



2008 Geography

Advanced Higher

Finalised Marking Instructions

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Section A

In both map interpretation questions answers **MUST** make extensive and detailed use of the OS map. Correct Grid References, actual heights, description of slopes and aspect are required in a series of examples. The use of the atlas should be explicit and useful in setting the area in its broader context and in helping with Geological timescale. Candidates are also expected to have a background knowledge of planning and environmental assessment to add depth in the decision making question. Answers which fail to **INTERPRET** the map with clear map evidence should be penalised. These questions are worth 30 marks which are generally awarded holistically in line with the overall AH descriptions of expected standards but it is necessary to earn the marks in each part by using the time to its fullest.

Question 1

- (a) Allocate approximately 3/3 for choice of routes. There is no need to measure them accurately but use grid squares to give rough guide. Penalise for over short or overlong routes or routes which do not stick to the east/west of Easting 25. **6 marks**
- (b) Allocate the 6 marks over the two routes for a series of labels on the routes to pick out the main points. Annotations are not required as there is ample opportunity in part (c) to develop answers properly. **6 marks**
- (c) Allocate approximately 9/9 but neither route should get more than 11 marks. Part of the mark allocation may be used for an introduction identifying the location of the area and the connecting routes from the motorway to centres of population or to other tourist areas.

West of Easting 25 has more challenging terrain and could be identified as being more suitable for fitter cyclists. Credit should be given for routes which offer variety of scenery which should be described and grid referenced. This could include types of slopes, valleys, streams; atlas should show that this is an AONB...viewpoints both marked and those worked out by candidates where they appreciate intervisibility or views from lower ground towards the hills. Comments about the human landscape could include not only those below but also related to farmland.

A vast array of examples of places for stopping whether for sight-seeing, eg interesting villages; food breaks in pubs or picnic areas; visitor centres; areas of woodland with possible nature interest; a spot of fishing at Hawkridge reservoir; souvenir from a pottery.

East of Easting 25 the slopes are flat or gentle for the most part (but some more interesting relief in the Puriton area) so may be good for young families or less fit folk.

Routes along the River Parrett should offer river views and possible nature interest; Bridgwater provides lots of interest for tourists and existing routes tend to support this; there are also plenty of interesting villages with pubs etc; if they include the orchards they could pick some fruit; need to avoid most main roads and of course the motorway! Some cycle hire and gardens also in Cannington. **18 marks**

Inclusion of reference to and use of Supplementary Item B should be credited when used with map evidence.

Do not give credit for endless lists even if they have GRs!!. Expect candidates to do 'joined-up thinking' and expand and relate different points.

Question 2

- (a) Some patterns West of Easting 25
- Higher relief with reservoirs.
 - Small rivers draining the area.
 - Higher relief shows springs – examples with Grid references.
 - Disappearing rivers.
 - Many areas void of surface water.

Some patterns East of Easting 25

- Flatter area centred around the River Parrett.
- Poorer drainage.
- Evidence of drainage ditches.
- River Parrett in the lower stage – pronounced meanders, large flood plain.
- Some exceptions to pattern at Pawlett (298428) and Puriton (324415), land is steeper and little evidence of surface drainage in places.

Explanation

Reference should be made to the geology of the area, differences between the permeable and impermeable rock areas.

Land use can help explain drainage pattern – East, are farming areas on the flatter land so need for drainage in impermeable rock – straight edges. East of 25, many water areas used for Nature Reserve 315351 and a youth activity centre 298399. Reservoirs for storage of water found nearer the higher relief probably due to the nearness of the permeable rock.

Relief of area East of 25 is flatter and more evidence of marsh areas 317387.

Pawlett and Puriton found in an area of limestone explaining higher relief and lack of surface drainage. Surface drainage found when alluvium appears at surface.

15 marks

- (b) Land-use and Human activity

Relief is steep and reaching up to 386m in the Quantock Hills area, hence the coniferous plantations which can be found.

Permeable nature of the rock leads to a need for reservoirs Hawkridge (2036) and Durleigh (2636). There are also recreational uses for this such as fishing.

Flatter areas are used for farming, although drainage ditches are required to drain the land. Also communication lines tend to be found there too. (Motorway M5, and many A class roads).

Larger settlements are found in the flatter area (eg Bridgwater), but around the Quantock hills smaller settlements can also be found where water appears or before it disappears West Bagborough (169336), Holford (152408), Nether Stowey (188396).

