Sandstone to – quartz

Limestone to marble

Hydraulic action

Compressed air

Attrition

Abrasion

Overgrazing   
over cropping

Deforestation

Question 3

3(A)

1. 40%
2. 1m
3. Portmarnock
4. 40 cm
5. The constant changing of the landscape via the process of isostasy
6. The potential loss of homes can lead to an increase in homelessness within communities and putting additional strain on the government. Loss of land needed for agriculture can lead to starvation for these communities

B

Physical weathering the breakdown of rocks into smaller pieces while not changing the chemical makeup of the rock.

Freeze Thaw action: is a type of physical weathering found typically found in mountains regions where there is constant change in temperature. The Polar Regions have a lot of this due to the multiple freezing and thawing cycles in short period of time.

Freeze thaw starts when water gets into the cracks present in a rock during the night or cold weather the water freezes in the crack. During freezing the water can expand in volume by up to 9 times and this puts extreme pressure on the cracks of the rocks.

When the temperature warms up again the ice melts back into water and some of the pressure is relived on the rocks but it does not fully recover. If the water remains and continues to freeze eventually the crack becomes so big that it cannot be supported and it collapses.

During the collapse a type of rock type called scree is formed this can be seen at the bottom of mountains such as the sugar loaf. Scree is sharp and jagged and suggests that it was ripped away from its original position but the chemical makeup does remain the same

Chemical weather is the breakdown of rocks using chemical process, the chemical makeup of rocks change or the rocks are dissolved

Carbonation: is the breakdown of rocks that contain high levels of Calcium Carbonate such as limestone. When rain falls it absorbs carbon from the atmosphere making it slightly acidic as it falls if the rain lands in soil and continues to travel it becomes more acidic. When it comes into contact with a rock that is high in calcium carbonate it binds with it and creates Calcium Bi-Carbonate. This is mixture is able to washed away in solution and given enough time a number of landscapes can be developed by this included karst and caves.

3C

Metamorphic rocks are formed when igneous and sedimentary rocks are subject to extreme pressure and heat. It can come in 2 forms

Contact: is when magma spots a weak gap in the crust and pushes its way up and subjects other rocks to extreme heat this leads to the rocks changing

Regional is over a much larger area then Contact and is normally found at plate boundaries the rocks here also subject to extreme heat but also extreme pressure that changes the structure of the rock.

Most of Irelands metamorphic rocks where formed 400 million years ago during a period of folding

Marble is an example of Ireland’s metamorphic rocks. Its parent rock is limestone. When limestone is subjected to extreme heat and pressure the fossils it contains get broken down a melted. It also cools slower allowing large crystals to form. Marble can be many different colours due the impurities it may have such as green marble in Connemara. Marble is used for statues and headstones all over the world

Quartzite is another example of Ireland’s metamorphic rocks. Its parent rock is sandstone. When sandstone is subjected to extreme heat the silica and quartz within melt and ‘cook’. As they do they destroy the strata present within the rock and as it cools it forms larger crystals and is not in layers. The new material is more resistant to erosion and weather then its parent material and can still be seen as the tips of mountains such as the Sugarloaf in Wicklow. It is also used for kitchen countertops

Question 2

A

1. Tear
2. Focus
3. epicentre
4. Rift valley
5. As rocks try to move past each other they can get caught on each other and pressure builds up
6. The shaking of the ground can lead to soils with higher water content becoming more liquidly as the water is pushed to the surface
7. Increased building standard e.g. forcing all new builds to have earthquake resistant foundations in order to stop them from collapsing

B

i

Costal Landform Cliffs:

Costal Erosion if effected by a number of factors:

Hydraulic Action: is the force of the water on a coastline itself it can up to 25 tons of force per metre if the way is powerful enough

Compressed air: as air is pushed into cracks by the water it becomes compressed when the water moves away the air rapidly expands and this creates an explosion like effect that breaks down the cliff further.

Abrasion: is when the wave has small rock inside it and it uses them to smash against the coastline

Attrition is when the small rocks hit against each other and breakdown into smaller pieces

The formation of the cliff:

Waves hit the cliff and with hydraulic force small particles fall off the coastline. Air is compressed by the waves and when it decompresses it is creates an explosive force that breaks down the coastline further

The wave is then armed with smaller rocks and throws them against the coastline leading to an increase in the breakdown of the coastline.

Eventually a notch is created in the coastline and it begins to undercut itself. As the size of the notch increases the coastline above cannot sustain the own weight and collapses. Thus creating a cliff. The material that fell into the water slopes slowly down into the ocean and provides friction for the waves thus making them break soon.

Eventually a wave cut platform is formed which is a flat area that waves have to cross before reaching the cliff and it makes the cliff inactive. This can be seen with the Slieve league cliffs in Donegal

C

Rocks create a distinctive landscape the example I have studied is karst landscapes that are present in the Burren County Clare.

A karst landscape is formed when there is a lack of soil cover over a large area of limestone. It forms as a result of limestone being extremely suitable to weathering in particular chemical weathering and carbonation. Carbonisation is the breakdown of calcium carbonate to calcium bicarbonate which is able to be washed away in a solution.

Limestone is the prefect candidate for this as it has a high content of calcium carbonate and it made of strata and has cracks called grikes throughout making it easier to weather. Freeze thaw action also plays a part in the formation of the landscapes.

One of the main features of the landscape is the swallow holes. This is when a river is flowing over limestone. The limestone breaks down and a hole is formed and the river continues underground it this continues to happen upstream so the holes may not contain water.

Another feature is that of caves. Due to the breakdown of the rock by the rivers large caverns can open up. These start out filled with water but over time have drained and some are tourist attractions i.e. the Ailewee caves in the Burren. Within the caves stalagmites and stalactites may form.

