

GCE

# Geography

Unit 1 Physical and Human Geography (GEOG1)  
Exemplar Script 6

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

(4 marks)

**Candidates Answer**

Two different types are bedload and suspended load. Bedload consists of large boulders that are rolled across the bottom of the riverbed because the river does not have the energy to carry them. Bedload is usually found in the upper course. Suspended load is fine bits of rock or grains of sand carried in the river that often gives it a more 'muddy colour.' They are carried because the river has enough energy. Often consists of sand or silt and found in lower/middle course.

***Two types of load are clearly recognised and there is description of what bedload and suspended load is and reference to the relevant size of material for 4 marks.***

**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 or 10 mm are deposited.

(2 marks)

**Candidates Answer**

Clay particles or 0.001 are eroded at .....400.....cm/sec  
 Pebbles of 10 mm are deposited at .....60...cm/sec....

***Both answers are correct***

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

(3 marks)

**Candidates Answer**

Generally the higher the river velocity the higher the load size it can carry. However if the River velocity goes above the mean erosion velocity curve, on the Hjulstrom curve, the rock will be eroded.

***Establishes basic relationship in first sentence then drifts from transportation to erosion – so rest is not relevant 1 mark***

- 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**

Flooding can have social, economic and environmental impacts. The 2009 Cockermouth flood led to social impacts of the death of a policeman. The destruction of more than 1000 properties. Economically the flood led to more than £100 million in insurance payouts alone showing huge economic impacts. Environmentally flooding can lead to sewage being leaked into the streets which leads to health hazards and diseases. This shows that the Cockermouth flood alone has vast impacts that are negative. The only positive is the deposition during flooding can lead to fertile soils.

***There was a need to use the information given in Figure 2; this response uses a case study instead so the question asked is not being answered. 0 marks***

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

(15 marks)

**Candidates Answer**

Fluvial landforms can be defined as any landform that is created by a river. River landforms change downstream due to varying factors like rock type, discharge of river and the surrounding landscape such as whether urbanisation has occurred or not. One river case study that will be used to answer this question is the River Tees in northern England.

***(introduction given but links to question not always clear.)***

The River Tees as with most rivers has a source in a place of higher altitude, in this case the Pennine mountains. However as a river progresses, a river can be split into upper and lower courses. In the upper course of a river two commonly found features are interlocking spurs and waterfalls. An example of a waterfall is High force in the upper course of the river Tees. These features differ from lower course landforms because they are formed mainly through vertical erosion as opposed to lateral erosion. The vertical erosion also leads to other landforms such as V shaped valleys in the upper course. Vertical erosion occurs because the channel is often quite thin in the upper course of a river. The valley can also often be quite steep so processes like abrasion erode the river bed.

***(Identifies two upper course landforms – recognises vertical erosion process)***

The lower course of a river has other features such as meanders and flood plains. An example of a meander is the Yarn meander on the River Tees. These landforms are formed by the lateral erosion because at this point the river channel is wide. The velocity of the river also increases meaning landforms like meanders can be formed where the current of the river alternates sides between pools and riffles due to turbulence. This deposits sediment on one side and erodes the other.

***(Some explanation of different landforms further downstream)***

Overall, upper coarse features are formed due to high rates of vertical erosion such as waterfalls and interlocking spurs. Lower coarse features are formed by lateral erosion such as meanders and flood plains.

***Level 2 considers landforms at different stages with some reference to process – type of erosion. Little description 10 marks***

**3 Coastal environments**

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

**Candidates Answer**

Constructive waves have a long wave length of about 6 waves per minute, they have a greater swash than backwash and add material to the beach. Whereas destructive waves have a short wavelength and are much more frequent – 10 to a 14 minute and the swash is much weaker than its backwash which is why material is scoured off the beach.

***Clear identification of wavelength. Frequency, swash/backwash and process contrasts. 4 marks***

- 3 (b)** Study Figure 4 which shows coastal erosion in Happisburgh, Norfolk

- 3 (b)(i)** Using Figure 4 only, describe the evidence that this coast is being eroded (4 marks)

**Candidates Answer**

The cliff has retreated into the gardens of the homes in figure 4. Also, there is evidence of slumping where material has fallen down to the bottom of the cliff. Sea defences further along the coastline do not cover this area which is why there is less vegetation and more earth and rocks visible in figure 4 at this end of the coast than further up where there are groynes and perhaps other defences.

***Recognises 4 points regarding gardens, material at foot of cliff, lack of vegetation and sea defences in distance 4 marks***

- 3 (b)(ii)** Use one case study to describe the socio-economic consequences of coastal erosion (7 marks)

**Candidates Answer**

An example is along the Holderness coast in East Yorkshire where the rate of erosion is 1.8 metres a year. A caravan park along the coast loses 10 pitches a year which is delivering a loss to the owner. His land is decreasing and the number of tourists he can also accommodate is decreasing which has negative economic impacts. Also, farmers along this coastline are losing 80,000 km<sup>2</sup> a year collectively which means they have less land to grow crops on and less land for their animals to graze on. One other consequence is the impact the erosion has on house prices. The average house price along this coast has dropped considerably and many struggle to gain home insurance.

