AQA Qualifications

GCE

Geography

Unit 1 Physical and Human Geography (GEOG1)
Exemplar Script 2

Spec no: 2030
Version: 0.1

1 Rivers, Floods and Management

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

(4 marks)

Candidates Answer

A river carries a load through the processes of solution, saltation, traction and suspension load carried in solution, is very small and isn't visible with the human eye. Suspended particles such as sand are also very small loads carried though the traction, this is very large and heavy often with jagged and angular edges, though this is only in the upper course finally load carried through saltation bounces along the river bed and isn't as heavy as particles carried through traction. It may have jagged edges and there is a large variety in size. This is often known as its bedload.

There is largely a focus on transportation rather than types of load. These are identified within the unfocussed answer for 1 mark. Suspension at start and bedload at end and some reference to size of load carried in suspension for a second mark

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 … … **cm/sec**

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

Both figures accurate and correct - 2 marks

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

(3 marks)

Candidates Answer

As a rule of thumb, the biggest load size requires the highest velocity to be transported**.** However, the smallest particles, such as clay and silt require a very small velocity to be transported which is not shown on the Hjulstrom curve. This is because they are not able to penetrate the water surface.

Recognises two features – 1 regarding the largest size and 2 with reference to the smallest – 2 marks

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

Depending on the location of flooding events such as the one in Cornwall have a substantial economic, social and environmental impact. Social impacts, such as the destruction of homes and businesses, such as Mevagissy are particularly bad because they can affect the livelihoods of people and is some cases lead to fatalities.
This can lead to high expenditure and loss of revenue in tourist areas such as Mevagissy. This loss of revenue on economic impact, means that businesses may be forced to close due to a lack of custom, particularly in tourist areas such as Cornwall. Though not mentioned here, environmental impacts, due to the decrease in farming and loss of capital investment. such as loss of land, can have economic and social impacts due to a decrease in farming and loss of capital investment, all contributing to the severity of the flood.

The candidate refers to some impacts – but these tend to disregard Figure 2 and the instruction of 'Using Figure 2'. There is inaccurate description regarding the destruction of homes and businesses and in general the impacts described are overstated and generic. Level 1 – 2 marks

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

Candidates Answer

In the upper courses of the river, there is a large amount of potential energy which as the river flows downstream becomes kinetic energy. This is because of the increase in size of the body of water. In the upper course waterfalls are common place. This is because the river has little potential to erode laterally, so instead erodes downwards in an attempt to reach base level. Only small particles can be transported through solution and suspension.

(Upper course – waterfall and link to vertical erosion. Separate mention of energy and changes)

In the middle course we start to see the formation of the landforms as a result of lateral erosion. Whereas the river only previously could erode vertically, the power of the water erodes the sides, resulting in the formation of meanders and levees. This is because the rivers becoming more efficient, and has a larger hydraulic radius, meaning that more energy is put into the erosion of the river banks. Less energy is needed to overcome friction so that we see lots of evidence of erosional landforms.

(Middle course – notes different landforms and links to lateral erosion. Some drift to channel characteristics)

In the lower course, the river has a very high hydraulic radius, high kinetic energy and the competence and capacity to carry large particles. When the river reaches its mouth the deposition of sediment, it starts to lose energy often leads to the formation of deltas. This is because it starts to lose energy near to the sea, therefore depositing its load. In the lower course an expansive floodplain is also evident, which has times of high discharge, such as a storm often leads to the deposition of alluvium across the plain. This means that the land becomes more fertile, ideal for farming.

(Lower course – recognises valid landforms with partial explanation of why.) Refers to all 3 courses and identifies (rather than describes) landforms with some explanation of each one. Greater description and focus on overall changes needed. L2 9

2 **Cold Environments**

2 (a) Describe the distribution of polar and alpine cold environments

(4 marks)

Candidates Answer

Polar environments cover areas on the South and North Pole – 2 designated areas in the world were as alpine areas are areas of mountainous regions from the tree line upwards. They occur in places such as Russia, Canada and other mountainous regions. For examples the Alps and Andes are alpine areas.