Stalactites form when water drips from the ceiling of a cave it leaves a small bit of calcium behind and stalagmites are formed when water lands on the floor of the cave it leaves a small bit of calcium behind before it flows away. Over thousands of years these can slowly build up to form a pillar

Question 5

1. 5.1 million people
2. 28.43%
3. Huge job market present in Dublin due to large MNCS having their European headquarters located there
4. 61100
5. The total amount of people immigrating to Ireland takes away the people emigrating.
6. Due the recovery of the economy after Covid and the 2008 crash and the increased number of jobs in the country

5 b

The region I have chosen is the Paris Basin and the Activity is transport:

One of the major factors that influence transport is the Paris basins extensive rail network. The rail network connects Paris with many destinations across Europe. Its high speed rail known as the TGV which regularly hits speeds of up to 320 kph. It connects it with all of Frances other urban centres which has greatly reduced the demand for commercial domestic flights within France reducing the need to construct costly airports. The TGV also links Paris with Brussels and Amsterdam as well as Frankfurt. The rain system also has the Eurostar train which uses the channel tunnel to link the city with London via high speed rail. The Basin itself has its own internal rail system that known as the RCR that transports commuters from around the Basin to Paris

The Paris Basin as a number of International Airports mostly focusing on the Paris. The 2 major ones are Paris Charles de Gaulle (CDG) International and Paris Orly. CDG is the home of the massive internal airline Air France- Royal Dutch Airlines (KLM). The airport serves a number of international destinations but has a wider range of options outside of the EU which flights to both North and South America as well as many of its former colonies in Africa. Orly on the other hand is mainly served by budget airlines such as Ryanair opening up more opportunities for tourism in the region

3c

The region I have studied is Brazil and I will be using climate and market:

Brazil is a very large nation and as such as varied climate. In the centre of the country has the perfect climate for growing of wheat. This region has also had a massive increase in the production of wheat due to large MNC moving into the area and provides mechanisation. Which is providing the farmers with the extremely expensive equipment to prepare the land for farming?

Brazils climate make the perfect location to grow coffee and it has become famous for its taste and over 30% of the world’s coffee comes from Brazil. In contract some of the regions in the North West of the country can only maintain unprofitable substance farming that is more labour intensive and has force many people to move the cities

Markets are a human factor that affects the agriculture of Brazil.

The south east of the country is home to multiple cities that have over 1 million people these locations need lots of food and thus Brazil is encouraged to grow the food required.

Many MNC have moved into Brazil for the agriculture. Nestle has created coffee plantations that export the coffee all over the world.

In recent years Brazil has become well known for their beef and many MNCs have funded farms in order to get it companies such as Mc Donald’s and burger king have invested heavily in the Brazilian Agriculture to ensure the quality of the product they are getting .

Brazil is also part of Mercosur which is the South American Equivalent of the European Union which gives Brazil access to a market of nearly 300 million people without any Tariffs.

17

Human Activity has a huge impact on soil characteristics and can lead to soil erosion. The human activities I will be discussing are Overgrazing, over cropping and deforestation in this essay I will be looking at the Sahel region of Africa as my example

Overgrazing: for Centuries farmers have be using the grasslands at the southern edge of the Sahara to graze their herds of sheep cows and goats. But over the last few decades rising population has led sharp increase in herd sizes. This along with the completion for land has led to many herds staying in the one area and this leads to a loss of vegetation cover and leads to a reduction the amount of humus being produced. Wells are built by the famers in order to provide their animals with water but due to the lack of rain in the region the water from the wheels has taken hundreds of years to compline and the use of the well ends up leeching the soil and these leads to there being no water in the pores of the soil making it extremely hard if not impossible for the plants to grow and allows clear horizons to form in the soil. The content of the soil also changes due the increased amount of sand that arrives in the region and due to lack of vegetation to stop it.

Over cropping is a huge problem in the Sahel. Over the past few decades governments have encouraged the growth of cash crops to deal with rising national debt. This combined with huge population growth as led to a lack of land available for farming. Because of this good farming practises are not upheld and the soil is planted on year after year leading to a field becoming sterile. The reason this happens is because of need to grow on as much land as possible in other to survive so many famers can’t afford to leave a field fallow. Once the soil is sterile it leads to a sharp reduction in the amount of organic material in the soil and leads to a sharp drop off in Humus. Due to the lack of fuel in the region animal waste is burned instead of being used as fertiliser further adding to the problem of lack of organic matter in the soil and leads to the soil becoming very light in colour as there is no humus

Deforestation is a huge factor that affects the soil characteristics. Due the main fuel source in the region being wood many people from urban centres cut down trees. This has led to people needing to travel further every day to get wood or burn animal waste which leads to decreased fertilisation. Trees are also cut down to make more room for livestock in the region and for a number of years it was not worth it to grow crops but instead cut down the trees and sell the wood. Trees are cut more than 30 faster than they can be replanted and regrown this combined with the failure of the great green wall, a project that was designed to stop the spread of the Sahara desert. Has led to the biggest change in soil characteristics within the region. Trees acted like a barrier for the sand and with them gone the amount of sand content in the soil has rapidly increased and. The Trees also affected the humus content of the soil and the colour as when the leaves died they would fall and would be broken down and allow for fertilisation to occur. The structure of the soil has also changed as it is now much loser then before due the tree roots not being present to hold the soil in place. This has allowed the soil to be blown away by wind and washed away by the occasional heavy downpour

Overall Human activities have greatly affected the charactistics of the soil in the Sahel region of Africa and it has led to them becoming less fertile as a result of the negative changes in the characteristics.