

GCE

# Geography

Unit 1 Physical and Human Geography (GEOG1)  
Exemplar Script 1

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Spec no: 2030  
Version: 0.1

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**1 Rivers, Floods and Management****1 (a)** Describe different types of load a river carries.

(4 marks)

**Candidates Answer**

A river load is made of different types of sediment. The main difference in this sediment is its size. Sand clay and silt are the smallest type which are often discarded into the water, causing its discolouration. Gravel and pebbles are slightly bigger and found mainly in the middle and lower course. Boulders are the bigger particle, found in the upper course where the velocity is large enough to move them.

**Reference to size only rather than type. There is no numeric qualification so only 1 mark for this answer.**

**1 (b)** Study figure 1 which shows the Hjulstrom curve**1 (b) (i)** State the velocity of which particles of clay of 0.001 mm are eroded and the Velocity at which pebbles of 10 mm are deposited.

(2 marks)

**Candidates Answer**

Clay particles of 0.001 are eroded at .....400... <sup>1</sup>cm/sec

Pebbles of 10 mm are deposited at ..... 60....cm/sec...

**Both figures are correct and accurate.**

**1 (b) (ii)** Describe the relationship between velocity, load size and transportation.

(3 marks)

**Candidates Answer**

Larger particles require a larger velocity to transport them, this is called the Fall velocity. When a river passes this velocity, particles, particles are picked up in the water and travel along the course of the river. If a river has a fast enough velocity, it will erode the particles.

**Only the first statement is creditworthy for 1 mark. Basic link established then drifts onto erosion from transportation at the end.**

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**1 (c)** Study Figure 2 which is an extract from a newspaper article about flooding in Cornwall, in November 2010

Using Figure 2, describe and comment on the different impacts of flooding (6 marks)

**Candidates Answer**

The impacts of flooding can be short and long term. A short term effect can be loss of property, as shown in figure 2 where the cars are lost to sea. An economic long term effect can be insurance companies raising insurance costs.

For example in Boscastle, insurance companies raising their insurance prices by 35% after the 2004 floods. This could be a potential impact in Penzance, where the area was hit by a landslide.

An environmental effect of flooding is the deep, muddy water can be a health risk due to the bacteria it could be harbouring. This means that in some areas, the water will need to be drained and the houses (or pub in figure 2) thoroughly cleaned before they are safe for inhabitants again.

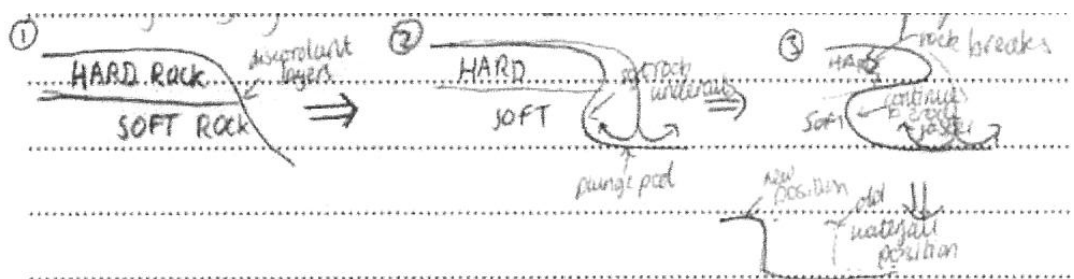
***Candidate is aware of different impacts of flooding – short and long term and economic and environmental. Some drift from Figure 2. Statements are somewhat separate. L1 4***

1 (d) Describe how and explain why fluvial (river) landforms change downstream (15 marks)

**Candidates Answer**

As the rivers progress downstream, the erosion type changes. At the very upper course of a river, the energy is mainly gravitational potential energy (GPE) where the river is striving to get down to sea level. This means erosion is mainly vertical, (**aware of process and subsequently links to landforms**) causing landforms such as potholes, rapids and waterfalls. Waterfalls are formed when hard rock is on top of soft rock. This discordant layer means that the soft rock is eroded. Faster than the hard rock, meaning it is undercut. The water then falls over the hard 'cap rock' into a plunge pool created below. This energy causes the cap rock to be further undercut until it collapses and the waterfalls and other landscapes move upstream. The reason the waterfalls and other landforms move upstream is because of rejuvenation, the river constantly trying to reach a smooth concave profile.

