2012 Geography

Advanced Higher

Finalised Marking Instructions

Geography 2012

Advanced Higher

Question 1

(a) Site should be drawn approximately to scale – does not have to have straight lines. Candidates should consider the need to locate on private land, with access to roads. Land should be reasonably flat/gently sloping, not too high and avoid badly drained sites and large areas of woodland within the actual site. Aspect may also be considered. Two marks for size, two marks for site.

(b) **(i)** **Advantages and disadvantages** will relate to site chosen. Might include access to communications and other amenities, distance from settlement, close to woodland to absorb noise/provide screening, mention of aspect/height/relief may be appropriate. Credit should be given to candidates who mention problems of using private land/farmland and how this might be overcome. May mention room to expand in future years. Candidates should make use of the atlas to put the site in context and should refer to the map eg candidates who refer to climatic data may get credit. Maximum of eight marks if they only write about one of physical or human, advantages or disadvantages.

The site is fairly large and may have to cross minor roads – candidates can use this to their advantage ie allows for natural segregation of parking/camping. Similarly, **small** areas of woodland will have the same effect.

(ii) **Planning/environmental considerations** – noise and light levels, disposal of litter, traffic management, CO^2 emissions, access for emergency vehicles, policing and security, licensing laws, local opinions, amenities – toilets, catering.

Solution – recycling of rubbish, park and ride/car sharing/encourage use of public transport (reduced cost of tickets for people who use public transport) and additional public transport provided, involve locals – free passes and job opportunities, monitoring noise and light levels and ensure that all events stop at a specified time, strict licensing hours, 24 hr policing, road diversions/closures. Maximum of 5 marks for only consideration or solution.

(c) **Short-term impacts** – can be positive and negative.
Positive – generating income to local businesses eg increased BB trade, local shops and restaurants benefiting, advertising for local businesses, temporary employment, local goods sold at Festival (Glastonbury contributes over £73 million to the UK economy per annum and average spend is £293 per person) – multiplier effect. Candidates may give quite a detailed response and make reference to a number of local businesses shown on the map extract.
Negative – localised congestion, increased crime/vandalism/litter, noise pollution.

Long-term impacts – increase in tourism for other areas of Northumberland eg Hadrian's Wall and Northumberland National Park, may attract more tourist related industries – long-term opportunities. Festival may increase in scale and will provide opportunities for year round employment, profits generated by Northumberland Country Council may be invested in the local area – new village hall, sports facilities etc.
Maximum of 5 marks for only short-term or long-term.

(30)

Question 2

(a) There are a number of ancient systems dating back to the Romans eg Hadrian's Wall Path (945695) and Roman roads eg Dere Street (985660). Hadrian's Wall Path is at the top of the map extract where the land is higher. It corresponds with the location of Hadrian's Wall where the height of the land would have been useful for defence. Remains, such as Turrets and Onnvm Roman Fort highlight this. There isn't a great difference in height along the path so, although higher ground, the contour lines are apart so the land itself would have been fairly flat to build on at that time.

Mention could be made of major east-west communication along the axis of the valley of the River Tyne (West to East) and approximately radial patterns from the market towns of Hexham and Corebridge.

To begin with the railway line is north of the River Tyne where there is flatter and lower land to build on. A bridge is used to cross the river at 913659 and allows the railway line to get into Hexham. A station can be found at 941644. The line still follows close to the river and the lower land.

The A69, in the west of the Extract is on the south bank of the River Tyne, again on gently sloping land. Bridges have had to be built at a number of places to allow the road to cross the river eg 922655 (credit for discrimination between old and new bridges), after this point the A69 continues along the north of the River Tyne. This has probably been done to avoid the town of Hexham and allow the road to continue on flatter land which is easier to build on. Embankments are used to reduce the risk of flooding. The amount of flatter land near the river in Hexham is limited and the railway line is already using this as its route way. The A69 runs West to East and links Newcastle with the main routes of south (M6 and A1M) and northwards (M74).

(b) There is a varied distribution and type of woodland in the map extract. Woodland should be clearly identified by grid references.

There are many examples of strips of woodland running along the edge of fields eg 876634, to help protect the crops and livestock from the wind.

Many smaller rivers have woodland on each side eg West Dipton Burn and Red Burn. This creates an ideal habitat for animals. Both these rivers have footpaths along the river and amongst the trees so this also means that it provides an attractive landscape for walkers too. Give credit for mentioning good schemes for woodland etc.

There are many examples of forest plantation eg High Wood (903645). Within this plantation there are non-coniferous and coniferous trees. The coniferous trees are likely to be felled and there are routeways within the plantation to indicate this. Shildonhill Plantation is another example of this. Stanley Plantation (970685) is also likely to be used for felling. This plantation has examples of coppice and non-coniferous and coniferous forestry. Some areas of distributed woodland may be cut down for shooting purposes.