Polar environments information is too vague and inaccurate. 2 marks are awarded for the recognition that alpine are mountainous and a named location – Alps/Andes.

2 (b)(i) Study **Figure 3** which shows drumlins in the Lake District

With the help of **Figure 3** describe drumlins

(4 marks)

Candidates Answer

Drumlins can be up to 15mm long *(Is this accurate from answer?)* and 100m high. They have a sloping end with a lesser gradient which points in the direction of where the glacier was moving compared to the steep side which points from which the direction of the glacier was coming from. Figure 3 shows other drumlins around it. Drumlins are found in large numbers, and are known as a swarm of drumlins.
Height is accurate and there is recognition of general shape and the fact that they occur in swarms 3 marks

2 (b)(ii) Explain the formation of drumlins

(7 marks)

Candidates Answer

There are several different theories to how drumlins were formed.
Firstly one theory suggests that a large piece of rock had been defrosted by the glacier and other bits of till had become stuck around it.
The glacier had smoothed down one side of the till through abrasion and plucking as it advanced.
On the other hand another theory suggests that the till that the glacier smoothed over through abrasion and plucking was already there – it pre-existed from another previously defrosting then till. The more recent glaciers had simply smoothed it over into a drumlin.
Furthermore others believe that the drumlin is only a small till sticking out of the earth. This till is made up of hard rock and is much harder to erode than softer rock around it.

Some confusion with roche moutonee. Some recognition of glacier shaping till L1 1 mark

2(c) Antarctica is a fragile wilderness; its use can never be sustainable.

Discuss this view

(15 marks)

Candidates Answer

A fragile wilderness is one where it and its surroundings are very delicate to change.

Definition of fragile wilderness

Antarctica has many natural resources of huge importance the main one being oil. However there is also mining opportunities as well as fishing opportunities.

Incorrect – mining is not allowed

Fishing out of all these resources are the most sustainable as they can re-populate quicker than non-renewable energy resources such as oil can as oil takes millions of years to produce whereas fish a few years.

However until 1994 whales in the Antarctic have been fished nearly to extinction with 250,000 blue whales living in 1908? Compared to only 10000 in 1990 proving that without regulation sustainability cannot be achieved due to greed of man. Therefore in 1994 Antarctica was declared a whale sanctuary with whaling being illegal to all apart from a few scientists for research. Since then whaling has declined rapidly and whales are repopulating proving that it in the long term and with certain resources there can be sustainable.

Whaling as an activity and considers need for regulation, but then looks at no use rather how its use can/cannot be sustainable.

However on the other hand non-renewable energy resourcing cannot be sustainable if started being taken advantage of by countries as they can't replenish. This is why the Antarctic treaty was put in place in 1961 in order to not use the natural resources in Antarctica. This was signed by 12 countries and since then there has been no exploitation of Antarctica's resources, thus proving to be sustainable.

No use here so question not being addressed

However after this 50 years the world may be in need of precious resources like the ones Antarctica has and thus exploitation of these resources may take place meaning that in the long run Antarctica's fragile environment will never be sustainable but only in the short run.

Discusses but looking to the future rather than what is known and no clear link to sustainability.

However even in the short run there has been an increase in tourism thus leading to pollution of waters in Antarctica, tourism has increased from 10,000 visitors in 1995 to 46,000 in 2006.

Tourism as a use considered.

To conclude, in the short run Antarctica can be sustainable due to regulation but in the long run, it can't.

L2 Describes some activities with two links to sustainability
Discussion not clear but begins to do this 9 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