**(Description/explanation of waterfall formation – landform near source – some reference to 2 overall reasons – could be clearer)**

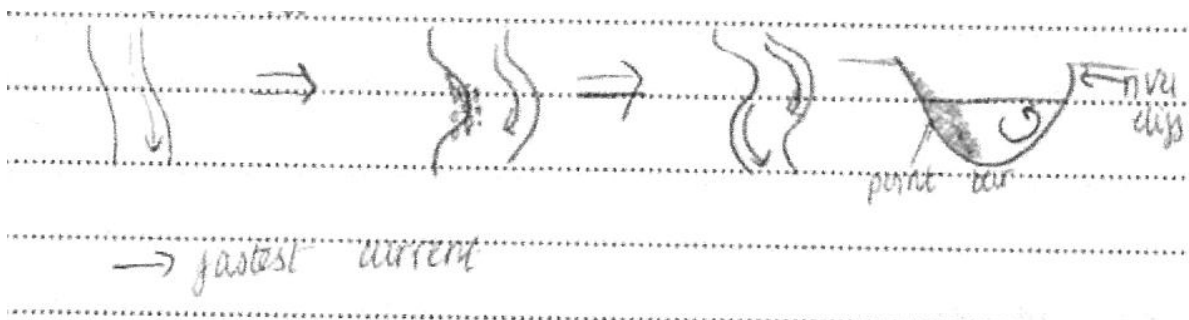


**(Diagrams support text)**

As the middle course is reached, lateral erosion starts to take place, both kinetic energy and GPE acting on the river. This causes meanders to form. A meander is a sinuous bend in the river formed when thalweg current mean that one side runs faster than the other causing erosion one side and deposition the other.

**(Middle course now considered and appropriate landform – description of landform with some explanation.**

The helicordal flow means the point bars form in the inner bend and river cliffs on the outer bend:



In the lower course, the landforms become fast (correct word?) and wide, such as flood plains, because lateral erosion dominates, causing alluvial deposits. This is where deltas form.

***(Recognition of Landforms but no description or explanation)***

To conclude, landforms change travelling downstream because of changes in energy processes from GPE to kinetic energy, causing different types of erosion to occur.

***(An awareness of two landforms at different distances downstream. There is a focus on the landforms and there is description and individual explanation as well as an awareness of overall reasons for changes L3 15 marks)***

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**3 Coastal Environments**

- 3 (a)** Distinguish between constructive waves and destructive waves (4 marks)

**Candidates Answer**

Constructive waves are low, gentle waves with a long wavelength, whilst destructive waves are high, steep waves with a short wavelength. Constructive waves produce a larger swash than backwash, whilst destructive waves have a larger backwash than swash. Constructive waves mainly deposited material by the coast, building up beaches, whilst destructive waves mainly erode the coast, removing beaches.

Constructive waves operate in calm weather, whilst destructive waves operate mainly in stormy weather.

***Clear differences established regarding height, wavelength, swash/backwash and process. 4 marks***

- 3 (b)** Study Figure 4 which shows coastal erosion in Happisburgh, Norfolk
- 3 (b) (i)** Using Figure 4 only, describe evidence that this coast is being eroded (4 marks)

**Candidates Answer**

It is clear that sea defences have been put in place, suggesting coastal erosion is taking place. The steep cliffs along the coast suggest mass movement has perhaps taken place (there's a large amount of soil and rock deposited by the bottom, suggesting mudflows or rockfalls). Groynes can also be seen in the distance, suggesting the majority of the coast is being eroded. The part that these seems to be on open pipe (circled) suggests that the cliffs were once further away from the houses, and has retracted since due to erosion.

***Coastal defences, mass movement and the pipe in the cliff face provide three examples of evidence for 3 marks.***

- 3 (b) (ii)** Use one case study to describe the socio-economic consequences of coastal erosion.

(7 marks)

**Candidates Answer**

The Holderness coastline in East Yorkshire is where rapid coastal erosion is taking place. The social consequences include how property prices along the coast have fallen (which is having a negative impact on those living there who may be trying to move) as well as some houses even collapsing into the ocean.

