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Studyclix Sample Solutions

Junior Cycle Sample Paper 2021

Marking Scheme

Geography

Common Level

Question 1

a.

i.

India

ii.

Loss of life (17 people killed) / death / destruction of property (44 houses in Malin village were flattened)

iii.

Trees and forests play important roles in reducing landslide risk in many different ways. Firstly, Tree roots reinforce the different layers in the soil. The roots act as an anchor, and anchor the soil to bedrock, preventing it from moving down slope. If the trees and vegetation is removed by deforestation it removes this anchor. Trees also reduce landslide risk by reducing soil moisture levels. When soil is saturated, the water content in the soil weighs down and lubricates the soil and therefore is more likely to move down hill. Roots in trees absorb this water and as a result this helps prevent mass movement.

iv.

Afforestation is the planting of trees to produce a forest. Trees help slow down climate change. Trees help reduce carbon dioxide as they absorb and store the gas through photosynthesis, while releasing oxygen back into the air for us to breathe. Trees improve our air quality by filtering harmful dust and pollutants such as ozone, carbon monoxide, and sulfur dioxide from the air we breathe.

b.

Example of natural disaster: An Earthquake.

Where it happened: Japan 2011

Long-term responses: The Japanese Earthquake occurred on March 11, 2011 and measured 9.0 on the Richter scale with 5,000 aftershocks. It cost the Japanese economy €254 Billion. However Japan experienced a fact recovery due to the Japanese government's long-term response plan to the disaster. They Came up with a €208 Billion 10 -year investment plan. They used this to restore farmland that had been destroyed due to a tSunami caused by the Earthquake. They used a portion of the money to rebuild homes and ports as well as industry and infrastructure. This has greatly helped to restore the Japanese economy. However there are still 54,000 people living in temporary housing.

(Case studies of volcanic eruptions, hurricanes, storms, or mass movement disasters are also valid answers.)

Question 2

a.

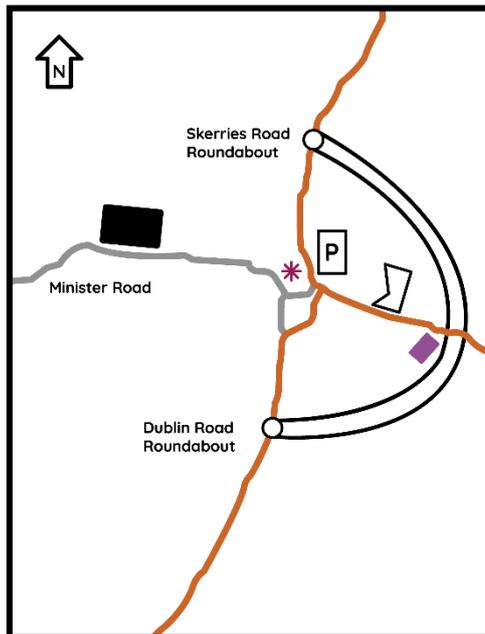
(i) Function	Evidence of function	(ii) Grid square on map
Residential	<i>The Forge</i> housing estate	B 3
Education	Lusk Community College	B 2
Religious	St Maccullins Church	A 2
Market	Lusk Town Centre	B 2

b.

0.8km

c.

Sketch Map of Lusk, 2020



LEGEND

○	ROUNDBABOUT
□ P	POST OFFICE
■	ROUND TOWER GAA CLUB
□	LUSK UNITED FC
*	LUSK HERITAGE CENTRE
⌒	RATHMORE ROAD
—	REGIONAL ROAD
—	MAIN ROAD
◇	LUSK COMMUNITY HOME

Question 3

a.

i.

Coastal Erosion

ii.

Regional Road

iii.

Evidence 1: Waymarked walks; Trailheads

How it can be used by tourists: This is used for hiking and hillwalking.

People who visit the area can safely take a walking tour and take in the scenery and the natural beauty around Mount Eagle and the coastline.

