grid Reference	Feature
G 74 35	
G 74 46	
G 68 39	
G 71 45	

(ii) Name **one** other drainage pattern not named above.

(iii) What type of lake is Glencar Lough, located at grid reference G 74 43?

[8m]

2. Aerial Photography

Examine the aerial photograph of Sligo accompanying this paper and the Google Street View images below from the same area of Sligo. Answer each of the following questions.



- (i) In the table below, using accepted notation, give the location on the aerial photograph of each of the areas shown in the Google Street View images **A**, **B** and **C**.

Google Street View Image	Location on the Aerial Photograph
A High-rise building/ apartment complex	
B Bridge	
C Church	

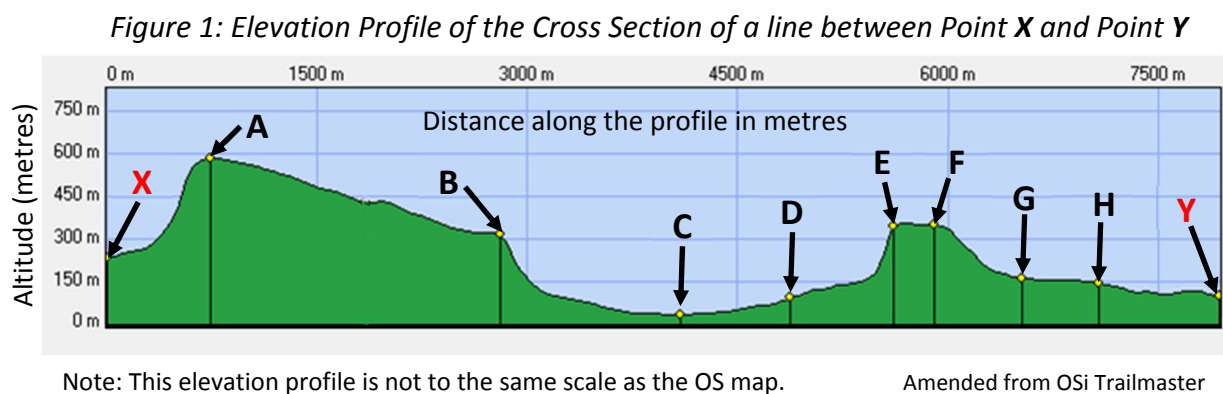
- (ii) State the **type** of aerial photography used for the aerial photograph accompanying this paper.

[8m]

3. Elevation Profile

Locate point **X**, G 730 470, and point **Y**, G 730 390, on the 1:50 000 Ordnance Survey map accompanying this paper. Both points are on easting 73.

Figure 1 shows an elevation profile of the cross section of a line between point **X** and point **Y**.



Using the 1:50 000 Ordnance Survey map and legend and the elevation profile above, state whether each of the following statements is true or false.

- (i) **X** is located in the Lisduff townland. _____
- (ii) The height at **Y** is 160 metres. _____
- (iii) The aspect of the slope between **A** and **X** is south. _____
- (iv) The Drumcliff River is located at **C**. _____
- (v) The slope between **B** and **C** is convex. _____
- (vi) The N16 regional road is located at **D**. _____
- (vii) The land between **E** and **F** is on the eastern slope of Cope's Mountain. _____
- (viii) There is a coniferous plantation between **G** and **H**. _____

[8m]

4. Ordnance Survey Map

Examine the 1:50 000 Ordnance Survey map and legend accompanying this paper and answer each of the following questions.

- (i) What is the height, in metres, of the highest point shown on the map?

- (ii) Give a six-figure grid reference for an Independent Holiday Hostel in Sligo.

- (iii) Measure the length, in kilometres, of the dual carriageway on the N4 road.

- (iv) Calculate the approximate area, in km², of the **land** west of easting 70.

[8m]

5. Concept of a Region

Answer each of the following questions in the table below.

- (i) Match each of the following types of region with the definition in the table which is most associated with it:

Peripheral Administrative Cultural Geomorphological

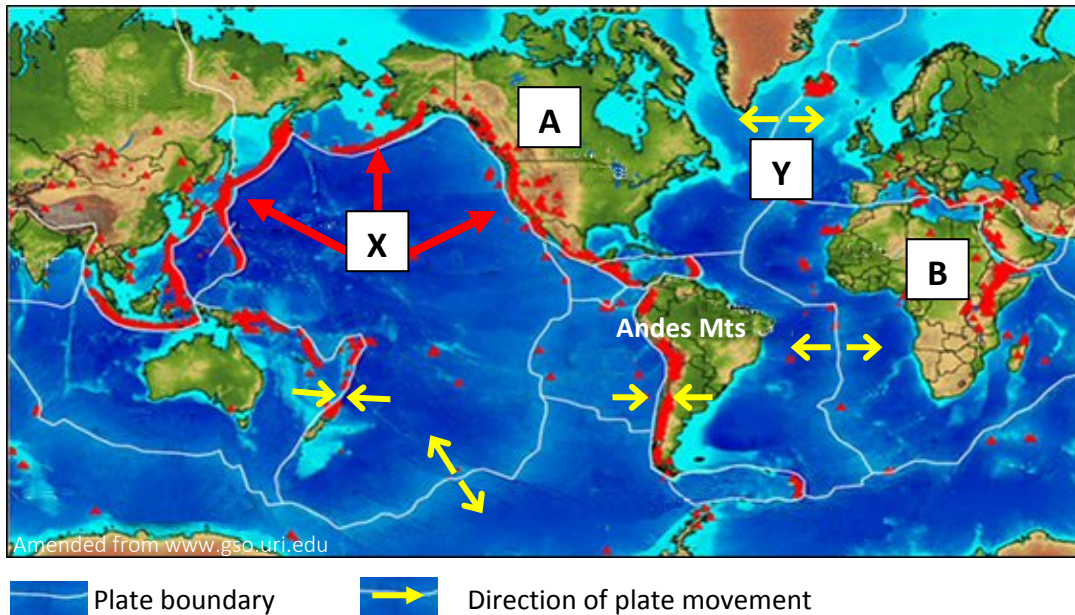
- (ii) Match each of the following examples of regions with the definition in the table which is most associated with it:

