X208/13/01

GEOGRAPHY ADVANCED HIGHER

1. Candidates are expected to attempt **three** questions, **one** from Section A and **one** from Section B, **and** the question in Section C.

2. Both questions in Section A are worth 30 marks each and both questions in Section B 20 marks each. The question in Section C is worth 10 marks.

3. In all questions, marks will be given for sketch-maps and diagrams which are integral parts of an answer.

4. Candidates are encouraged to use the Supplementary Items and tracing paper provided for annotation or as bases for diagrams. If used, the resources should be placed inside the front cover of the candidate's answer book.

5. Candidates are reminded that they have an atlas which can be a valuable resource in answering questions in all parts of the paper.

SECTION A

Answer ONE question ONLY from this Section

Map Interpretation

Supplementary Item A, Ordnance Survey Map, Extract No 2113/OL24 1:25000 (Explorer Series), The Peak District, Matlock, is the basis for answers to questions in this Section.

For whichever question you choose in this Section (ie 1. or 2.) you are expected to make extensive and detailed use of your atlas and, <u>in particular, the map extract</u>.

You are strongly advised to read the whole of both question 1 and question 2 before you make your choice.

1. The area of the map extract includes a section of the Peak District National Park. The Peak District was Britain's first national park, designated in 1951. It attracts over 10 million visitors per year.

   The Derwent Valley south from Matlock Bath (named in square 2858) to Derby is a World Heritage Site.

   A developer is looking to buy an **existing property** to start a riding centre. The property needs to provide space for bed and breakfast guests, riding stables, and office. Grazing fields for horses are to be included in the development, which measures 500 x 500 metres.

   In the area shown on *Supplementary Item A* there are bridleways, cycle paths which can be used as bridleways and quiet local roads between Carsington Water and the edge of the Peak District National Park. These would provide a variety of routes for visitors using the stables and B&B accommodation**.**

   (*a*) Choose an appropriate site for the development, draw the outline to include the buildings and fields accurately on tracing overlay, *Supplementary Item B*.   **4**

   (*b*) In your answer book discuss, in detail, the physical **and** human reasons, backed up by **detailed map evidence**, for your choice of site.   **10**

   (*c*) Choose one route (using existing local roads, cycle paths or bridleways), starting and finishing **at the edges of your chosen site**, which could make an interesting short riding trail (10–15 km) for visitors to the centre. Trace this **carefully** onto the tracing overlay *Supplementary Item B*.   **6**

   (*d*) Using detailed map evidence, explain why this route is suitable by using examples of a range of interesting physical and human features of the landscape which visitors would experience along the route.   **10**

      (30)

2. The 15 mile stretch of the Derwent Valley from Matlock Bath (named in square 2858) to Derby was designated as a World Heritage site in 2001. Its importance was recognised because it was here that the technology to use water to power textile mills was first used in the 18th century.

(*a*) Using **detailed map evidence**, and examples from several specific areas, **describe** the course of the River Derwent and its valley between Northings 53 and 63 using *Supplementary Item A*.

14

(*b*) **Explain** how the physical features of the river and its valley, described in part (*a*), have influenced the human use of the land between Northings 53 and 63.

16

(30)

[Turn over for SECTION B on *Page four*

SECTION B

Answer ONE question ONLY from this Section

Geographical Methods and Techniques

For whichever question you choose in this Section (ie 3. or 4.) you are encouraged to make use of your atlas.

You are strongly advised to read the whole of both question 3 and question 4 before you make your choice.

3. A survey was carried out at Brockhole, The Lake District Visitor Centre in Windermere, to establish the distance people travelled to visit the Lake District National Park and how long they stayed with each visit. The results were divided into:
    Group A, those who lived within 30 km of the National Park, and
    Group B, those who lived more than 30 km from the National Park.

    The results of the survey can be found in the table below.

Group	Up to 4 hours	4 – 24 hours	More than 24 hours
A	32	53	15
B	11	19	49

   (*a*) State the null hypothesis.

1

   (*b*) Complete the table in *Supplementary Item C* and calculate Chi-squared to determine whether the observed frequencies differ significantly from the expected frequencies. (See formula on *Page five*). State the result in terms of the null hypothesis.

6

   (*c*) Comment on the usefulness of this technique.

4

   (*d*) Using the data from the table, comment on your conclusions as they relate to this example.

9

(20)

3. (continued)

The formula for the chi-squared test is

$$x^2 = \Sigma \frac{(O-E)^2}{E}$$

Where O is the observed value and E is the expected value.

The expected values are obtained by multiplying the row total by the column total and dividing by the grand total. All stages to two decimal places.

The required significance level is 0·05 (see *Supplementary Item C*).

The degrees of freedom are calculated using the formula

Df = (r − 1) × (k − 1) where r = number of rows and k = number of columns.

[Turn over

4. A Coffee Company is opening a coffee shop and has selected three potential sites *Marks* for the business. They have carried out an Environmental Quality Survey in each area and the results are shown in the biopolar analysis graph below.