The walkway also brings tourists around the historical sites such as the many ringforts in the area

Evidence 2: Picnic site & Parking facilities

How it can be used by tourists: Firstly, if tourists are driving to the areas they have the parking facilities close to the walkway and the attractions. There are also a number of picnic sites for tourists to use as a meeting point or an area for rest and dining after visiting the sites in the area.

b.

Dear Councillor,

i.

I am writing to you today as I am concerned about the future of this coastal area and that there may be a collapse. There are a number of ways that coastal areas can be protected either by rock armour, sea walls, gabions or groynes. However, I would suggest that the council use Rock armour along the base of the cliff.

ii.

Rock armour are large boulders of resistant rock, like basalt as an example. These large boulders are placed in front of the land to protect the land and the road directly behind the land from the force of the destructive waves. It is the destructive waves that are causing undercutting, leading to an overhang and collapse. Eventually the coastline begins to retreat, which is what is happening here. When rock armour is put in place, a destructive wave crashes into the boulders it then loses its force and hydraulic action is reduced and so the coastline is protected from erosion. Rock armour is a quick and cheap way to protect our coastline. This has worked in other places around Ireland such as Lahinch in County Clare.

Thank you for reading my letter

Kind regards,
(Name)

Question 4

a.

Number	Feature
1	Meander
2	Bay
3	Delta
4	Headland
5	Sea Stack

b.

Chosen site: C

Explanation: First settlers moved to sites that would provide for their basic needs. The physical landscape was important when it came to their decision. Site C is beside the river. Rivers are not only a source of fresh drinking water but the water from the river provides rich soil (alluvial soils) for farming. This means the people of the settlement won't go hungry. They could also trade any extra crops with other towns. Rivers are natural routes for transport, travel and trade as well as defence. This site at C is also located on flat land. This is important as it is easier to build on flat land and it can then be defended. It is sheltered and protected by the river on the left and the mountains on the right. Finally, the site is close to natural resources. The land is flat, well drained, and fertile making it suitable for gathering food, hunting, growing crops and rearing animals. There is also a forest nearby and this would provide fuel, wood for burning and building materials.

Question 5

a.

i.

Subtropical

ii.

Temperate

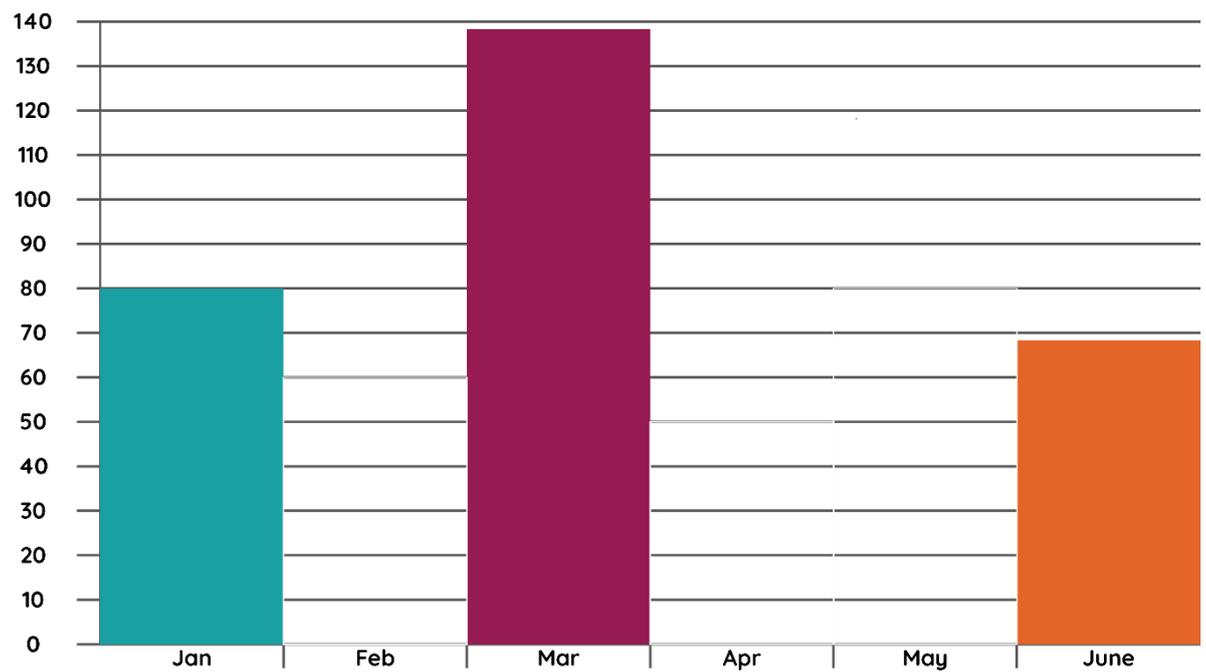
iii.

