OXFORD

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GEOGRAPHY

9230/3

Paper 3 Fieldwork and enquiry skills

Mark scheme

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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from oxfordaqaexams.org.uk

Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student's answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student's answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student's answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.

Section A – Geographical skills **Total for this section: 20 marks**

Question 1

Qu	Part	Marking guidance	Total marks
01	1	**Which one of the following is an example of qualitative data?** Shade one circle only Answer = C	**1 (AO3 =1)**
01	2	**Identify one advantage and one disadvantage of choropleth maps.** Must have one advantage and one disadvantage. **Advantages:** Clear visual patterns can be identified from use of choropleth maps (1). Choropleth maps show different categories clearly (1). They show variations between different regions clearly (1) Comparisons and contrasts between regions can be made easily (1). **Disadvantages:** Choropleths can be misleading as they do not reveal significant variations/detail at a local scale within the same shaded/boundary area (1). They also imply sudden/abrupt changes at area boundaries, which is usually not the case (1).	**2 (AO2 =2)**
01	3	**Identify the three coastal landforms indicated on the photograph by adding labels to the boxes.** Boxes on labels should be completed by correctly identifying the correct landform in each case. Top box = arch (1) Middle box = stump (accept stack) (1) Bottom box = cliff (1)	**3 (AO2 =3)**
01	4	**Complete the bar chart in Figure 2 using the data for 2018 shown in the table below** Correct plotting of one bar = 1 mark	**1 (AO4 =1)**
01	5	**Using the data in the table, calculate the mean annual rate of erosion from 2010 to 2018.** Mean = 1.21 m/year or accept 1.20 m/year (1 mark)	**1 (AO4 =1)**

01	6	**Describe the changes in the rate of erosion shown in Figure 2.** The rate of erosion fluctuates (1) over the period from 2010 to 2018 but generally and over the whole period it increases (1).There is a fall in the rate of erosion from 2010 to 2011(1) but it then increases from 2011 to 2013 (1) only to fall slightly in 2014 (1). From 2014 to 2017 the rate of erosion increases again(1) but then falls again in 2018 (1). Maximum 1 mark for data manipulation if used descriptively (e.g. almost doubled) but no credit for direct use of figures as these have been given in the table.	**2 (AO4 =2)**

01	7	**Suggest two reasons why coastal erosion rates vary between years.** One mark for each reason. Must be two separate reasons for both marks. Basic idea needs to be explained briefly. Expect to see any of the following: • different weather conditions (1 basic mark) • more storms mean stronger winds (1) • higher wind speeds affect strength of waves – more wave erosion (1) • heavier rainfall in some years (1), • variations in sea levels from year to year(1) • increase in sea levels as a result of climate change (1) • high (spring) tides coinciding with storms (1) • weathering will vary (named) – freeze-thaw, biological, chemical (1) • human activity – e.g. sea dredging, soft engineering, beach regeneration, footpath erosion on cliff tops etc (1) Credit any other valid reason offered.	**2 (AO3 =2)**

01	8	**State the population category of New York** One mark for either: stated 'category 2' (1) **or** stated population range 15 to 19.99million (1)	**1 (AO4 =1)**

01	9	**How many cities shown on Figure 3 are within population Category 3 (20 million–25 million)?** Answer = 3	**1 (AO4 =1)**

01	10	**Calculate the predicted population total for Luanda in 2030.** Luanda's predicted population for 2030 = 12.26 million (1) (accept 12.30 million)	**1 (AO4 =1)**

01	11	**Which one of the following cities is predicted to have the largest increase in GNI per person between 2018 and 2030?** Answer = D	**1 (AO4 =1)**

01	12	**Suggest why the cities shown in Figure 4 have different rates of population growth.**	**4 (AO3 =2) (AO4 =2)**

Level 2 (Clear)	3 – 4 marks	Presents a clearly reasoned case for why the population growth varies between the cities listed. There should be clear reference to the table to support the case being made.
Level 1 (Basic)	1 – 2 marks	Presents only a basic explanation of why the population growth varies; may be more descriptive than suggesting valid reasons. Only limited, if any, reference is made to the data presented in the table to support a basic explanation.
	0	No relevant content

Notes

Description of the differences from the data is not creditworthy unless the description is linked to some reasoning based on location, level of development or earnings.