Islamic World Northern Norway Co. Wexford The Burren

Q.5(i)	Definition of Region	Q.5(ii)
Type of Region		Example of Region
	A region characterised by physical characteristics such as rock type.	
	A region organised by local authorities.	
	A marginal region where there is an underdevelopment of economic activities.	
	A region with a distinct pattern in terms of religion.	

[8m]

6. Plate Tectonics



Examine the map above and answer each of the following questions.

- (i) Name each of the plates labelled **A** and **B**.

A. _____

B. _____

- (ii) Name the **two** plates that converged to form the Andes mountain range.

1. _____

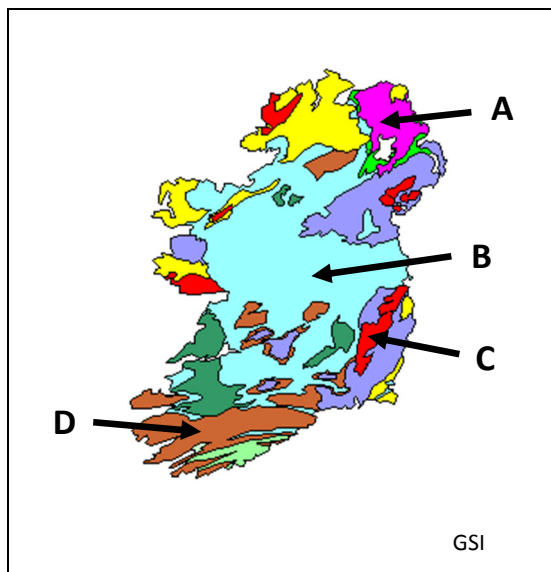
2. _____

- (iii) What is the name given to the area **X** where earthquakes and volcanic eruptions occur?

- (iv) Name the type of plate boundary at **Y**.

[8m]

7. Rocks in Ireland



Amended from staticflickr.com; sandatlas.org; macgeo.org; cdn.thinglink.me

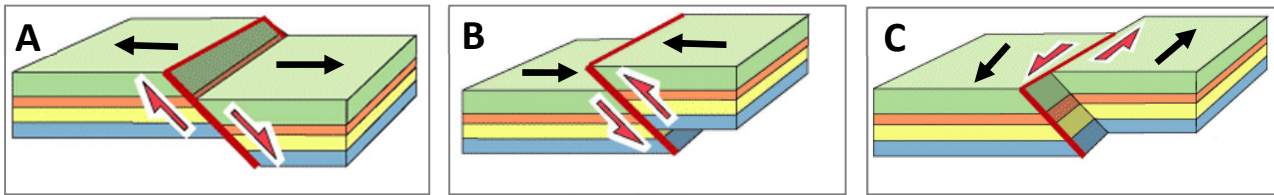
Examine the map of Ireland and the photographs of rocks above, and answer each of the following questions.

- (i) Match each of the locations on the map, **A**, **B**, **C** and **D** with the example of the rock in the table below which is most associated with it.
- (ii) Match each of the photographs **W**, **X**, **Y** and **Z** with the example of the rock in the table below that best matches it.

Q.7(i)	Example of Rock	Q.7(ii)
Location (Letter)		Photograph (Letter)
	Limestone	
	Basalt	
	Sandstone	
	Granite	

[8m]

8. Faulting



Amended from University of Leeds

Examine the images above and answer each of the following questions.

- (i) Match each of the images **A**, **B**, and **C** with the type of fault in the table below that best matches it.
- (ii) Indicate, by ticking the correct box, whether each of the types of fault named in the table below is most associated with compression, tension or shearing.

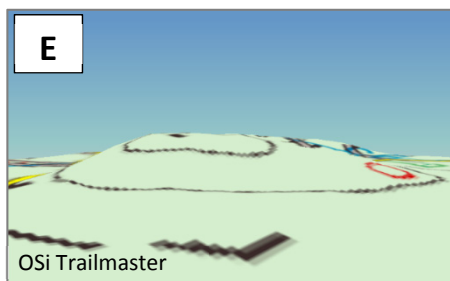
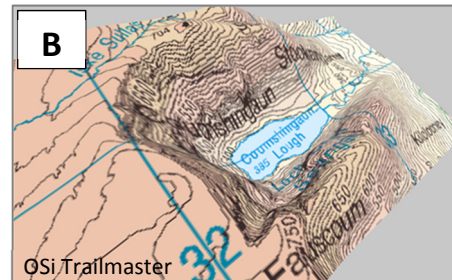
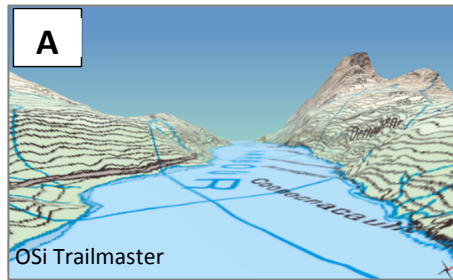
Q.8(i)	Type of Fault	Q.8(ii)		
Letter		Compression (✓)	Tension (✓)	Shearing (✓)
	Reverse fault			
	Transform fault			
	Normal fault			

- (iii) State whether the following statement is true or false.