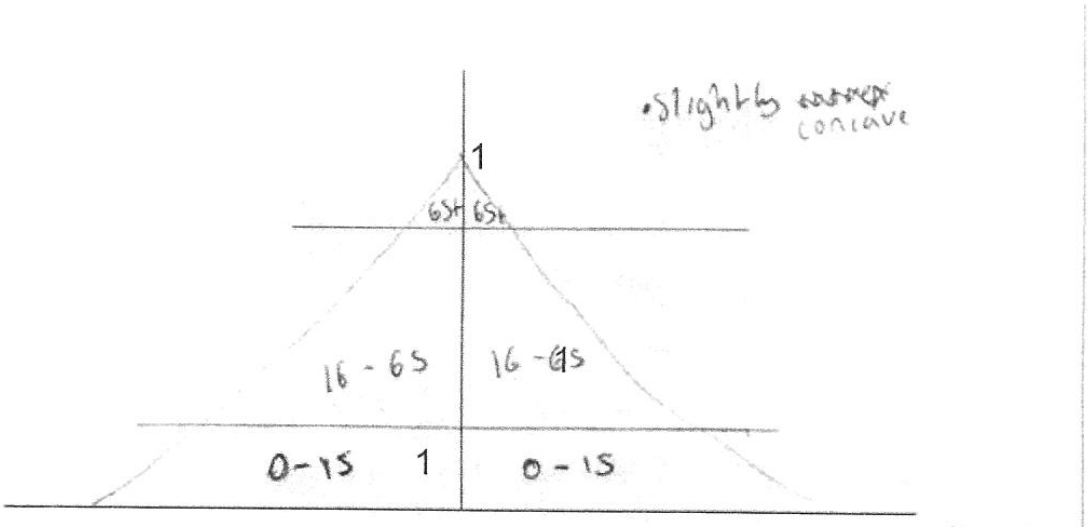
Kenya has a much higher proportion of people aged under 15 at 42% compared to Germany at 14%. Also Germany has a higher proportion over 65 at 20%, which is nearly 7 times that of Kenya. This shows Kenya has a youthful population with a high dependency ratio while Germany's is aging and has lower dr.

Two clear initial contrasts plus evidence to support over 65 statement and then goes onto note youthful versus ageing but marks already gained – 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

Candidates Answer



Symmetrical triangle, broadest part is base, only ages identified 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 2001 the shape is similar to a stage 4 because it has a general convex shapes apart from anomalies such as the baby boom of the 60's. However the evidence disappears because the proportion of 0-10's increases again to roughly 375000 girls and boys. This shows another baby boom has occurred during 00's.

Clear purposeful statements recognising evidence for both components 3 marks

5 (c) Discuss the implications of an ageing population

(6 marks)

Candidates Answer

An ageing population is often viewed as negative because of the burden it can be argued they place on society. However, some positive impacts can be if OAPs saved during work they can still contribute to the economy. Also if the retirement age is set higher, people will be able to work for much longer stimulating economic growth.

Negatives of an ageing population such as in Japan, show that there is a higher dependency ratio and therefore more investment is put into elderly healthcare. There may also be a need to encourage immigration if there are not enough people in the working age to fill all available jobs.

Describes positive and negative impacts – separate and unsupported points L1 4 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

Two population measures that will be used to answer this question are birth rate and death rate. The birth rate can be defined as the number of live births in a population per 1000 per year. The death rate can be defined as the number of deaths in a population per 1000 per year. Two case studies that will be used to answer this question are the UK and Uganda.

Defines pop measures

Pop measure 1
The UK is typical Stage 4 country on the DTM which shows how a countries birth rates, death rates and total population change over time. The UK has a birth rate of roughly 5 which is small compared to Uganda which has a birth rate of roughly 20. This shows four times the number of babies in Uganda are born. This is most likely due to high infant mortality rates in Uganda.

This is an indicator of development because it shows Uganda must have a higher number than the normal replacement rate as healthcare is poor and the babies often die. Low levels of healthcare show low levels of investment which suggests development in Uganda is hindered.

Describes how measure links to development –discussion follows

Pop measure 2
The death rate in the UK is also around 5 but may be higher in some areas. The death rate of Uganda is much higher at around 15, however this still shows Uganda having natural increase. Death rate can also measure development by healthcare. Diseases of affluence are the main killer in the UK rather than infectious diseases like typhoid fever. This is because healthcare in the UK has significant investment of up to £10 bn per year, put into the NHS. Uganda just cannot afford this and therefore their death rate is lower showing lower levels of development.