Indicative content

- The main reasons for population growth in cities are natural increase and migration. Natural increase will generally be higher in more youthful populations.
- Level of development – higher BR/lower DR/higher natural increase in developing countries; the reverse is true of more developed countries.
- Luanda and Dar es Salaam with the highest predicted growth are in LDCs and to have the highest natural increases.
- Seoul and London have the lowest natural increases and also the lowest population growth rates.
- Although there are exceptions (Chennai), the notion of income seems to have some bearing on predicted population growth.
- The most rapid population growth predicted is in two of the poorer cities with lower GDP per capita – Luanda (63% is the 4th poorest) Dar es Salaam (61% is the poorest) while generally the richer cities (London and Seoul) are predicted to have slower growing populations.
- The proportional increase in GDP/capita in Luanda and Dar es Salaam are two of the highest, suggesting that the standard of living in these cities is rapidly improving and therefore attracting more (younger) rural to urban migrants.
- Many Asian cities have undergone their main period of urbanisation period and while they are still growing, the rate of rural to urban migration may be slower than in less developed African cities
- London and Seoul have higher total predicted increases in earnings but in terms of percentage increase they are low. The higher earnings will attract migrants to work there but at a lower rate than in the more rapidly developing cities.

Section B – Fieldwork enquiry skills **Total for this section: 20 marks**

Question 2

<table>
<tr><th>Qu</th><th>Part</th><th>Marking guidance</th><th>Total marks</th></tr>
<tr><td>02</td><td>1</td><td>Complete the divided bar graph for Site X by plotting the data shown below.
Shrubs = 8%
Cacti = 10%

Completion of divided bar chart with dividing line at 90% and correct shading for both types of vegetation = 1 mark</td><td>1
(AO4 =1)</td></tr>
<tr><td>02</td><td>2</td><td>Calculate the percentage of grass cover at Site Z.

23% - 1 mark</td><td>1
(AO4 =1)</td></tr>
<tr><td>02</td><td>3</td><td>Compare the percentage cover of the vegetation types between the three different sites.

<table>
<tr><td>Level 2 (Clear)</td><td>3 – 4 marks</td><td>A clear comparison is made of the three different sites in terms of the types of vegetation cover at each.
There should be clear reference to the data provided by the divided bar graphs.</td></tr>
<tr><td>Level 1 (Basic)</td><td>1 – 2 marks</td><td>A basic or limited comparison made of the vegetation cover at the sites.
Limited or inaccurate reference is made to the data provided by the divided bar graphs</td></tr>
<tr><td></td><td>0</td><td>No relevant content</td></tr>
</table>

Indicative content

There should be comparisons made between all three sites. If only two sites are compared in a response it is limited and should be capped at maximum Level 1.

No credit for individual statements about each site without any comparative statement being made.

• Site X has the highest percentage of bare ground (over 50%) while both Y and Z have less than 30% of bare ground.
• Site Z has the highest proportion of tree cover (36%) whereas has less than 10% and X has no tree cover.
• Site Y has the highest percentage coverage of shrubs (32%) and equal highest proportion of cacti (shared with X).
• Site X has no tree cover nor bushes while Y and Z share an equal proportion of the bushes.</td><td>4
(AO3 =2)
(AO4 =2)</td></tr>
</table>

		• Grasses are relatively evenly spread between all 3 sites with X having the highest proportion (28%) and Y the smallest proportion (18%) so only a 10% difference. • Site Y has the most varied range of vegetation cover (highest biodiversity) containing relatively equal proportions of all 5 vegetation types and some bare ground. • The other two sites (X and Z) both contain 3 types of vegetation and bare ground but site Z has a more even spread of these, while site X is dominated by bare ground and grasses (82% combined).	

02	4	**Complete the table below using the data in Figure 5 to identify the correct site for each statement.** The site showing most evidence of re-forestation as a strategy to reduce the risk of desertification = **Z** (1) The site with most evidence of over-grazing = **X** (1)	**2 (AO3 =2)**

02	5	**Complete the isoline for 50 pedestrians in Figure 6.** One mark for completing the uncompleted isoline accurately so that the line is drawn on the correct (east) side of the scores of for pedestrian counts of 42, 44, and 48 (closer to the 48 than the other two scores) and to the north and west side of the score of 54 (slightly closer to the 54 than to 42 or 44).	**1 (AO4 =1)**