Horsts and grabens are features associated with faulting.

[8m]

9. Landscape – Image Interpretation



Examine the images above and answer each of the following questions.

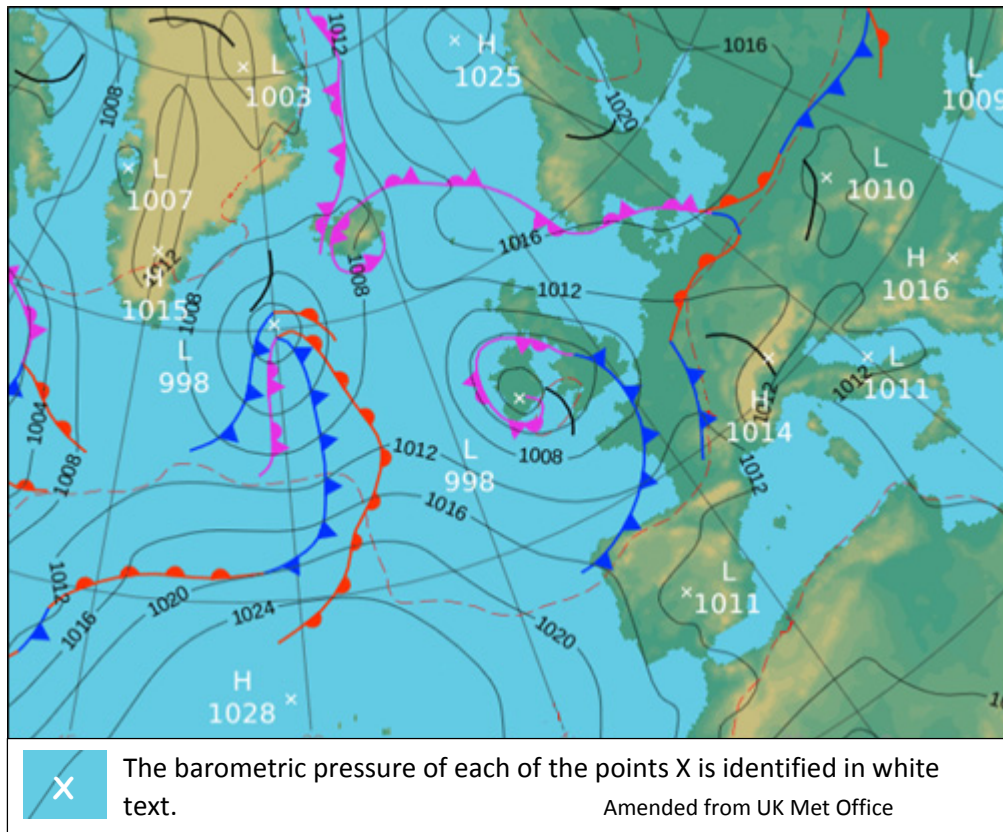
- (i) Match each of the images **A**, **B**, **C**, **D**, **E** and **F** with the landscape feature in the table below that best matches it.

Landscape Feature	Letter
Interlocking spurs	
Drumlin	
Fjord	
Striations	
Cirque/corrie/tarn	
Barchan dunes	

- (ii) State whether the following statement is true or false.
Barchan dunes are formed by wind deposition in deserts.

[8m]

10. Weather



Examine the synoptic weather chart above and answer each of the following questions.

- (i) What is the lowest barometric pressure identified on the weather chart, in hectopascals/millibars?

- (ii) Name the type of weather front over Iceland.

- (iii) What is the highest barometric pressure of the anticyclone to the southwest of Ireland identified on the weather chart, in hectopascals/millibars?

- (iv) State whether the following statement is true or false.

The wind speed over Norway is greater than the wind speed over Ireland.

[8m]

11. Irish Exports

The Minister for Agriculture, Food and the Marine, Mr Michael Creed TD, announced that the value of Irish agri-food and drink exports had exceeded €11 billion for the first time ever in 2016. He stated that one of the notable features of this achievement, is the impact of market diversification in the year in which the United Kingdom (UK) decided to leave the European Union.

Trade with the UK fell by 8%, triggered by challenging exchange rates, uncertainty arising from Brexit and further competitive pressures. This fall was offset by increased exports to international and emerging markets such as North America (+€200 million to reach €1.1 billion), China (+35% to reach €845 million) and the rest of Asia (+6% to reach €330 million).

There was an overall increase of 13% in shipments to international markets, to reach a value of approximately €3.5 billion. The strongest performers in terms of export growth in 2016 were prepared foods, sheepmeat, beverages, pigmeat and to a lesser extent dairy.

Amended from agriland.ie

Read the extract above and answer each of the following questions.

- (i) State **two** reasons, referred to in the extract above, for the decline in trade with the United Kingdom.

1. _____

2. _____

- (ii) What offset the decline in trade with the United Kingdom?

- (iii) What was the difference between the value of exports to China and to the rest of Asia (in € millions)?