The economic impacts of the coastal erosion include large amounts of money being spent on flood defences (in Mablethorpe 2 million pounds has been spent on 2 rock groynes and a 500m revetment). Other consequences include how about 80, 000 mm<sup>2</sup> of farmland is lost each year. due to the erosion, which is affecting local farmer's livelihoods. Furthermore the Gas Terminal at Easington which supplies gas for British Gas is at risk, which may cost the company a loss should the terminal be affected by the erosion.

It can also be argued there has been a decline in tourist numbers in Bridlington perhaps due to the retreating coastline (which also creates social consequences, as business which rely on tourism may suffer), although perhaps other factors have led to this clearance.

***L2 Case study is valid and is specifically used – loss of homes constitutes a social effect although economic is emphasised. The sections on Easington and Bridlington are incorrect. 5 marks***

- 3(c)** 'Soft engineering works in harmony with the natural environment and is Effective in protecting the coast'

To what extent do you agree with this view?

(15 marks)

**Candidates Answer**

Soft engineering refers to natural processes and landforms which are used to absorb water energy, protecting the coast. Whilst it can be argued they work well with natural environment, perhaps their effectiveness in protecting the coast can be challenged.

***Clear introduction***

One soft engineering method includes beach nourishment. This is when sand is deposited on beaches, building them up and so creates a layer buffer between the sea and the coast, protecting it. The sand can either be dredged offshore or taken from another beach and has been close to Marsay Island, for example, in the Blackwater Estuary along the Essex Coastline. Such a method is environmentally friendly, as it produces natural features, (beaches), and can even be used to develop sand dunes which house a diversity of different spaces. However, it can be argued that dredging the sand from another beach may destroy existing sand dunes, which may damage the environment.



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***Beach nourishment – aware of how it protects, considers possible impact***

Furthermore, whilst they may be effective, they have to be maintained regularly by continuously adding more sand to the beach or creating groynes to protect the sand from shifting via long shore drift, which can be very expensive. Another soft engineering method is managed retreat. This is when the coastline is intentionally allowed to flood, with the hope that the flooded areas may become Marshland, which slows down the water and so helps to protect the new coastline from erosion. This has been done in Orphlands in the Blackwater Estuary.

***Managed retreat – description and example***

A sea wall was breached and 40 hectares of land was allowed to flood. Whilst this created new marshland and so now habitats for species, it also destroyed the habitats of species which previously were, and there, through invading the land. Furthermore, not all areas that were allowed to flood home marshland, and so in some cases where this is used, the coastline simply retreats, and so the method doesn't always effectively protect the coastline.

It is therefore clear that, whilst soft engineering does tend to be environmentally friendly and so works alongside the natural environment, sometimes this isn't the case. Furthermore, sometimes it doesn't effectively protect the coast, although it can be agreed it does so more often than it doesn't.

***Tentative assessment – main content is largely descriptive rather than targeting question as introduction suggested was likely L2 10 marks***

**5 Population Change**

**5 (a)** Study figure 6 which shows the population structure of four countries

Outline contrasts in population structure shown in Figure 6

(3 marks)

**Candidates Answer**

Kenya has a very high birth rate and death rate, with a lower active population. This trend is similar for India, leaving a large bulge in the centre of the population pyramid. UK and Germany have low birth rates and death rates, and a subsequent active population.

