N.B. Remember to return this paper with your answer-book.
Otherwise, marks will be lost
1. Examine this diagram of a limestone pavement.

   a. Name the landforms:

      A. ______________________________

      B. ______________________________

   b. Name a region where such landforms may be found:

      ______________________________

   c. Of what type of weathering are such landforms a result?

      Mechanical ☐ OR Chemical ☐

      [10]
2. Examine this diagram of a Glacial landscape.

a. Apply the labels A to C as appropriate to the landforms shown, using the table below:

<table>
<thead>
<tr>
<th>Landform</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arete</td>
<td></td>
</tr>
<tr>
<td>Corrie/cirque</td>
<td></td>
</tr>
<tr>
<td>Pyramidal peak</td>
<td></td>
</tr>
</tbody>
</table>

b. All these landforms are the result of:

Deposition □ OR Erosion □ [10]
3. Earth’s Structure

Examine this diagram.

Write each of these labels in the correct space beside letters A to E.

Ocean, Core, Crust, Mantle, Continent.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
</tr>
</tbody>
</table>

4. Rivers and Glaciers

Assign the above labels as appropriate to each landform below.

<table>
<thead>
<tr>
<th>V-shaped valley</th>
<th>Moraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esker</td>
<td>U-shaped valley</td>
</tr>
<tr>
<td>Meander</td>
<td></td>
</tr>
</tbody>
</table>

[10]
5. Earthquakes

Answer these questions.

1) **B** is the point where the actual earthquake occurred. It is known as the:  
   epicentre / focus / richter point.

2) **A** is the point on the earth’s surface directly above where the earthquake occurred. It is known as the: epicentre / focus / hot point.

3) Earthquakes are measured using an instrument called a:  
   seismograph / thermograph / cardiogram.

4) Earthquake magnitude is classified according to the:  
   Mercalli Scale / Beaufort Scale / Richter Scale.

6. Regions - Ireland

<table>
<thead>
<tr>
<th>Type of Region</th>
<th>Example</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Peripheral</td>
<td>Cool Temperate Oceanic</td>
<td>A</td>
</tr>
<tr>
<td>Economic Core</td>
<td>Gaeltacht</td>
<td>B</td>
</tr>
<tr>
<td>Language</td>
<td>County</td>
<td>C</td>
</tr>
<tr>
<td>Administrative</td>
<td>Ireland's BMW</td>
<td>D</td>
</tr>
<tr>
<td>Climate</td>
<td>Dublin</td>
<td>E</td>
</tr>
</tbody>
</table>

Match **each** type of region with the correct example in the spaces provided.
7. **Ordnance Survey**

Examine the Ordnance Survey extract of Mullingar supplied.

The scale of this map, expressed as a Representative Fraction [RF] is ____________.

This means that one ____________ on the map represents _______________ on the ground.

Each grid square represents ____________ square __________.

8. **Ordnance Survey**

Examine again the OS extract supplied.

<table>
<thead>
<tr>
<th>Grid Reference</th>
<th>Feature</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>N 426 587</td>
<td>Railway Station</td>
<td>A</td>
</tr>
<tr>
<td>N 434 527</td>
<td>Triangulation Point 171m</td>
<td>B</td>
</tr>
<tr>
<td>N 469 563</td>
<td>Castle</td>
<td>C</td>
</tr>
<tr>
<td>N 377 585</td>
<td>Nature Reserve</td>
<td>D</td>
</tr>
<tr>
<td>N 476 507</td>
<td>Stream Confluence</td>
<td>E</td>
</tr>
</tbody>
</table>

Match each grid reference with the correct feature in the spaces provided.

9. **A Barrel of Crude Oil [Figs in US Gallons]**

Examine this chart, showing the various products of refining crude oil.

a) How many gallons are there in total in a barrel of crude? ____________

b) Which product holds the largest share?: ________________

c) Name the process of making these products from crude oil: ________________

d) What type of chart is this? ________________
Examine this map of regions in Europe.

a) Name the regions numbered 1 to 3:
   1. ___________________________; 2. ___________________________;  
   3. ___________________________.

b) How many counties are contained in region 3?: _____________
Examine this satellite image of part of the west coast of USA and Canada. Associate each of the letters A to E on the image with the appropriate features below:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A River Valley</td>
<td></td>
</tr>
<tr>
<td>Coastal fog bank</td>
<td></td>
</tr>
<tr>
<td>Snowfields</td>
<td></td>
</tr>
<tr>
<td>Large Island</td>
<td></td>
</tr>
<tr>
<td>Thin cloud</td>
<td></td>
</tr>
</tbody>
</table>
12. More Images

Examine these images.