- (iv) Name **two** of the strongest performers in terms of export growth referred to in the extract.

1. _____

2. _____

[8m]

12. Statistical Interpretation

Price Level Indices for Consumer Goods and Services for Selected Countries relative to the European Union (EU) Average (EU-28 = 100), 2016

Country	Food	Clothing & Shoes	Transport	Communications	Restaurants & Hotels
Czech Republic	79.4	93.1	51.6	93.2	56.5
Denmark	146.0	133.0	123.7	79.8	149.8
Germany	106.5	102.8	119.0	98.0	108.9
Ireland	119.3	111.8	108.8	133.6	120.1
Spain	95.8	92.0	79.6	108.8	85.6
United Kingdom	96.4	91.3	138.0	128.7	111.0
Iceland	148.4	164.9	168.1	107.4	162.1
EU-28 Average	100.0	100.0	100.0	100.0	100.0

Amended from Eurostat

Examine the table above and answer each of the following questions.

- (i) Which country had the lowest price level index for Restaurants & Hotels relative to the EU-28 average?

- (ii) Which of the selected countries had a price level index for Communications closest to the EU-28 average?

- (iii) In how many countries did the price level indices for Food, Clothing & Shoes and Transport all exceed the EU-28 average?

- (iv) Name any **two** countries in the table above that are not in the euro area.

1. _____

2. _____

[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 **(80 marks)**
 - AND**
 - **One** question from Questions 4, 5 and 6 **(80 marks)**
- **ONE** question from **Section 2 – Electives (80 marks)**
- **ONE** question from **Section 3 – Options (80 marks)**

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 (Questions 1 to 3)**

AND

ONE from **Regional Geography (Questions 4 to 6)**

All questions carry 80 marks.

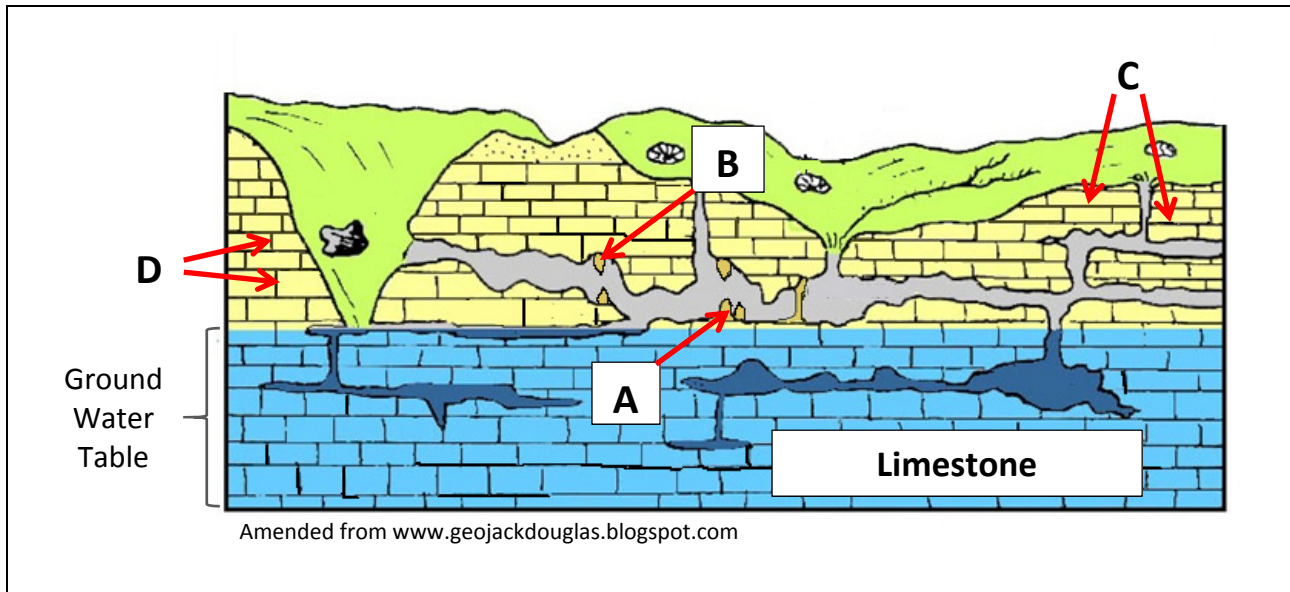
PATTERNS AND PROCESSES IN THE PHYSICAL ENVIRONMENT

Questions 1 to 3

Attempt **ONE** question

Question 1

1A. Karst Landscape



Examine the diagram above and answer each of the following questions.

- Name each of the features labelled **A** and **B**.
- What is the term given to the horizontal lines at **C** found in limestone?
- What is the term given to the vertical lines at **D** found in limestone?
- Name any **two** processes of chemical weathering.
- Explain briefly **one** of the processes of chemical weathering named by you above.
- Explain briefly what is meant by the *ground water table*.

[20m]

1B. Isostasy

Describe and explain how isostasy impacts on the coastal landscape **or** on the fluvial landscape.

