AQA Qualifications

GCE

Geography

Unit 1 Physical and Human Geography (GEOG1)
Exemplar Script 5

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1 **Rivers, Floods and Management**

1 (a) Describe different types of load a river carries.

(4 marks)

Candidates Answer

Bedload is the material that is heaviest, so it tumbles and rolls along the river bed, such as large rocks and boulders. Suspension is the lightest material carried, fine sand particles for example, which a river with low energy can easily carry. In between the two are light rocks or pebbles which is what causes erosion in the river by abrasion.

Bedload is described – both the location and size of material for 2 marks on this component and the same is true for suspension giving a further 2 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 of 10 mm are deposited.

(2 marks)

Candidates Answer

Clay particles of 0.001 are eroded at ……400 – 1000… **cm/sec**

Pebbles of 10 mm are deposited at …0.1 – 50 … ….**cm/sec**…

Both answers are incorrect as there needs to be a focus on the curves not the coloured segments.

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

(3 marks)

Candidates Answer

The higher the velocity of the river, the more energy it has, therefore it can carry larger sized particles. The lower the velocity but the larger sized particles size means that there is not enough energy for the load to be carried. However, too much velocity for some particles means that they are broken down and eroded.

The first statement establishes a relationship – but the answer drifts then to reasons and erosion. 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 affects many different aspects of a town, some impacts are short-term, and some are long-term. For instance, Figure 2 talks about homes and shops and pubs being inundated with 'muddy brown water' which takes a very long time to recover as money is needed for repairs.
The infrastructure is also impacted as main roads ad railway lines were temporarily closed. However, unless there is severe damage, they can re-open when the water has been cleared so these are short-term effects. Because people lost their cars and properties were damaged this would mean that insurance premiums would increase for the area. Employment will also be impacted as shops will have to close, and some will decrease as less people visit the area. Flooding can also cause secondary disasters such as landslides (figure 2) which have further impacts on costs.

Seeks to use Figure 2 – categorises impacts and offers comment regarding insurance premiums and secondary impacts. L2 6 marks

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

(15 marks)

Candidates Answer

At the source of the river, the channel is very narrow and shallow, with a rough, jagged bed. As vertical erosion occurs, the channel becomes deeper. In the upper course, the river has less energy so cannot carry material and the channel has a low efficiency.
As vertical erosion continues the aim for the river is to reach the mouth, so it creates its path to do so.

Clear reason for upper course characteristics but no landform identified.

In the middle course, the river has a smoother bed and banks, making it more efficient. The discharge of the river here is much higher and velocity has increased so the river has much more energy. Having more energy means it can pick up larger particles which erode along the course through abrasion. In the middle course is where waterfalls, meanders and ex-bow lakes occur. Also, as soft rock is being eroded at a faster rate than hard rock, steps in the riverbed are created, causing rapids.

Aware of reasons for changes, but some drift to channel characteristics at the start. Landforms are noted but they do not show a progression downstream.

As the soft rock is being eroded, undercutting of the harder rock can occur until it collapses, causing a plunge pool and a waterfall. ***(some description of waterfall)*** The land in the middle course is much flatter than the mountainous upper course because the middle course is closer to the sea level, away from mountains. Because the land is flatter, lateral erosion occurs, making the channel much wider. As a meander forms, an inside bend has less energy, so deposition occurs, causing a slip-off slope. On the outside bend there is more energy, so more erosion occurs causing a river cliff. ***(Clear description and partial explanation of meander)*** As you go downstream wider and wider, with flat flood plains.

In the lower course, the river is at its widest point as it joins an ocean or lake via estuary or delta. The riverbed and banks are smooth and there is high velocity so large particles are transported. However, when the river meets a large body of water, eg the ocean, the ocean absorbs the energy of the river so it becomes much slower. As chemical changes occur between freshwater and saltwater flocculation occurs saltmarshes can appear. *(Is ending here correct seems not to fit together?)*

Lower course – identifies delta with some explanation for landform.

Description and explanation focuses on individual landforms three at different stages. Some drift to channel characteristics. L2 12 marks

3 Coastal Environments

3 (a) Distinguish between constructive waves and destructive waves

(4 marks)

Candidates Answer

Constructive waves are low long waves with a strong swash and a weaker backwash, which means that material is deposited to create beaches. They also have a lower frequency than destructive waves as one usually occurs every 8 – 10 seconds. Destructive waves are taller, with a weaker swash and stronger backwash meaning that they take material away with them.
Destructive waves have a higher frequency as one occurs usually every 4 to 6 seconds.

Clear contrasts on height, frequency, swash/backwash and process – 4 marks.

3 (b)(i) Study Figure 4 which shows coastal erosion in Happisburgh, Norfolk.

Using Figure 4 only, describe evidence that this coast is being eroded.

(4 marks)

Candidates Answer

There are properties right on the edge of the coastline and you can see debris of possible damage from erosion. Also there is only a narrow beach, not a slow gradual decline which shows the attack of the waves. The land is very 'jagged' and not smooth, showing how softer rock is being eroded at a faster rate than the hard rock. The property also looks derelict, meaning that people have moved to get away from the erosion.