Number each of the following descriptions:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Image Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dormant Volcano</td>
<td></td>
</tr>
<tr>
<td>Hurricane</td>
<td></td>
</tr>
<tr>
<td>Atlantic Depression</td>
<td></td>
</tr>
<tr>
<td>Erupting Volcano</td>
<td></td>
</tr>
</tbody>
</table>
PART TWO – STRUCTURED QUESTIONS – 300 MARKS

Candidates must attempt THREE questions, as follows:

- **Two** questions from Section 1 [Questions 1 to 6]
- **One** question from Section 2 [Questions 7 to 12]

**THESE QUESTIONS TO BE ANSWERED IN THE ANSWERBOOK**

SECTION 1 - CORE

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

Attempt **ONE** question

**Question 1**

Examine the Ordnance Survey extract of the Mullingar region supplied.

A. Draw a sketch-map of the area to show:
   - Two lakes
   - The Royal Canal
   - The Royal Canal Supply
   - A river
   
   [30]

B. Examine the formation of any **two** Irish landforms, with reference to the surface processes which formed them.

   [40]

C. Explain **one** way in which human activities can have an effect on how natural surface processes act

   [30]
Examine this map of global crustal plates.

A. With reference to the labels shown:
   a) Name the crustal plates A: _______________________ and B ______________________
   b) Name the type of plate margin at C _____________________________ and
      at D _______________________________.

B. Explain how Plate Tectonics helps us to understand the worldwide distribution of earthquakes and volcanoes.

C. Examine briefly how:
   (i) earthquakes are measured
   (ii) earthquakes may be predicted one day.
A. Name an example of each of the three rock classes and give Irish locations for any two of them.  

B. Name one type of rock which is common in Ireland. Explain:
   • How such rocks are formed
   • How rock structure influences the development of landforms.  

C. Examine in detail one way in which humans make economic use of rocks.
Question 4:

A. Draw a sketch-map of Ireland. On it mark and name two contrasting regions. [30]

B. Select a non-Irish, European region and examine two factors which have influenced the development of its agriculture. [40]

C. Examine the development of one important economic activity in a non-European region of your choice. [30]
Question 5:

A. Examine the Ordnance Survey extract of Mullingar supplied. Draw a sketch-map of the area and on it mark and name:

- An area of mixed woodland
- The built-up area of Mullingar town
- A rural area with no evidence of modern settlement
- A rural area with linear settlement
- An area defined as a Nature Reserve

[30]

B. Explain, with reference to an example you have studied, the development of one economic core region in Europe.

[40]

C. Explain one challenge facing one non-European region you have studied.

[30]
Question 6:

A. Examine the aerial photograph of part of Mullingar town supplied.
   Draw a sketch-map of the area shown on the photograph.
   On it mark and name:
   
   1. **Two** churches
   2. **Two** connecting streets
   3. **Three** areas with different types of urban land-use.

B. Examine the development of **two** contrasting economic regions in Ireland.

C. Examine the development of **one** non-Irish cultural region you have studied.
Ireland Unemployment Rate as % of Total Workforce: 1993 – 2003

<table>
<thead>
<tr>
<th>Year</th>
<th>1993</th>
<th>1995</th>
<th>1997</th>
<th>1999</th>
<th>2001</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15.6</td>
<td>12.3</td>
<td>9.9</td>
<td>5.6</td>
<td>3.9</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Examine this table.

A. Use graph paper to draw a graph suitable to illustrate these data.  

B. Examine two reasons for the trend shown by these data.  

C. Explain one example of the economic decline of a region you have studied.
A. Examine this chart, showing how the final retail price of a banana is shared among all of those along the production chain.

a) Calculate the percentage received by the picker/grower.
b) Suppose the retail price of a banana is 20c. Calculate how much is received by:
   a. The picker/grower
   b. The retailer
   c) Name two other similar commodities.