[30m]

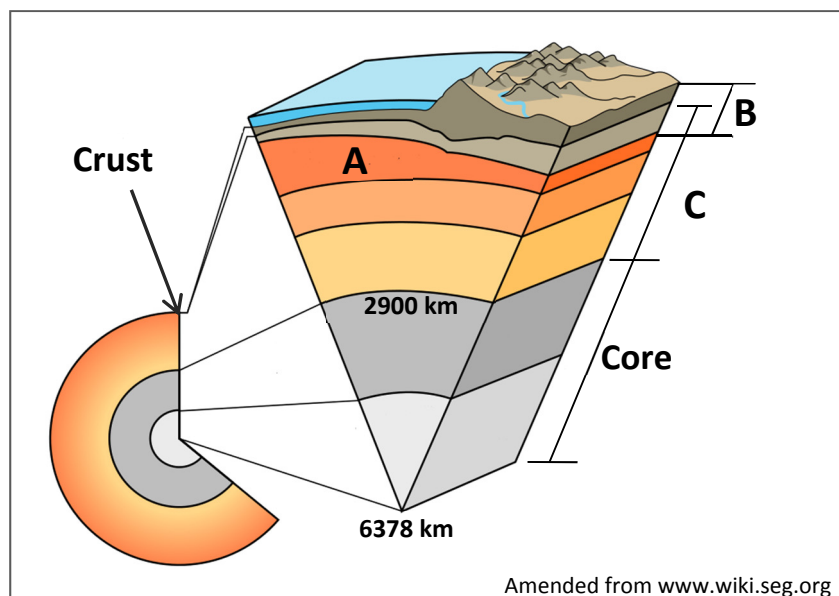
1C. Volcanoes

Discuss the positive impacts of volcanoes.

[30m]

Question 2

2A. Structure of the Earth



Examine the diagram above and answer each of the following questions.

- Name each of the layers of the earth labelled **A**, **B** and **C**.
- Name the **two** main minerals found in the core.
- What is the name given to the boundary between the crust and the mantle?
- Explain briefly how plates move.
- Explain briefly what is meant by *endogenic forces*.

[20m]

2B. Weathering

Explain the role of temperature in the process of physical/mechanical weathering.

[30m]

2C. Surface Processes

Examine the 1:50 000 Ordnance Survey map and legend accompanying this paper.

Answer (i) or (ii).

- Name and identify using six-figure grid references, **two** features on the map that have been formed by glacial processes, coastal processes or fluvial processes. Explain the formation of any **one** of these features.
- or**
Using grid references, identify an area on the map which has a very steep slope **and** identify an area on the map which has a very gentle slope. Describe and explain any **one** mass movement process that might operate in areas such as these.

[30m]

Question 3

3A. Ordnance Survey Map

Examine the 1:50 000 Ordnance Survey map and legend accompanying this paper.

Draw a sketch map of the area shown to half scale.

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

- The entire course of the Drumcliff River
- **Two** named lakes
- The entire area of land above 300 metres south of northing 43.

[20m]

3B. Human Interaction with the Rock Cycle

Humans interact with the rock cycle in a number of ways.

Describe and explain how this interaction with the rock cycle takes place, with reference to **one** of the following:

- Mining
- Extracting building materials
- Oil/gas exploitation
- Geothermal energy production.

[30m]

3C. Plate Boundaries

Describe and explain destructive plate boundaries.

[30m]

REGIONAL GEOGRAPHY

Questions 4 to 6

Attempt **ONE** question.

Question 4

4A. Map Skills

Draw an outline map of an **Irish** region that you have studied.

On it, show and name each of the following:

- A named river
- The outline of a named feature of relief (upland or lowland)
- **Two** named urban centres.

[20m]

4B. Concept of a Region

Examine how culture can be used to define regions, with reference to example(s) that you have studied.

[30m]

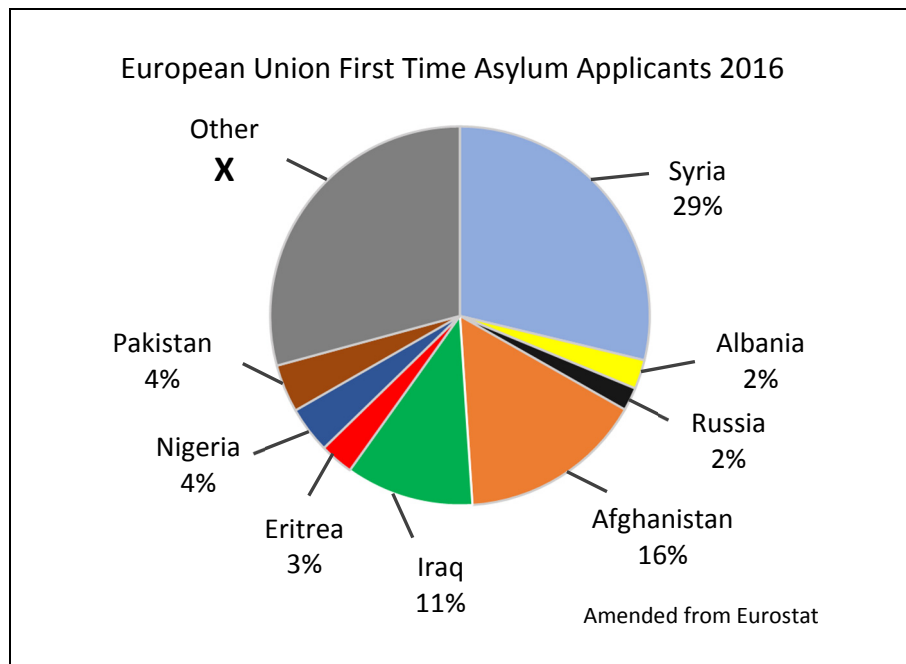
4C. Primary Economic Activity – Agriculture

Explain the impact of climate on the development of agriculture in **two** contrasting **European** regions (not in Ireland) that you have studied.