Environmental Variable Score
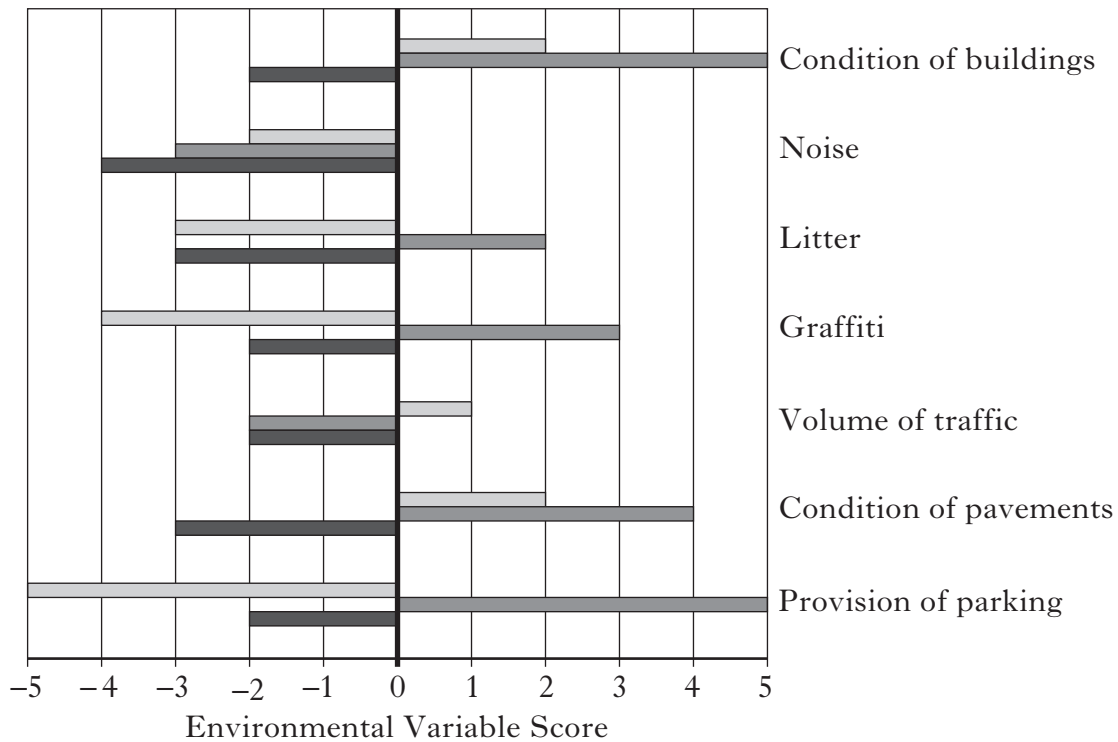
Environmental Variable Scores	Key
Good environments provide positive scores with 5 being the best environment. Poor environments provide negative scores with −5 being the worst environment.	Site 1 / Site 2 / Site 3

(*a*) Comment on the suitability of this method of presenting this type of information in comparison with other graphical techniques. **4**

(*b*) What does this graph suggest about the three different sites? **4**

(*c*) The company has mapped coffee shops within a 10 km radius from each site. The results for Site 1 are shown on the polar graph below.
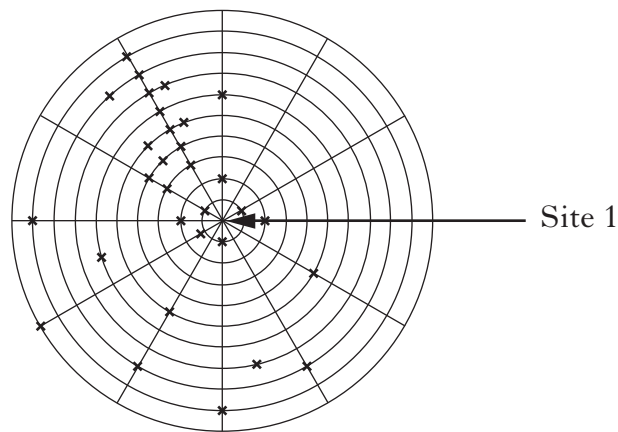
Site 1

Suggest reasons for the distribution of coffee shops around site 1. What other additional information would be useful in helping to explain the distribution? **6**

4. (continued)

(*d*) Pedestrian counts have been carried out at each site over a period of a month. The counts were taken for a period of 30 minutes on different days of the week and at different times of the day. The results for each site are shown below and indicate the average number of pedestrians walking past the potential shops, and on the opposite side of the road.

Site	Average count over 30 minutes Outside shop	Average count over 30 minutes Opposite side of street
1	55	45
2	66	75
3	45	49

(i) Describe an appropriate technique that could be used to illustrate the data, and

(ii) discuss the benefits of using such a technique.   **6**

(20)

[Turn over for SECTION C on *Page eight*

SECTION C

This question must be answered

5. A student has collected daily values for rainfall and number of hours of sunshine, over a period of two months, at a weather station at their school.

(*a*) State **two** methods of statistical analysis that might be used to investigate relationships between the two sets of data, and state a suitable null hypothesis. **5**

(*b*) Comment on advantages and disadvantages of the two methods of statistical analysis that you have chosen. **5**

(10)

[*END OF QUESTION PAPER*]