B. Explain why the producers of commodities such as bananas receive so little of the final retail price.

C. With reference to an example you have studied, explain one advantage and one disadvantage for Ireland to depend on multinational companies setting up business here.
### Growth Rates and Shares of Ireland’s Total Primary Energy Requirement

<table>
<thead>
<tr>
<th>FUEL</th>
<th>Growth % 1990 - 2003</th>
<th>Av Annual Growth Rate % 1990 - 2003</th>
<th>Shares % 1990</th>
<th>Shares % 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>-11.6</td>
<td>-0.9</td>
<td>23.0</td>
<td>12.9</td>
</tr>
<tr>
<td>Peat</td>
<td>-38.3</td>
<td>-3.6</td>
<td>14.4</td>
<td>5.7</td>
</tr>
<tr>
<td>Oil</td>
<td>86.6</td>
<td>4.9</td>
<td>45.5</td>
<td>54.1</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>154.8</td>
<td>7.5</td>
<td>15.4</td>
<td>24.9</td>
</tr>
<tr>
<td>Renewables</td>
<td>54.2</td>
<td>3.4</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>57.0</td>
<td>3.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Growth Rates and Shares of Ireland’s Total Primary Energy Requirement by Sector

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>Growth % 1990 - 2003</th>
<th>Av Annual Growth Rate % 1990 - 2003</th>
<th>Shares % 1990</th>
<th>Shares % 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>23.1</td>
<td>1.6</td>
<td>27.2</td>
<td>21.4</td>
</tr>
<tr>
<td>Transport</td>
<td>122.8</td>
<td>6.4</td>
<td>21.9</td>
<td>31.2</td>
</tr>
<tr>
<td>Residential</td>
<td>27.1</td>
<td>1.9</td>
<td>16.1</td>
<td>19.3</td>
</tr>
<tr>
<td>Commercial/Public</td>
<td>88.1</td>
<td>5.0</td>
<td>16.1</td>
<td>19.3</td>
</tr>
<tr>
<td>Agriculture</td>
<td>23.7</td>
<td>1.6</td>
<td>3.5</td>
<td>2.8</td>
</tr>
</tbody>
</table>

A. Examine the tables above.

1) Which fuel showed the greatest growth rate over the period?
2) Which fuel showed the greatest change in share 1990/2003 and calculate the change in %
3) Calculate the % share for the Residential sector in 2003.

B. Explain the economic **and** the environmental costs of the 122% growth in the Transport sector.

C. Examine the potential of developing renewable energy sources in the near future.
A. Study this chart, showing Irish Migration Patterns between 1987 and 2004.

- In which year did emigration peak?
- When did immigration first exceed emigration?
- Calculate the difference between emigration and immigration in 2003.

[30]

B. Study the 1:50000 Ordnance Survey extract supplied with this paper.

1) Name and locate, using grid references, two patterns which can be identified in the rural settlement of the region shown on the extract.
2) Explain why each of the patterns developed.

[30]

C. Examine the impact of rural-urban migration in Ireland in the past 25 years on (i) rural areas and (ii) urban areas.

[40]
Question 11:

A. Examine the Ordnance Survey extract of Mullingar supplied.

1) Name and give a six-figure grid reference for three types of antiquities on the extract.
2) Explain the development of the modern rural settlement pattern in grid square N4755. [30]

B. Explain two of the major social problems caused by rapid urban growth. [30]

C. Examine one positive and one negative aspect of the Irish Government’s National Development Plan to date. [40]

Question 12:


<table>
<thead>
<tr>
<th>Age [years]</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 – 85+</td>
<td>436,001</td>
<td>11</td>
</tr>
<tr>
<td>15 – 64</td>
<td>2,653,774</td>
<td>68</td>
</tr>
<tr>
<td>0 – 14</td>
<td>827,428</td>
<td>21</td>
</tr>
<tr>
<td>Totals</td>
<td>3,917,203</td>
<td>100</td>
</tr>
</tbody>
</table>

A. Examine this table. Calculate the Dependency Ratio for Ireland. [25]

B. Examine one positive and one negative effect of such a dependency ratio for Ireland. [50]

C. Explain one major factor which has global impact on human mortality rates. [25]