[30m]

Question 5

5A. Population Dynamics



Examine the chart above showing the country of origin of first time asylum applicants to the European Union (EU) in 2016 and answer each of the following questions.

- Name the **two** countries that had the highest percentage of first time asylum applicants to the EU in 2016.
- Explain briefly **one** reason why European Union member states are attractive destinations for asylum applicants.
- Calculate **X**, the percentage of first time asylum applicants in the category of *Other* country of origin.
- Explain briefly **two** challenges faced by EU member states due to the large number of people seeking asylum in the EU.

[20m]

5B. Tertiary Economic Activity

Account for the development of tourism **or** transport in a **Continental / Sub-Continental** region (not in Europe) that you have studied.

[30m]

5C. Secondary Economic Activity

Examine the impact of each of the following on the development of secondary economic activity in an **Irish** region that you have studied:

- Raw materials
- Markets.

[30m]

Question 6

6A. Complexity of Regions

Number of Daily Irish Speakers in Selected Gaeltacht Areas
2011 and 2016

Gaeltacht Area	2011	2016
County Kerry	2500	2000
County Donegal	7000	5900
County Mayo	1100	900

Amended from CSO

Examine the table above and answer each of the following questions.

- (i) Using graph paper, draw a suitable graph to illustrate this data.
- (ii) Explain briefly **one** strategy that could be used to address the decline in the number of daily Irish speakers in Gaeltacht areas.

[20m]

6B. Urban Development

Examine the factors that have influenced the development of **one** urban area in a **Continental / Sub-Continental** region (not in Europe) that you have studied.

[30m]

6C. European Union

Discuss the potential challenges facing the future development of the European Union with reference to factors such as political union, economic union and sovereignty.

[30m]

SECTION 2 – ELECTIVES

Questions 7 to 12

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

Patterns and Processes in Economic Activities (Questions 7, 8 and 9)

OR

Patterns and Processes in the Human Environment (Questions 10, 11 and 12)

All questions carry 80 marks.

PATTERNS AND PROCESSES IN ECONOMIC ACTIVITIES

Questions 7 to 9

Question 7

7A. Ordnance Survey Map

Examine the 1:50 000 Ordnance Survey map and legend accompanying this paper.

Draw a sketch map to half scale of the Ordnance Survey map **south of northing 44**.

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

- The built up area of Sligo
- The entire route of the N16 road
- The railway line
- The reservoir.

[20m]

7B. Multinational Company

Examine the impact of each of the following on the operations of **one** multinational company that you have studied:

- The product life cycle
- Developments in information technology.

[30m]

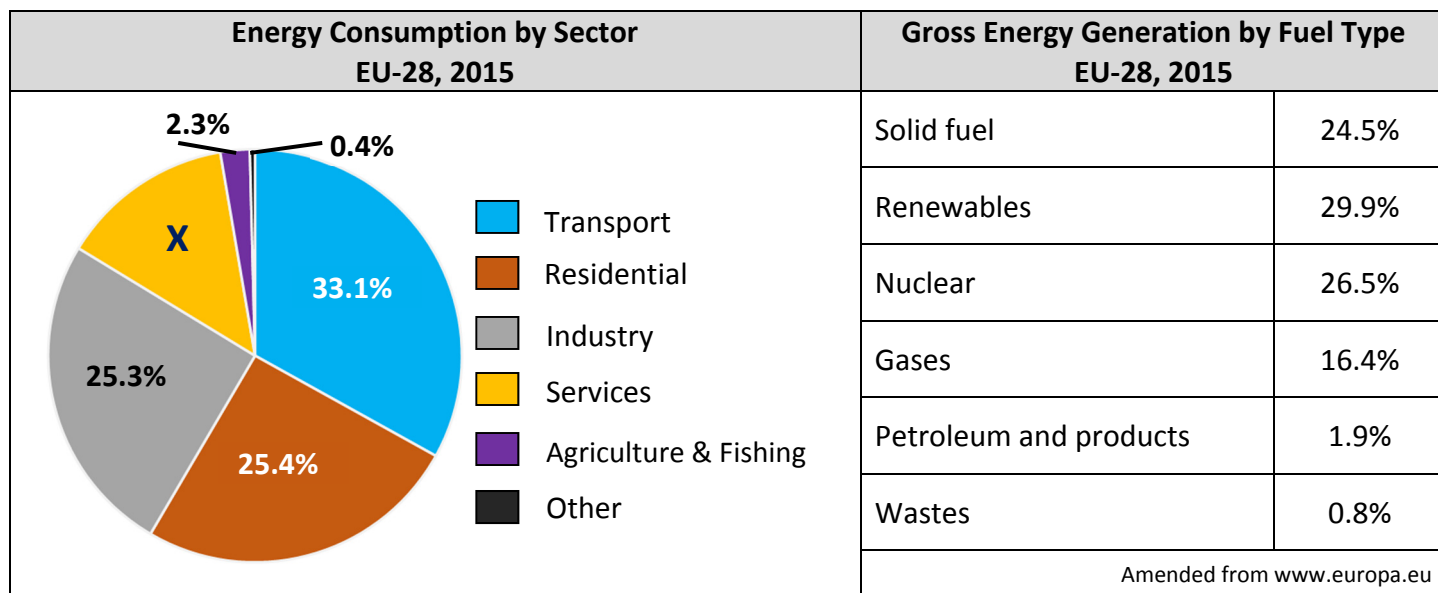
7C. Economic Activities – Environmental Impact

Discuss how conflict may develop between economic interests and environmental interests as a result of the exploitation of resources, with reference to **two** examples that you have studied.