(30)

Section B

Question 3

(a) (i)

Location of District Hospital	Location of Nearest Neighbour	Distance of km
Chitipa	Karonga	67
Karonga	Chitipa	67
Mzimba	Nkhata Bay	70
Nkhata Bay	Mzimba	70
Rumphi	Nkhata Bay	71
Dedza	Ntcheu	54
Dowa	Ntchisi	32
Kasungu	Ntchisi	58
Mchinji	Dowa	106
Nkhotakota	Ntchisi	58
Ntcheu	Balaka	38
Ntchisi	Dowa	54
Salima	Dowa	55
Balaka	Ntcheu	38
Chikwawa	Thyolo	37
Chiradzulu	Zomba	40
Machinga	Zomba	58
Mangochi	Balaka	61
Mulanje	Phalombe	26
Mwanza	Chikwawa	51
Nsanje	Thyolo	90
Phalombe	Mulange	26
Thyolo	Chikwawa	37
Zomba	Machinga	58
	Total	1322

Area of Malawi: 118, 484 sq km
$\overline{D}$=1322/24 = 55.08

NNI = $2\overline{D}$ √ N/A
= 2 × 55.08 √ 24/118 484
= 110.16 × 0.01
= 1.10
3 × working
1 × correct total
If unrounded values are used throughout the calculation or a value of 1.57 is obtained, this can be accepted. **4 marks**

(ii) The answer, being near to 1.0 is in the random section of the significant values diagram. This shows that there is no significant distribution pattern of District hospitals in Malawi. Only 24 points were used instead of the preferred 30 used for an accurate result. The nearest neighbour index is useful in giving a more objective description of spatial pattern shown but other factors have to be considered to help explain the result.

If the value 1.57 is used the significance is altered. Accept this. **6 marks**

(b) The text box provided tells the candidates that District hospitals are found in each district in Malawi. Use of the detailed map would allow candidates to mention how the size of each district may affect the result eg districts further north are more isolated that those in the centre and south of Malawi. Other factors which may affect the distribution of these hospitals is the physical geography of the area eg Lake Malawi and the elongated shape of the country. The detailed map also shows how well these towns are linked by road and railway. This may also influence where a district hospital is placed. The district hospitals are not found in the rural areas but in towns of a significant size good communications. This is likely to mean that people from the rural areas may find it quite difficult to access these health facilities. The actual location of the hospital in the town isn't shown so the distances have only been calculated from each town centre to the other.

Up to a maximum of five marks if no mention of nearest neighbour index. **10 marks**

(20)

Question 4

(a) The question asks for 'describe and explain' so there should be elements of both for full marks. There is no need to divide the marks equally between describe and explain. By far the largest % comes from Netherlands long established greenhouse growing system for fruit, vegetables and now flowers. (If candidates have read the whole question as advised they may use information from the second info box... that some of the flowers from the Netherlands may be re-exports or they compare the retail value of UK flowers of £2.2bn with the import value of £544.8m...some mark up!) 13% comes from Kenya, may be through Fairtrade and/or Commonwealth trade links. 7% from Columbia could be for different types of flowers or plants which might be worth the 1000 miles additional flying distance compared to Kenya. Different types of flowers or plants may also explain the small %s from Spain etc.

Maximum of 3 marks for description only. **4 marks**

(b) Again describe and explain elements required for full marks. Main points relate to huge differences in production costs – Netherlands relying heavily on greenhouses often heated by expensive fossil fuels, especially outside the normal growing season which would also include lighting the greenhouses to give a longer 'day'; compared to Kenya where many flowers can be produced outdoors/or under simple protective shelters because of its climate. Energy which is used is renewable solar and geothermal (from info box). The packaging costs are less in Kenya because of the need to keep the weight to a minimum so will use less! (they have developed recycled lightweight cardboard boxes for easy stacking in the aircraft compared to the fossil fuel produced poly packaging which may be used in the Netherlands). The main cost for Kenya is transport by air, but even when all this is added up the overall carbon footprint of Dutch flowers is six times that of Kenyan ones. **6 marks**

(c) The question asks for explanation so listing the environmental issues from the diagram is not acceptable. Issues can be dealt with individually or linked together to produce a more comprehensive answer. The second info box gives the location of the flower growing area along the shores of Lake Naivasha...this will be easy to find on atlases so information may come with atlas back-up. Effects of the various chemicals on the water quality of the lake – locals will use this for water supply, fishing; ingestion through food chain by locals; biodiversity may suffer since pesticides are not selective: soil erosion and compaction – obvious impact on farming but also possible flooding and run-off issues resulting in poorer infiltration. Accept any reasonable explanations linked to the items on the chart. **6 marks**

(d) This should be very straightforward. Pie chart clearly shows proportions and therefore easy to select information from it/use for comparison. For this question it is an ideal way to present the %s of flower imports as it gives the whole picture straight away. The flow diagram may also be linked to a systems diagram as it shows inputs and outputs and organises it to allow commentary on the component parts. Any reasonable comments acceptable. **4 marks**

(20)

Question 5

(a) The linear transects should be regularly spaced and (4-8 transects) cover the whole area of the beach shown on supplementary item G. Give one mark for coverage of the whole area and one mark for approximately regular spacing. **2 marks**

(b) A beach profile of changes in gradient and elevation can be obtained by a simple survey using a tape and a clinometer, or by levelling or by use of GPS. Give 2 marks for a straightforward and clear explanation of field work involved in such a survey. Up to 3 marks will be given for commentary.

Maximum of 3 marks for only processing or only collection. **4 marks**

(c) Problems that may be encountered in collection of suitable field data for this survey include:

- Where to locate samples along the transect to collect the most appropriate data.
- If data are to be collected from low tide point then data can only be collected from the time of low tide.
- Time of the year (spring/neap tides) and weather conditions immediately before sampling will affect results. All of the transects should be surveyed at the same time (on a single day).
- It may be difficult to measure minor variations in beach profile accurately. However, minor variations may be important in the assessment of relationships.
- There will be variations in all parameters according to when the survey is conducted (eg winter or summer). Thus the data obtained only gives a "snap-shot" of relationships that is valid for that time of year.
- Safety considerations are a valid problem issue.
- Human error.

[END OF MARKING INSTRUCTIONS]