Inaccuracy here with UK death rate and in final statement

Overall, birth rate can show that the UK is an MEDC because the DTM shows that as countries develop, birth rates fall. Also healthcare in Uganda means they need to have more children especially due to the value of the child in primary industry. Death rate shows that healthcare in the UK is up to a standard that means diseases can be treated and its low. However in Uganda this is not the case which shows low levels of development in Uganda as a country.

Some discussion of usefulness – better on birth rate; limited support – sees some links L2 10 marks

6 **Food Supply Issues**

6 (a) Figure 8 shows percentage change in food production per capita, between 1960 – 1981 and 1960 - 2001

Summarise trends shown in Figure 8

(4 marks)

Candidates Answer

Africa is anomalous in comparison with the rest of the world currently as 1960 – 1981 – 6% change and 1960-2001 -10% change in comparison to Asia for example which was 14% change 1960-1981 and 73% since 1960- 2001. General trend is increase in food production per capita between1960-2001.

Anomaly recognised – but evidence could be provided more convincingly than lifting figures; notes overall increase 2 marks

6 (b) Figure 9 shows the top five global food retailers in 2009

6 (b)(i) Outline characteristics of the top five food retailers shown in **Figure 9**

(3 marks)

Candidates Answer

All of the top give global food retailers in 2009 location of head office is in either the USA or a European country. They are all considered to be MEDCS and are currently in G8. They are all earning in excess of 78 million $.

Head office characteristic and volume of sales noted 2 marks

6 (b)(ii) Suggest issues regarding the supply of food that may result from these characteristics

(3 marks)

Candidates Answer

The food may not be equally distributed globally as they are located in areas where food is perhaps less of a problem and the EU countries and USA are high consumers LEDCs may not be able to afford the produce as it will be taxed.

Begins to consider price at end but tax focus is incorrect. 0 marks

6 (b)(iii) **Figure 10 i**s a statement by Tesco, a transitional corporation (TNC), of some of its policies on food production.

With the help of **Figure 10,** comment on the positive role that TNCs may have in food production

(5 marks)

Candidates Answer

According to Figure 10 Tesco" seek to buy their seafood from responsibility managed fisheries" thus TNCs have a role of encouraging the act of responsibility managing fisheries and attempting to help the sustain fish populations. Sustainability is meeting the needs of today without compromising other's meeting theirs in the future. TNCs have money to afford. "technical experts" that can review their sources thus preventing damage to food resources. "Codes of practice" according to figure 10, have been put in place to ensure that the largest companies have standards which must be met thus showing a positive role, for their companies.

Level 2 – describes role but seeks to use information and comment on sustainability 4 marks

6 (c) Assess the success of high technology strategies (such as green revolution and generic modification) to increase food supply.

(15 marks)

Candidates Answer

Green revolution
The green revolution (1940s) was arguably very successful in increasing food supply at the time as it provided methods that could be easily put into practice across the globe.
For instance in Asia rice fields were 30% more productive after the green revolution strategy was put into practice. However, in Kenya although tea was produced successfully and more intensively it was wiped out in 2006 by a pest due to the monoculture set up which allows vulnerability to pests. Also, mechanisation and pesticides used as part of the Green revolution did mean that higher yields were taken thus increasing food supply. However although food supply did increase with the Green Revolution strategy it didn't necessarily get supplied to the areas needed as in most cases, eg Kenya growing tea, the crops growth in LEDCs countries which needed food security to reduce starvation were being grown as cash crops and being exported to places such as USA and Europe.

Looks at positives and negatives – assessment at start GM

Genetic modification is a recently developed (1960's) high technology strategy to increase food supply it works by inserting a desired gene into a plant to make the product more desirable to the consumer eg for example pest resistant crops.

This may be considered a good idea as places such as Uganda which struggles with climatic and soil conditions can be helped to create a better yield. However problems arise with how long it takes to develop each crop and the possibility of cross breeding. It does however provide a more stable source of food thus globally increasing food supply.
Considers positives and negatives

In conclusion, both strategies have been successful in their time to contain extent but neither are perfect. They both did increase food supply.

Assessment provided but is basic
Level 2 10 marks