02	6	**Describe the pattern of pedestrian numbers shown on the completed Figure 6.** The highest pedestrians isoline (200) counted is centred around the Agramonte area (1) and along the roadway to the south (1). The number of pedestrians starts to decline gradually away from this area (1) but in an uneven pattern (1). There is an elongation of the 100 and 50 isolines to the east (1) and to the north (1) showing higher numbers of pedestrians are sustained in these two directions (alternatively numbers fall away more quickly from the centre to the west and south (1)).	**2 (AO4 =2)**

02	7	**Calculate the median value for Location A.** Median value = 22 (1 mark)	**1 (AO4 =1)**

02	8	**Calculate the inter-quartile range for Location B.** UQ = 19; LQ =12 (1) Inter-quartile range = 19-12 = 7 (1)	**2 (AO4 =2)**

02	9	**Evaluate the suitability of this data collection method for measuring environmental quality in urban areas.** **Use Figures 7A, Figure 7B and Figure 8 in your answer**	**6 (AO3 =3) (AO4 =3)**

Level 3 (Detailed)	5 – 6 marks	Detailed evaluation of the strengths and weaknesses of EQS as a method to measure environmental quality. Reference made to the figures when making a judgement about EQS as a suitable method.
Level 2 (Clear)	3 – 4 marks	A clear evaluation of the strengths and weaknesses of EQS as a method to measure environmental quality. Some reference made to the figures when making a judgement about individual EQS as a suitable method.
Level 1 (Basic)	1 – 2 marks	Offers only a basic or limited evaluation of the data collected, identifying basic strengths and weaknesses. Limited reference to the resources when making a judgement about the data collection.
	0	No relevant content

Indicative content

Evaluation should refer to environmental quality surveys being an appropriate tool for measuring environmental quality in different (urban) locations so should identify strengths and weaknesses of its use in this context.

Strengths could be that it attempts to quantify something that is subjective and ascribe a value based on a variety of features that might be seen to contribute to environmental quality. It could be suggested and argued that the higher scores given for location A reflect that it has grander architecture and better kept buildings plus some greenery. On the other hand, traffic and noise may have tempered the high scores, especially among some students who give more weighting to this feature.

Location B is less interesting and the buildings are in need of repair, there is less scenery but there is less traffic and so it is quieter. This may be the reason there was less consensus and a greater spread of scores. Presenting EQ scores on a dispersion chart could indicate a strength as it shows where there is more clustering there is more consensus. On the other hand, the dispersion charts indicate a fundamental weakness with EQS in that it is still subjective and the range of scores for location B do not suggest it is a good method of ascribing value to environmental quality.

Individual students will have different subjective values and give different weighting to different features on the survey.

		Accept that the EQS scores may have been based on seeing the two photographs only as secondary data. There may be some suggestions for improvements, for example how the survey is carried out and that there should be one measure only at each location made after a consensus by all the students. If the evaluation refers to the data collection more generally, rather than specifically using the EQS method = max L1.	

Section C – Individual fieldwork enquiry **Total for this section: 20 marks**

State the title of your fieldwork enquiry

Question 3

Qu	Part	Marking guidance	Total marks
03	1	**Identify two potential health and safety risks at the location where the data for your geography fieldwork enquiry was collected.** A range of valid responses may be offered depending on the nature of the fieldwork enquiry and how the data was collected. For example, in an urban enquiry there may be reference to traffic and road safety issues (1), to vehicle/air pollution (1) or potential for disease transmission in areas with polluted air/waste/water(1). Similarly, if it is a coastal fieldwork enquiry, then risks to collect data may have involve the dangers associated with being near to water (1), or near cliffs at (at height- falling (1); or below and falling stones etc. (1)). Risks associated with trips and slips (1) are common and credit worthy as are those associated with weather conditions (1), e.g. extremes of temperature. (The risks can include any for which measures can be taken to reduce the risk, though this is not necessary in the answer). Data doesn't have to have been collected by the candidates themselves but there should be some recognition of health and safety risks involved based on the location. Allow credit for reference to **e-safety issues** with research and collection of data from internet or other electronic sources, including eye strain/headaches from too much screen time (1), repetitive strain (1) and dangers of unwanted contacts(1). Credit 1 mark for each valid health and safety risk that is identified.	**2 (AO3 =2)**