Tundra / Boreal

b.

i.

Monthly rainfall at Malin Head in the first six months of 2019



ii.
139mm

iii.
April

iv.
80 mm

c.

i.
Between 2016 and 2018

ii.
1. Problems for farmers as crops failed and livestock died
2. Problems for the population as there was large scale population displacement, hunger and malnutrition.

iii.
Graph B

iv.
Emergency Aid.
Although development aid would be a good choice for the long-term progress of a region, in this case emergency aid would be the better option. Emergency aid is given immediately after a crisis or disaster such as this drought experienced in Somalia. With this type of aid vital supplies of water, food, shelter and medicines are sent very quickly to the area or region that needs it. Shelter would include tents and blankets which are very important in saving lives. Water and food are sent with this aid directly to the people in need which also helps prevent further loss of life. This is why I would feel that emergency aid is the most appropriate in this situation.

Question 6

a.

i.

A

ii.

Freeze-thaw action happens when water is repeatedly frozen and thawed. This type of weathering occurs in upland areas as these areas experience rises and falls in temperatures sometimes below freezing point (0°C)

b.

Plucking, Abrasion

c.

Chosen Processes: Plucking and Abrasion

Explanation: There are several large lakes present in the area covered by the map. These lakes are known as tarn lakes and are formed when the ice is melted after an ice age. The empty hollow left behind is known as a corrie. When it fills with water they become known as tarn lakes. They can be found on the map at M002642 and L996654. Plucking is when meltwater seeps into the cracks and crevices in the rock in the ground. The melt water then refreezes. When it freezes ice forms around the rocks in the ground. When the ice sheet begins to move again, it plucks the pieces of rock away from the ground and carries them along the bottom of the ice sheet. Abrasion is when the ice uses the pieces of rock it had gained by plucking to scap away more rock from the ground. When the ice sheet moves the rocks act like a sandpaper scratching away at the land. Abrasion leaves behind long scratches on the landscape. These scratches are called striations and they tell us the direction the ice was moving. These two processes carve out a hollow on the side of mountains to form a corrie. Corries are seen on the map but can also be found in Bray in Co. Wicklow.

(For this answer you don't have to focus on Glaciation, you could have answered this using rivers or coastal processes. For example Hydraulic Action and Abrasion.)

Question 7

a.

Hurricane Ophelia

b.

October 2017

c.

Ireland

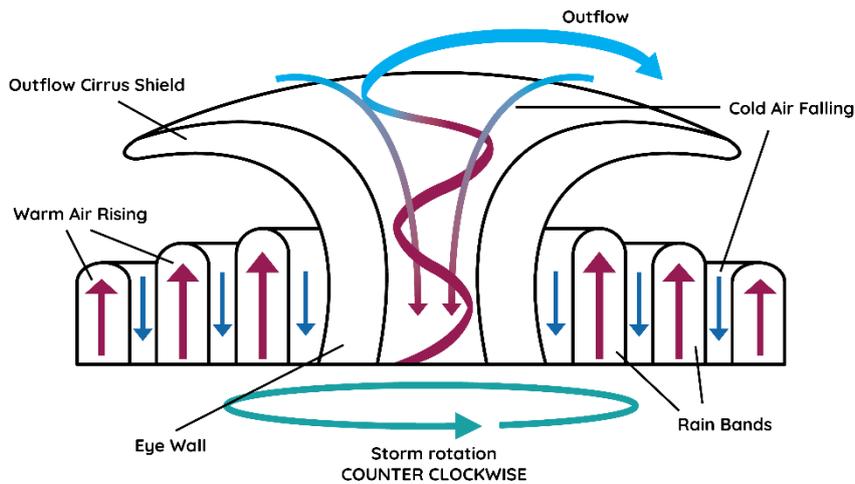
d.