[30m]

Question 8

8A. Energy



Examine the information above and answer each of the following questions.

- (i) What percentage of EU-28 energy was consumed by transport in 2015?
- (ii) Calculate **X**, the percentage of energy consumed by the services sector in the EU-28 in 2015.
- (iii) Which fuel was used to generate exactly 24.5% of EU-28 energy in 2015?
Name **one** example of this type of fuel.
- (iv) Which fuel was used to generate the highest percentage of energy in the EU-28 in 2015?
- (v) Name **two** examples of renewable energy.
- (vi) Explain briefly **one** reason why nuclear energy is not used in Ireland.

[20m]

8B. European Union – Trade

Describe the current trading patterns of the European Union (both internal trade and external trade) and explain the factors that influence these trading patterns.

[30m]

8C. Economic Development – Developed Economy

Examine the impact of **two** of the following on the development of footloose industries **or** financial services **or** mass tourism in a developed economy that you have studied:

- Physical factors
- Human factors
- Political factors.

[30m]

Question 9

9A. Irish Trade

Irish Exports by Category of Export and by Area of Destination (€ millions)

	Agricultural	Fishing	Industrial	Unclassified	Total Exports
Jan-July 2016	€m	€m	€m	€m	€m
Great Britain and Northern Ireland	1 741	133	6 139	316	8 329
Other EU States	1 279	190	24 330	115	25 914
Rest of World	670	94	31 508	9	32 281
Total	3 690	417	61 977	440	66 524
Jan-July 2017	€m	€m	€m	€m	€m
Great Britain and Northern Ireland	1 950	113	6 975	339	9 377
Other EU states	1 561	239	24 493	253	26 546
Rest of World	814	96	33 946	231	35 087
Total	4 325	448	65 414	823	71 010

Amended from CSO

Examine the table above and answer each of the following questions.

- Which category of export to Great Britain and Northern Ireland experienced a decline in value from January-July 2016 to January-July 2017?
- What was the total value of exports (€ millions) to European Union (EU) member states in the period January-July 2017?
- What percentage of total exports were *Agricultural* exports in the period January-July 2017?
- Name any **two** examples of Irish exports in the category of *Unclassified*.
- Explain briefly **two** potential impacts of future changes to European Union membership on Irish trade.

[20m]

9B. Economic Development

Discuss the Human Development Index (HDI) and Gross National Product (GNP) as measures of levels of economic development.

[30m]

9C. Location of Economic Activity

Answer each of the following questions with reference to the 1:50 000 Ordnance Survey map **or** the aerial photograph **or** with reference to **both** the Ordnance Survey map and the aerial photograph.

- (i) Name **two** renewable energy sources that could be developed in the area and give a suitable location for each using a grid reference or accepted notation.
- (ii) With reference to **one** of the renewable energy sources named by you in part (i), explain the advantages of your chosen location.
- (iii) Explain **one** reason why local people might object to this development.

[30m]

PATTERNS AND PROCESSES IN THE HUMAN ENVIRONMENT

Questions 10 to 12

Question 10

10A. Aerial Photograph

Draw a sketch map of the aerial photograph, half the length and half the breadth.

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

- The river
- A large historical ruin in the middle ground
- Emergency services depot in the left background
- A carpark in the left foreground.

[20m]

10B. Urban Planning

Examine the effectiveness of urban planning strategies in solving **two** of the following urban problems, with reference to any urban area(s) that you have studied:

- Housing
- Transport
- Pollution.

[30m]