***Valid example used – economic impacts only are described – facts relate to example L1 4 marks***

3 (c)

‘Soft engineering works in harmony with the natural environment and is effective in protecting the coast.’

(15 marks)

To what extent do you agree with this view?

### **Candidates Answer**

Soft engineering is a sustainable way to protect coastlines. For example in Blackwater Essex there is an area of low value land which left to flood, creating salt marsh land to entice and attract natural wildlife as well as bird watchers and other tourists. This has led to a loss in land, however it does work in harmony with the natural environment as well as attracting more visitors to the area. However, I do believe that hard engineering techniques are more effective in protecting coastlines because they stop the effects of erosion more effectively as they are stronger, however, they are more expensive and they do not work in harmony with the natural environment.

### ***Description of managed retreat – advantages and disadvantage. Drift to hard engineering***

Another soft engineering technique is beach nourishment, where sediment is taken from offshore and placed on the beach. Although this builds up the beach, it does affect the equilibrium of the sediment cells. The new sediment is often transported along the beach, causing an area of sediment deposition due to the effects of the process longshore drift.

### ***Beach nourishment – description of how it works and possible disadvantage***

The effects of soft engineering are not huge and do not stop the effects of erosion, however they are a much cheaper option over hard engineering techniques and they do work with the environment which makes them environmentally friendly and a sustainable option.

### ***Contrast to hard engineering – a different emphasis to that needed in the question***

***Description of methods without really addressing the harmony and effectiveness of protection aspects L1 6 marks or is it worth more?***

**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 much lower population compared to the other three countries. Germany and the UK have high percentages of people aged 65+, whereas Kenya and India don't. Kenya's population is made up of 42% of children under 15 years, whereas Germany it's just 14%.

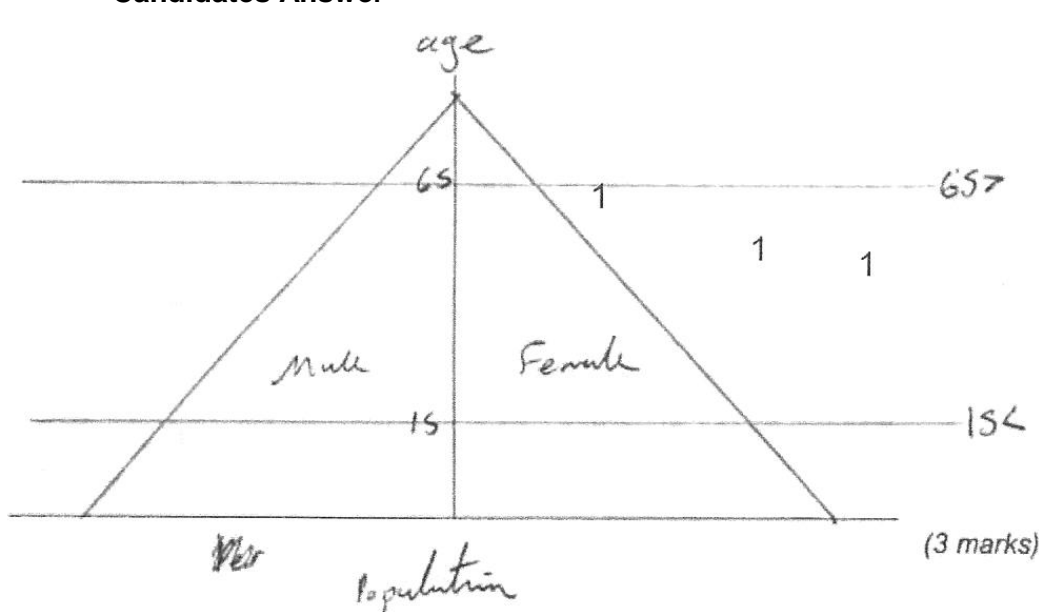
**Notes 2 contrasts - second one could be more explicit 2 marks**

**5 (b)(i)** Popular 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**



**Identifies symmetrical triangle, broad base and labels ages and sex 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**

In 2001 the population pyramid would have had a more triangle top that was well rounded. However now the population is ageing and the rise has started to shrink, suggesting an ageing population.

***Question asked is not addressed 0 marks***

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

(6 marks)

**Candidates Answer**

An ageing population isn't the best thing for a county. More people are retired and therefore more pensions need paying. This then forces taxes up on working people or they have to work for longer. It also puts more of a burden on healthcare services as older people generally fall ill. Health services may be tailored towards OAP's and so there may be less activities and crucial money spent on the younger generation. The good thing is that OAP's have more spare time so are likely to invest in leisure activities which can boost the economy.

***Discusses and links sees negative and positive Level 2 5 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*** Infant mortality is a very good way of increasing a countries stage in the Demographic Transition Model, but also their development. MEDC's have very low infant mortality rates in particular Germany and Italy have low infant mortality rates. It shows that a country has adequate food as well as the economic power to afford good sanitation as well as excellent healthcare. This shows as LEDC's such as Kenya have extremely high infant mortality rates. Nearly 45 per 1000. ***Links to development***

***Pop measure 2***

The same goes for death rate. If there is good resources and healthcare people are likely to live for a lot longer which suggests a country is developed.