Tourism is very much seen in the areas of higher relief with viewpoints, footpaths, bridleways seen throughout the area. Also evident are picnic area and parking areas highlighting the scenic nature of the areas with higher relief. Youth activity centre in the flood plain of the R. Parrett.

Industrial estates (3034) and (3041) found on the flatter land where communication lines are better.

Undulating land more useful for mixed farming – evidence of Creamery (249389).

15 marks

Question 3

(a)

Rainfall totals in millimetres for July 1986 to 2005 for Mumbai, India.

Year	x	\bar{x}	$(x - \bar{x})$	$(x - \bar{x})^2$
1986	180	662	-482	232324
1987	700	662	38	1444
1988	820	662	158	24964
1989	800	662	138	19044
1990	300	662	-362	131044
1991	1150	662	488	238144
1992	500	662	-162	26244
1993	700	662	38	1444
1994	920	662	258	66564
1995	500	662	-162	26244
1996	1000	662	338	114244
1997	550	662	-112	12544
1998	620	662	-42	1764
1999	480	662	-182	33124
2000	1140	662	478	228484
2001	550	662	-112	12544
2002	100	662	-562	315844
2003	780	662	118	13924
2004	800	662	138	19044
2005	650	662	-12	144
	13240			1519120
	662			

$$= \sqrt{\frac{\Sigma(x - \bar{x})^2}{n}} = \sqrt{\frac{1519120}{20}} = \sqrt{75956} = 275.6$$

Standard deviation from mean is 275.6mms.

5 marks

(b) The result shows that the South West monsoon rains for Mumbai in July varies by 275.6mms from the mean.

2 marks

(c) Standard deviation is one of the most important descriptive statistics. It gives a more accurate figure than the range or inter-quartile range because it takes into account all the figures and gives the extreme values more weight by squaring.

Shows extent of the differences/variances from the mean.

Accept other suitable reasons.

4 marks

- (d) The standard deviation is large and the actual figures from the table reflect this. For a city on an island and where a quarter is below sea level the effects of such large amounts of rain in such a short period of time will certainly cause flooding. Some years eg 1991, 1996 and 2000 where totals exceed 1000mms flooding must have happened... and did; lives could be and were lost; flooding of financial centres, stock exchange etc could cause very serious problems for the economy of not only the city but also for the country with HQs of companies etc.

Surrounding farmland which requires the rain can also have too much of a good thing!

Any evidence of candidates using clear thinking should be rewarded. Atlas back up would also be used effectively in the best answers.

9 marks

Question 4

- (a) Candidates should use the diagram to show movement of sediment eastwards from Christchurch to Milford on Sea.

Gravel and sands moved from Christchurch to Milford on Sea, starting at >20 000m³a⁻¹ then reducing after Highcliffe to 10000-20000m³a⁻¹ and at Milford on Sea to 3000–10000m³a⁻¹ until Milford Haven. Movement shows process of longshore Drift. Hurst spit shows a more permanent feature of this movement and coastal deposition. Here >20 000m³a⁻¹ of gravel is moved to create this feature.

Inputs into the system include sediment from mass movement (cliff erosion) between Highcliffe and Milford on Sea. Other inputs include river sediment into Christchurch harbour and estuarine sediment from West Solent.

Estuarine sediment enters Christchurch bay at the Needles Channel and moves to the South West as sand. Evidence of Shingles bank – more permanent feature created by the sediment transport.

Using the key, mention should be made of the type of sediment and its quantity. **8 marks**

- (b) (i) Looking at the diagram, candidates should describe in detail how each of the causal factors could lead to the process of cliff failure, eg undercutting at the base of the cliff resulting in mass movement, heavy rain soaking into the soft cliff, filling pore spaces and leading to an increase in weight then mass movement. Candidates can then explain the effect that cliff failure could have on each of the impacts shown on the diagram – loss of cliff, property/infrastructure and safety. **8 marks**

- (ii) Advantage of using a systems diagram to show this information
- Can put across basic concepts and ideas.
 - Portrays the components and structures of systems, to communicate quite complex relationships.
 - Can be used to summarise information.

Candidates who interpret the question as analysis of the methods of graphical presentation used in the diagram should be given credit for this. **4 marks**

[END OF MARKING INSTRUCTIONS]