Anemometer, wind speed

e.

Most hurricanes that form in the Atlantic move westwards to the Gulf of Mexico, but hurricane Ophelia moved northwards toward Ireland. It occurs when warm moist air rises over the ocean to create a low-pressure system. The air around these low-pressure rushes in to take the place of the warm air rising. As the warm air rises it cools and condenses to form clouds. All this movement of air creates wind. As the weather system develops it starts to spin because of the Coriolis effect. The storm began to move faster and became a category 3 hurricane. Eventually the storm weakened when it hit land because it was no longer being fed by the energy from the warm ocean water. By the time it hit Ireland it was below a category 1 bringing wind speeds of 120 kilometres per hour.

HURRICANE STRUCTURE IN THE NORTHERN HEMISPHERE



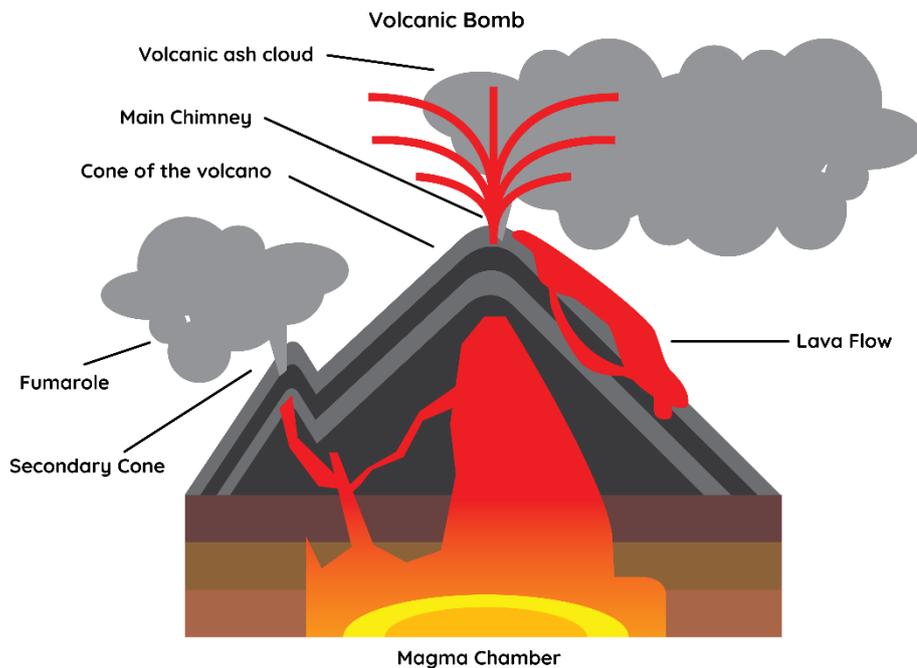
f.

I feel this is a significant weather event as it was unusual for hurricanes to form in the Atlantic to move toward Ireland. The impact of Ophelia was felt all over Ireland. There was major damage to property, power cuts, flooding and major disruption to transport as well as schools being shut. A lot of the disruption was due to the fallen trees and debris. Met Éireann issued the highest possible status red warning for the whole country.

Question 8

a.

i.



ii.

Basalt

iii.

True

b.

There are many negative impacts of volcanic eruption. Firstly, there is the loss of life. Mount St Helens is a mountain peak in the Cascade Range in the United State of America. A series of earthquakes occurred in 1980 and the mountain began to produce steam and a lava flow began. One side of the mountain began to bulge because of the pressure built up. It swelled by over 100 meters before a massive eruption happened. Huge clouds of steam, gas and ash erupted from the volcano. The eruption melted glacial ice and snow. The water along with the ash formed a mudflow that blocked shipping channels in the local river. The force of the blast along with the poisonous gasses that came from the volcano killed 57 people.