***Pop measure 3***

Fertility rate is another good indicator. LEDC's have generally very high fertility rates as the risk of a child dying is high. Parents have more kids in the hope they will live

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to be an adult. They also have an economic benefit as they are able to work and therefore help feed the family. Even though Italy is a largely Catholic country, fertility rates in Italy are the largest in Europe. This is surprising but then they are a highly developed country and the role of women is much better and they tend to follow their own careers rather than have children.

***Begins to question?***

***Pop measure 4***

Migration rate into a country is a good economic indication as it suggests there are lots of faiths. All of these are good indicators of development as you are able to work out relations on the DTM and also through examples all around the world.

***Drifts from question in this paragraph.***

***Level 2 Links and begins to discuss usefulness 10 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**

HIV/AIDS reached a dip in 2008 where the number of Deaths declined to 14 million – however since then it has increased. The number of deaths of HIV/AIDS will be only fractionally smaller in 2030 than it has in 2002 – number of deaths would have only dropped 1 million. However respiratory infections is on a slower decline from 2002 to 2030 (12 million deaths to 7.6 million deaths). Other infectious diseases is on a similar trend to respiratory infections but only a more gradual decrease (in 2002 8.1 million deaths to 5.3 million deaths in 2030)

***Identifies dip in HIV/AIDs deaths. Graph misunderstood, but recognises decline in respiratory and other infectious diseases. 3 marks***

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

(3 marks)

**Candidate Answer**

Declines in respiratory infections and other infectious diseases could be due to the increase into research and development into these infections- meaning that doctors and healthcare workers have far more of an idea in how to treat these illnesses more effectively or distribution of the areas might have increased to more badly affected areas like sub-Saharan Africa will have easier access to the drug. HIV/AIDS is still relatively high possibly because a breakthrough in medicine has still not been made.

***Identifies improvements in healthcare for respiratory infections an lack of drugs for HIV/AIDs 2 marks***

**8 (b)** Figure 14 shows death from coronary heart disease for the top 26 countries worldwide in 2005.

**8 (b)(i)** Describe the pattern shown in Figure 14

(3 marks)

**Candidates Answer**

Coronary heart disease is an affluent illness were many MEDC countries experience it more due to lifestyle choices and an ageing population. Countries like Australia, UK and the USA are all prone (CHD) due to these factors other countries like Brazil, Egypt, Israel do not experience as great as 899 per 100,000 people per year experiencing deaths from coronary heart disease as they're not as economically developed.

***Identifies MEDC's only – drifts from question 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 is the number 1 killer causing 14% of all deaths in the world this has drastic economic issues.

Firstly this non communicable disease has a large impact on institutions like the NHS and more money is needed to be provided by the government to cope with the rising amount of cases this cost so the government has an opportunity cost and the money spend on health could have been spent on other matters e.g education. Furthermore coronary heart disease also decreases the labour force by making workers miss work due to the need to go to hospital because of the disease – this has a negative impact on business and they become less efficient furthermore the government miss out on your tax income revenue and instead have to ply out more money on health.

***Impacts valid but could relate to any non-communicable disease after first statement 3 marks***

- 8 (c) 'Transnational corporations have both negative and positive roles in world health'

Discuss the view

(15 marks)

**Candidates Answer**

***Defines/describes characteristics of TNC's***

Transnational Corporations are businesses on a global scale. They are based on different countries in order to cut costs to their businesses Occupiers of TNC's are GlaxoSmithKline and Phillip Morris international.

GlaxoSmithKline are a pharmaceutical company that sell ¼ of the worlds pharmaceutical products. They are a monopoly (which can be seen as negative for competition in the smaller places) that sells 4 billion products a year.

**(Positive)** They have a positive effect on the world's health as they research and develop into many of the world's largest infections and diseases. This research and development can have positives as new medicines can be developed in order to treat the world's health. (in total 722 million pounds has been invested into CHD by the country to find cures.) Furthermore the company also donates 750 million products per year to the world's poorest countries who can't afford to buy basic medicine.

**(Negatives)** However on the other hand, GlaxoSmithKline is a business who wants to make money out of peoples bad health it made 2282 million before tax last year and only sent 3% of that money into research and development where it could of spent far more into helping the ill through research and development.

**(Tobacco)** Furthermore Phillip Morris international produces tobacco and cigarettes – it sold 850 billion cigarettes in 2006.

It is helping world health by researching and developing into new strands of tobacco that are healthier than normal ones in order to reduce the risks of tobacco on people's health. **(Positive – but is it entirely?)**

On the other hand PMI has also been giving out 'free test samples' to customers thus incentivises people to buy their product – on the other hand the company had agreed to stop advertising of cigarettes and stop including children into their target market. **(Reasons?)**

Overall TNC's produce negatives and positives but the negatives come from wanting to make money of people's ill health. **(Doesn't match tobacco section)**

**Considers both pharmaceutical and tobacco TNC's – seeks to discuss and positive and negative aspects are considered. Some support which could be better targeted to specific diseases and positives/negatives Level 2 12 marks**