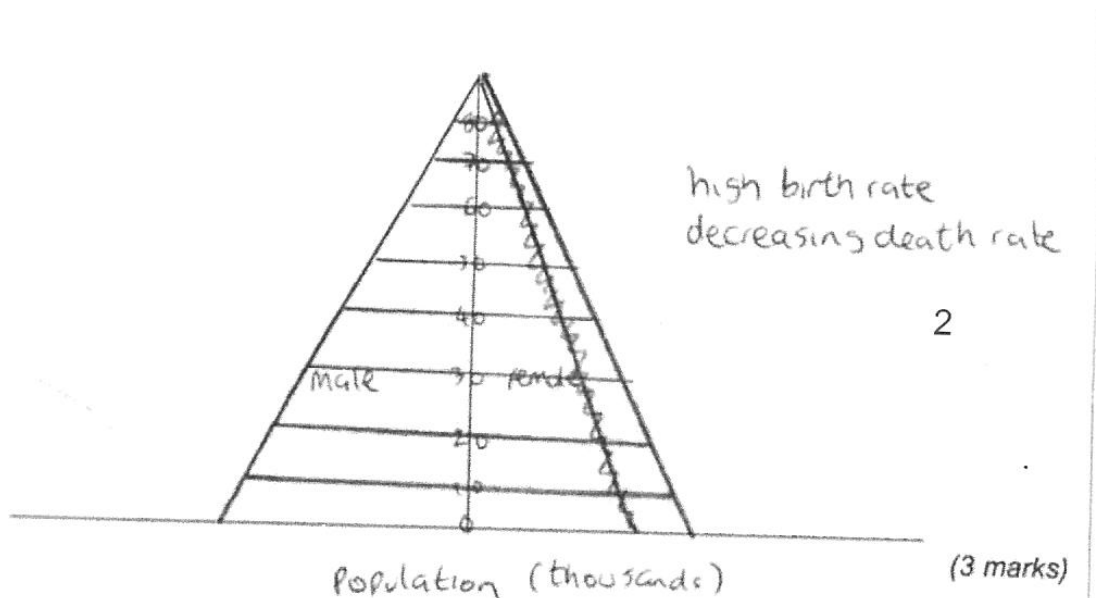
***There is no contrast identified with a similarity trend being stated which is neither apparent nor correct. The age structure data is disregarded. 0 marks***

**5 (b) (i)** Population structure changes throughout the stages of the demographic transition model.

Draw a sketch population pyramid to show the population structure of a country in stage 2 of the demographic transition model

(3 marks)

**Candidates Answer**



**Symmetrical triangle, broadest part is base, males and females and ages identified 3 marks**

**5 (b) (ii)** Figure 7 shows a population pyramid for people ages up to 85 in England and Wales in 2010.

‘The England and Wales population pyramid displayed the characteristics of country in stage 4 until 2001, but the evidence of this stage is less clear in 2010.’

Provide evidence from Figure 7 for this statement

(3 marks)

**Candidates Answer**

We can see that around 2001, are numbers of births in the UK started to decrease. In addition to this, the proportion of those over 70 has decreased significantly over that time period. However, a large active population is still evident, with a comparable birth and death rate.

***Describes but no clear link to evidence for the statement. 0 marks***

**5(c)** Discuss the implications of an ageing population

(6 marks)

**Candidates Answer**

An ageing population such as in the UK, leads to a decrease in the active population, thus meaning that the economy cannot grow as well. This means that more money is put into pension funds and building hospitals, instead of being used for other Services, such as Police and Fire Services stunting economy growth. A formal retirement age in the UK is aiming to provide financial incentives to stay in work for longer and can often lead to job cuts, because not enough money is available to support those in work. In areas such as Bournemouth in the UK, there are few facilities for young people and many opt to leave in search of better opportunities in the workplace. The scrapping of a formal retirement age in the UK is aiming to provide financial incentives to stay in work for longer.

***L1 Points are separate – descriptive and not always clearly targeted to the question 3 marks***

**5(d)**

Discuss the usefulness of **at least two** population measures (such as birth rate, death rate, fertility rate, infant mortality rate, life expectancy, migration rate and population density) as indicators of development.

(15 marks)

**Candidates Answer****Pop measure 1**

Life expectancy is a very useful indicator of development as it allows us to predict the age at which people will die. As a general rule, MEDCs have a higher expectancy than LEDCs. In Burkina Faso the life expectancy is around 36 whereas in the UK it is around 78. This is because the far superior quality of life in MEDCs, access to medical facilities and education and sanitation all contribute to a higher life expectancy. In Burkina Faso there is very little access to education, contraception and acceptable level of sanitation, reducing one respective life expectations. This, in turn leads me onto my next point.

***Describes how measure links to development – tentative discussion*****Pop measure 2**

The fertility rate is the number of children an adult woman is expected to have in her lifetime. In stage 1 and 2 countries, the birth rate is very high because of the emphasis on subsistence agriculture, the need for large families, little access to contraception and a high infant mortality rate.