There are also great environmental impacts. Forests were wiped out for the surrounding hills. Trees as big as 2 meters were flattened to the ground as far as 25 km from Mount St Helens. Just under 7,000 woodland animals such as deer and bear were killed by the sheer force of the blast.

Volcanic Eruption can change weather patterns. When gas and dust particles are shot up into the air, they can block the sun's rays and cause a drop in temperature. In extreme cases it can cause acid rain which affects farming and forestry.

Volcanic eruptions also have a negative impact on the economy. 12 million farmed fish were killed, and 200 homes were destroyed. Because of the damage 300km of roads had to be rebuilt as well as 25km of railway needed to be replaced. Forests were destroyed because of the eruption meaning a loss of income for loggers and logging companies.

Question 9

a.

15

b.

Any two of the following: Job opportunities / better quality of life / escape the daily commute / lower housing costs / lower child care costs

c.

Businesses need high-speed broadband to compete with other businesses on a global scale. Rural businesses such as businesses in Skibbereen have always been at a disadvantage because of a lack of access to fast broadband. This means expansion and growth are slowed due to slow broadband speeds which stop country-based businesses reaching as wide a range of potential customers around the world. Slow broadband speeds may also affect customers looking at your site as when the site is slow to load customers are quick to leave the site for a faster one. It also allows people to work from a remote location or

from home meaning that the company can employ highly skilled workers from all over the country and the globe.

d.

i.

A

ii.

Globalisation is the process by which the world is increasingly interconnected through trade and cultural links. Ireland has a very globalised economy. Ireland is a member of one of the largest trading blocs in the world, the EU. As well as this Ireland has an interdependent relationship with the other countries in the world. This means Ireland trades with countries all over the world and this has led to an increase in ships entering Irish ports. Because of the large number of MNCs located here Ireland has very strong exports. Ireland is home to 1,000 MNC including 700 from the USA for example Pfizer, Apple, and Google. This has led to an increase of container ships coming and going from Irish ports as goods are delivered and exported around the world.

iii.

Air Travel

Question 10

a.

i

1,136,000

ii.

Natural increase happens when the birth rate is higher than the death rate and is given as a percentage. This can be calculated by subtracting the death rate from the birth rate. This leads to a rise in population.

iii.

Pick any two: Pensions, Healthcare, Medical Cards, Free Travel, Home Care, Nursing Homes and Care centres

b.

i.

Agriculture

ii.

Site A is a good location for the construction of a housing site in my opinion for several reasons. Firstly, the site is a large site located on flat land. This is plenty of open space not only for the building of houses but for front and back gardens as well as space for green areas and facilities in the estate. There seems to be a cluster of buildings in the middle ground of the picture, this would mean access to shops as well as possible employment in the factory located in the left middle ground of the photograph. The site has access to infrastructure that is already in place. There is access to the site by roads for the residents. As there is already a housing estate located in the right foreground, we can tell that the area has a sewage system and access to electricity and water supply.

iii.

There has been a change in land use from 2019 to 2020 from Agricultural to Educational. This can be seen in the right background of the aerial photograph as this was previous land for agriculture. When we look at the OS map from 2020 at B2 Lusk Community College and Rush and Lusk Educate Together were built. This shows that the population of the town is growing and there is a need for these facilities.

c.

i.

20

ii.

Agriculture

iii.

True

iv.

Energy Source	Renewable	Non-renewable
Oil		✓
Tidal	✓	
Peat		✓
Biomass	✓	

v.

Many newly built houses have solar panels on the roofs to reduce greenhouse gas emissions. The solar panels capture solar energy from the sun and converts that energy into electricity. The electricity can be stored in a battery and there are even plans to sell the extra energy to the national grid. By using this type of energy to heat water and produce electricity they are reducing the need for non-renewable sources of energy like gas and oil which only add to the greenhouse effect.