Recognises closeness of properties to coastline and derelict state. 2 marks

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

(7 marks)

Candidates Answer

In East Yorkshire (Holderness). the east coast absorbs the brunt of the waves coming from the north east.
This coastline erodes an average of 1.8 metres per year. This results in lots of people wanting to move away from the erosion before they lose their homes. However, because the house prices in the area are so, so low they cannot sell their properties in order to afford one elsewhere. Whole villages and roads are damaged if not lost completely which is a huge expense for the government who have accepted the 'do-nothing' approach as erosion is so rapid.

Case study identified – refers to social and economic but generic and 'do nothing' approach has not been accepted L1 2 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

I agree with this view to a great extent. Soft engineering methods are natural ways of dealing with erosion, however, every method comes with disadvantages.

For example, beach nourishment involves taking materials from the bed out at sea or further down the coast and placing it on an eroding beach to create wide beach as wide beaches absorb the energy of the waves before they can damage anything. However, taking sediment from an area to another is often seen as moving the problem from one place to another, so while it is in harmony with the natural environment and is effective in one part of the coast, it may worsen another area.

Considers one method – beach nourishment – describes and begins to target content L2 7 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

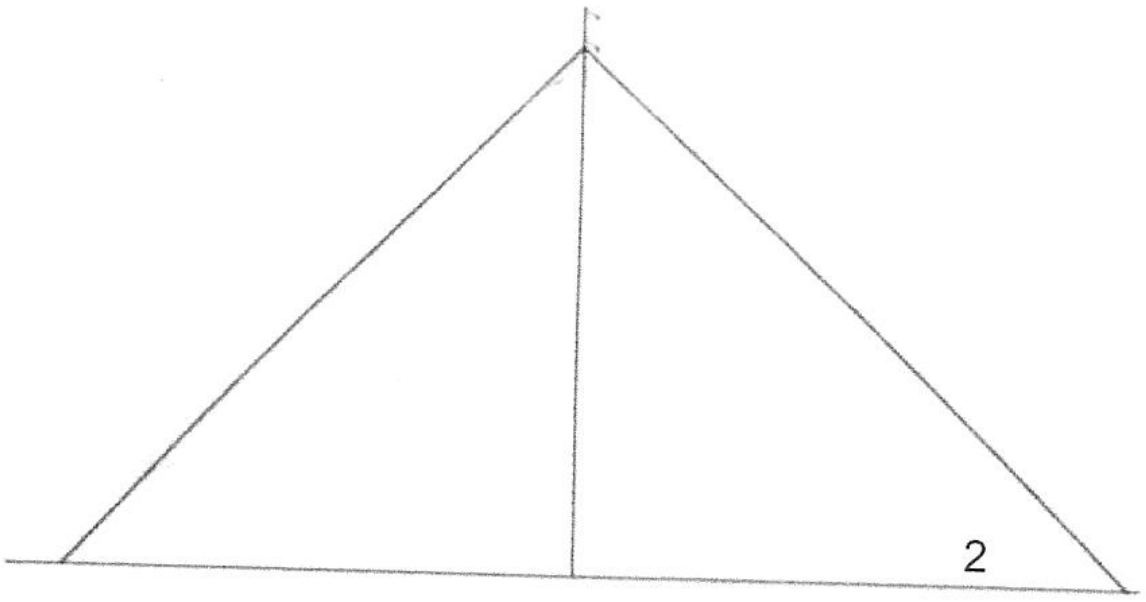
Germany and Kenya, although having a similar population % aged 15-65, have completely contrasting population aged <15 (%) (Kenya 42% and Germany 14%). United Kingdom has a much larger population over 65 (16%) compared to India (5%). India's population aged , 15 is 32% which is more than double Germany's at (14%)

Although initial statement does not answer question, two contrasts are identified with evidence for 3 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)



Symmetrical pyramid with broad base 2 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 2010, according to Figure 7 the birth rate is quite high and the death rate is quite low. This would suggest early stage 3 or late stage 2 of the DTM. There is quite a large working population suggesting the UK isn't in Stage 4. But the population pyramid shown in Figure 7 does not match a predicted stage 4 model suggesting the UK is not in Stage 4.

Evidence from pyramid needed to support points about birth and death rate. 0 Marks

5(c) Discuss the implications of an ageing population

(6 marks)

Candidates Answer

Higher dependency ratio is an implication of an ageing population as there is a small number of working population supporting a large dependant population. Higher taxes are put in place by the government and the retirement age is increased to try and lower the dependency ratio. The youthful population is pushed away from the country as the provision of services and facilities such as bars and clubs are removed.
Increased stress is put on the provision of healthcare for the elderly and the consumer market will decline rapidly due to the 'grey pound' which is the lack of consumerism from the elderly.