The desire to have large families is seen as a necessity in these countries, whereas in MEDCs – or stage 3,4 and 5 countries, there is lower fertility rate and less desire to have large families. Along with the aforementioned factors, women receive equal opportunities in MEDCs, with a greater emphasis on tertiary employment. All these factors lead to a relatively high or low fertility rate, allowing us to predict the relative wealth and stage in development of different counties.

***Describes how measure links to development – tentative discussion  
Somewhat implicit***

In isolation these indicators are not of great usefulness. However when more than one is used together, they are of great usefulness as indicators of economic and social development.

***Comes to a view – begins to discuss but final comment not really supported.  
Level 2 9 marks***

- 8**                    **Health Issues**
- 8(a)**                Figure 13 shows projected world mortality from infectious diseases between 2002 and 2030.
- 8(a)(i)**            Summarise the trends shown in Figure 13
- (4 marks)

**Candidates Answer**

Between 2002 and 2030, it is projected that mortality from these infectious diseases will decrease from 15.5 million in 2002 to 14.3 million in 2030. The number of other infectious diseases is expected to fall from 8 million in 2002 to 5.5 million in 2030. Respiratory infections are projected to decrease from 4 million to 2 million, but HIV / AIDS is expected to rise from 3.5 million to 6.5 million.

***Overall trend plus evidence and specific trends 4 marks***

- 8(a)(ii)**           Suggest reasons for trends shown in Figure 13
- (3 marks)

**Candidates Answer**

Respiratory infections and other infectious diseases are likely to decrease due to improvements in healthcare, better access to healthcare, and better prevention (eg vaccinations). But HIV/AIDS may rise as people migrate, causing it to affect people in all countries, rather than just poorer countries, such as sub-Saharan Africa.

***Recognises improvements in healthcare, preventative medicine for two categories and migration of people with virus for HIV/AIDS 3 marks***

- 8(b)**                Figure 14 shows death from coronary heart disease for the top 26 countries worldwide in 2005.
- (3 marks)
- 8(b)(i)**            Describe the pattern shown in Figure 14

**Candidates Answer**

All of these countries which are the top 26, are in developed parts of the world, all of which are north of the Brandt line. There are over 120 cases per 100,000 people per year in the UK, New Zealand and Finland. There are between 90 and 119.9 cases per 100,000 people per year in North America, Sweden, Norway and Australia. Other European countries have less than 89.9 cases per 100,000 people per year, as does a country to the East of Asia.

***MEDC's identified, but then just lists countries in different category without reference to pattern 1 mark***

- 8(b)(ii)** Comment on the impact of one non-communicable disease (eg coronary heart disease, cancer) on economic development. (5 marks)

**Candidates Answer**

Coronary heart disease generally has a negative impact on economic development, as people with the disease either have time off work, or they permanently finish working, they may claim benefits, which are paid for by the tax payer. If people have time off work, productivity falls and this could make a company lose revenue / profit. Family and friends may also have time off to look after someone with coronary heart disease and this could also reduce productivity. If there are less people working then there will be less people paying income tax, and this will reduce government revenue, which could slow down economic development.

**Generic response – need to be specific to CHD Level 1 3 marks**

- 8(c)** ‘Transnational corporations have both negative and positive roles in world health’  
Discuss this view (15 marks)

**Candidates Answer**

Transnational corporations are big companies that operate in more than two countries. They often research and develop drugs in developed countries where their headquarters are, but manufacture the drugs in less developed countries.

**Definition/characteristics**

They have positive roles in world health as they manufacture drugs that treat and prevent illnesses, **(Positive)** although they can be criticised for their marketing strategy. This is because they can put patients on drugs, which last for 20 years, and therefore stop other companies from copying the drug. **(Negative)** However, this means that they can charge high prices, as customers will not be able to buy them anywhere else. However, this is seen to be negative, as it means that many people cannot afford the drugs and therefore they get more ill.

However, some transnational corporations, such as GlaxoSmithKline (GSK) spend some of their revenue on sending drugs to LEDCs. **(Positive)**

With some of their other revenue, they also spend money on research into illnesses and diseases in LEDCs.

**Summary** In conclusion, some transnational corporations do try to help people with illnesses in LEDCs, but often to some people it feels like they don't help other people – as they want to charge high prices in order to maximise profit.

**Begins to discuss considers positive as well as negative with regard to world health – generic – no real support Level 2 9 marks**