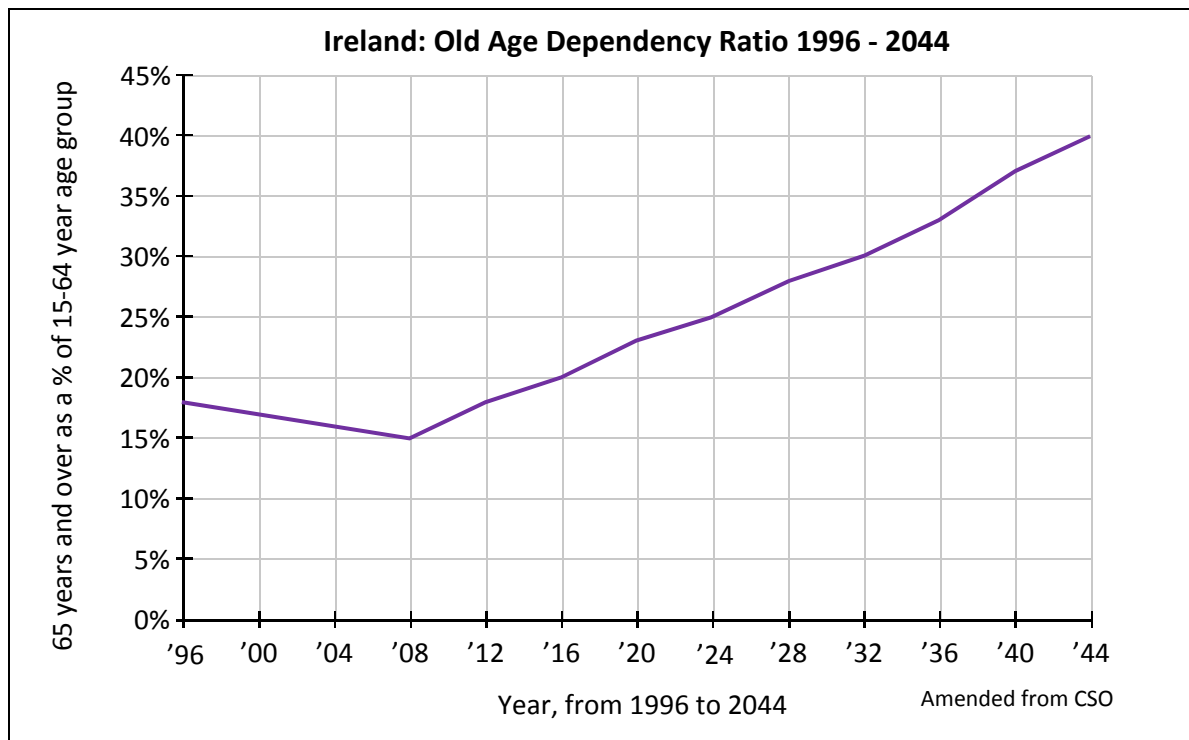
10C. Migration

Discuss how recent trends in migration are impacting on migration policy in Europe.

[30m]

Question 11

11A. Irish Population



Examine the graph above and answer each of the following questions.

- (i) What will the old age dependency ratio (%) be in 2024?
- (ii) In what period of years in the graph was the old age dependency ratio declining?
- (iii) How many years will it take for the old age dependency ratio to double from its 2016 level?
- (iv) In which year in the graph was the old age dependency ratio at its most favourable level economically?
- (v) Explain briefly **one** reason for an increase in the old age dependency ratio.
- (vi) Explain briefly **two** effects of an increase in the old age dependency ratio.

[20m]

11B. Settlement Distribution

Examine the 1:50 000 Ordnance Survey map of Sligo accompanying this paper.
Using evidence from the map, account for variations in settlement distribution in the area shown on the map.

[30m]

11C. Future Urbanism

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

[30m]

Question 12

12A. Urbanisation

Urban Population Statistics in Selected Regions

Region	Number of people living in urban areas (in thousands)			% of total population living in urban areas		
	1990	2014	2050	1990	2014	2050
World	2 285 031	3 880 128	6 338 611	45	54	66
North America	212 935	291 860	390 070	75	81	87
Sub-Saharan Africa	132 971	345 617	1 136 822	27	37	55
Europe	505 991	545 382	581 113	70	73	82
Ireland	2 009	2 944	4 474	57	63	75

Amended from World Urbanisation Prospects, Highlights, 2014 Revisions, United Nations

Examine the table above showing the number of people living in urban areas and the percentage of the total population living in urban areas in selected regions.

Answer each of the following questions.

- (i) Which **two** regions will have the greatest percentage of their total population living in urban areas by 2050?
- (ii) Calculate the percentage change in the number of people living in urban areas in Ireland between 2014 and 2050.
- (iii) Explain briefly **one** reason for this change in the number of people living in urban areas in Ireland.
- (iv) According to the table, the number of people living in urban areas in Sub-Saharan Africa will increase significantly by 2050.

Explain briefly **two** potential problems resulting from this increase.

[20m]

12B. Population Characteristics – Ireland

Describe and explain how the characteristics of Ireland's population have changed since the 1950's.

[30m]

12C. Urban Expansion

As cities grow and expand they impact on the surrounding rural areas.

Discuss this statement with reference to example(s) that you have studied.

[30m]

SECTION 3 – OPTIONS

Questions 13 to 24

Attempt **ONE** question.

All questions carry 80 marks.

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.** We live in an interdependent global economy. Actions or decisions taken in one area have an impact on other areas.

Examine this statement with reference to each of the following:

- Global environmental issues
- Impact of social and political decisions.

[80m]

- 14.** Views of development and underdevelopment are subject to change.
Discuss this statement with reference to contrasting approaches to development.

[80m]

- 15.** Sustainability is a model for future development.
Discuss this statement with reference to **three** of the following:

- Resource use
- Fair trade
- Justice issues
- Self-reliance.

[80m]

Geoecology

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.** Soil characteristics are affected by a combination of processes operating in their immediate environment.

Examine any **three** soil processes that affect soil characteristics.

[80m]

- 17.** Describe and explain the general composition and characteristics of any **one** soil type.

[80m]

- 18.** Describe the specific climatic and soil characteristics experienced in **one** biome that you have studied **and** examine the impact of these specific climatic and soil characteristics on the development of vegetation in this biome.

[80m]

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. Examine the importance of religion as a cultural indicator. [80m]
20. Discuss the idea of multiculturalism as it applies to the modern world. [80m]
21. Examine the influence of physical and political boundaries on the concept of identity. [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. Describe the formation of each of the following **and** discuss its impact on weather patterns:
 - Mid-latitude depressions
 - Anticyclones
 - Land and sea breezes.[80m]
23. Examine **one** distinctive global climate type that you have studied with reference to **three** of the following:
 - Temperature
 - Precipitation
 - Location
 - Pressure belts (air circulation).[80m]
24. Climate changes over time and space. Discuss. [80m]

There is no examination material on this page

Leaving Certificate 2018 – Higher level

Geography

Friday 8 June

Morning 9:30 – 12:20