Describes some valid implications – no real support and final point is incorrect Level 1 3marks

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

Evidently it is difficult to measure development, however there are many indicators which could be used to evaluate a countries level of development,)

Pop measure 1 birth rates (which is the no of live births Per 1000)for example, may be used as this can indicate the provision of healthcare and education system in place. Usually if the birth rate is high then the level of development may be considered low because there may not be sufficient education for women or availability of contraceptives may be limited due to poor healthcare provision. Also if the education system is good and women have equal rights (which is the case of most developed countries) then women may choose to go to work than have children leading to a drop in the birth rate. **Links to development**
However, other indicators must be considered as for instance religions may affect the birth rate; Spain is mainly Catholic and Catholics do not use contraception. ***Hint of questioning***

These limitations can be overcome/minimised if we consider another
Pop measure 2 indication such as life expectancy which is how long one could be expected to live in a particular country. A long life expectancy is considered to be an indication of a more developed country because it would mean that provision of health care is adequate and available. However, that is not the only thing to take into account, there are many indicators used in conjunction to assess development.

Pop measure 3 Infant mortality may be used as a high infant mortality rate (children dying before the age of 1 %) suggests a less developed population and lack of sufficient healthcare facilities. All population measures could be argued as somewhat useful in determining or assessing development but on the whole, they are not as good with indicating development, they need to be used together.

Makes links and discusses and indicates measures better when used together but this is unsupported Level 2 12 marks

7 **Energy Issues**

7 (a) Figure 11 shows the primary energy mix of Brazil, China and France.

7 (a)(i) Summarise contrasts in the primary energy mix shown in Figure 11

(4 marks)

Candidates Answer

From Figure 11 it can be seen that 89% of China's energy consumption is non-renewable, compared to Brazil 54% and France's 40%, this is very large. France has the largest use of nuclear energy, 37% larger than Brazil and China. Similarly, Brazil outstrips China by 30% and France by 31% for hydro-electric power China uses the least natural gas, France the most. And all 3 countries use few 'other renewables'

Figures inaccurate for non-renewable. Notes contrast on nuclear with evidence and valid statements on HEP and natural gas. 4 marks

7 (a)(ii) For either Brazil or China or France, outline one or more issues likely to result from the energy mix.

Country Selected: China

(3 marks)

Candidates Answer

China is likely to have large environmental impacts from the massive consumption of coal and oil. Coal can cause sulphur to get into the atmosphere, making acid rain, which can effect wildlife and vegetation.
Oil is in sparse quantities and vast demand so if China has a disagreement with OPEC their oil passion could be affected.

Developed point on acid rain 2 marks

7 (b)(i) Describe the pattern of heat loss shown in Figure 12

(3 marks)

Candidates Answer

Most heat is lost through the windows of the houses where the insulation is least. Around the edge of the housing or where two houses share a wall the heat loss is in the middle. Interestingly, one house loses very little heat from the roof. Where the next house loses quite a lot of heat.

Identifies greatest loss and valid reference to central wall 2 marks

7 (b)(ii) Explain how homes maybe designed and/or adapted to conserve energy.

(5 marks)

Candidates Answer

There are many things that can be done to conserve energy. More simple and less costly are to keep curtains closed to keep the heat in and use draught excluders to prevent cold air getting in. Also putting foil behind the radiator reflects heat back into the house, instead of it being lost through the walls.
More expensive ways of reducing energy loss are using double glazing, cavity wall insulation and loft insulation to trap heat other simple solutions include turning off the TV instead of putting the TV on standby and only boiling as much water as you need in the kettle.
Some houses get solar panels put in to reduce the non-renewable energy they use.

Level 2 Explains how energy conserved 5 marks

7 (c) With reference to case studies at a national scale, comment on two contrasting approaches to managing the demand for energy.

(15 marks)

Candidates Answer

Example 1 China

In China the 3 gorges dam was a solution to the increasing demand for energy. Water is in abundance in China. When the population started to increase, China needed to supply the demand.
The 3 Gorges dam is a hydroelectric power station built on a reservoir. As water pass across the dam, energy is created by the turbines turning a generator. This energy is then sent out and provides 6% of China with energy for their houses and businesses. ***Supports specific***
The project does provide China with energy, but not as much as was projected, so to some it seemed a disappointment. It was a very expensive project which use finds from elsewhere to provide money for the project, decided without consultation of the population. ***Comments***

Example 2 India

In some parts of rural India the focus for energy supply is fuelwood. This is because not many houses can afford to use other energy and wood is easy to collect and can be used. However the more energy used by fuelwood the less wood there is to use. Although trees are planted for deforestation, they cannot grow at the rate they are being used, so energy is running out.
Not only is fuelwood debatably non-renewable, it also causes pollution by the smoke and smell caused by the burning.

Considers why fuelwood used and problems of fuelwood rather than how demand is met.

From this it can be seen that MEDCs can spend money on more sophisticated ways of dealing with energy demand than LEDCs, so in a lot of ways the demand is easier to cope with.
Clear comment on China, final statement unclear Level 2 9 marks