03	2	**Outline the reason for your choice of sampling method used to collect your data.** A range of valid responses may be offered depending on the nature of the fieldwork enquiry and the sampling method that was used to collect the data. The response should identify why the **method,** such as random, systematic, stratified etc. was suitable (1) (e.g., avoids bias, provides a control) based on the **data** collected or **how** it was sampled (e.g., use of quadrat, every third person etc.) (1). For example, line or belt transects across beaches or in different parts of an urban area will usually be systematic to identify changes over distance (1). Sampling a population to represent a large area may have to be done randomly for time efficiency (1). Stratified sampling may be carried out to pick out particular known features (1). A combination of methods may have been used and is creditworthy providing the reason for doing this is clearly explained.	**2** **(AO3 =2)**

03	3	**Justify one data presentation method that you used in your fieldwork enquiry.** **Indicative content** Responses will vary and depend upon the nature of the method used to present the data that has been collected. Any relevant method of data presentation linked to the aim of the investigation is valid. Initially, there should be an identification of the type of visual presentation method used, whether, graphical or cartographical (and if so, what type) and an explanation of how it was used and/or what was presented. There should be an attempt to justify why the presentation method was an appropriate one to use – this linked to the nature of the data collected and/or to the aim of the enquiry and what it was intended to show or prove. Links to the analysis of the data are also valid if the method helped with analysis.	**4** **(AO3 =4)**

Level 2 (Clear)	3 – 4 marks	Provides a clear explanation of the method of data presentation used. Demonstrates clear knowledge and understanding of why the presentation method was appropriate to the data and/or aim of the enquiry
Level 1 (Basic)	1 – 2 marks	Provides only a basic description or explanation of the method of data presentation used. Shows limited knowledge or understanding of why the presentation method was appropriate.
	0	No relevant content

03	4	**How effective was your fieldwork data in allowing you to make reliable conclusions?**	**6 (AO3 = 6)**

Level 3 (Detailed)	5 – 6 marks	Provides a full account of the data collected and a detailed assessment of how this allowed reliable conclusions to be reached. Demonstrates a full understanding of the links between data collection and reliability of conclusions.
Level 2 (Clear)	3 – 4 marks	Provides an outline of the data collected and a clear assessment of how it allowed reliable conclusions to be reached. Demonstrates a sound understanding of the links between data collection and reliability of conclusions.
Level 1 (Basic)	1 – 2 marks	Offers only a simple description of the data collected and limited assessment of how it allowed reliable conclusions to be reached. Demonstrates limited understanding of links between data collection and the reliability of conclusions.
	0	No relevant content

Indicative content

Responses will vary and depend upon the type of data collected and the methods used to collect it. Any relevant method of data collection linked to the aim of the investigation is valid.

Candidates will be expected to outline the data that was collected in terms of its relevance to the enquiry. They should also explain the methods used to collect this data, especially referring to the consistency of the methods deployed (e.g. measurements) and accuracy of the results recorded.
The key to answering the question more substantially is to demonstrate the link between the data collection and how it enables reliable conclusions to be reached.

There should be some assessment in the response of the extent to which the conclusions are reliable because of the strength of the data. There may be reference to limitations in the data collected leading to less than reliable conclusions. For example, there may be reference to insufficient or inappropriate data being collected. Similarly, there may be evidence of inconsistencies or inaccuracies in the data collection and recording. Reference to abnormal or extraordinary conditions (weather or otherwise) may also contribute to unreliable conclusions.

Reference may also be made to how the results of the data collected were analysed. This is valid and creditworthy, especially if it establishes the link between the strength or weaknesses of data collection and the reliability of conclusions.

03	5	**To what extent did your conclusions support the geographical theory or idea on which your enquiry was based?**	**6 (AO3 = 6)**

Level 3 (Detailed)	5 – 6 marks	Demonstrates detailed understanding of the geographical theory or idea on which the enquiry was based. Demonstrates a detailed understanding of the conclusions reached by their enquiry. Provides a full assessment of the extent to which the conclusions support the theory or idea investigated.
Level 2 (Clear)	3 - 4 marks	Demonstrates clear understanding of the geographical theory or idea on which the enquiry was based. Demonstrates a clear understanding of the conclusions reached by their enquiry. Provides a clear assessment of the extent to which the conclusions support the theory or idea investigated.
Level 1 (Basic)	1 – 2 marks	Demonstrates basic understanding of the geographical theory or idea on which the enquiry was based. Demonstrates limited understanding of the conclusions reached by their enquiry. Provides basic or limited assessment of the extent to which the conclusions support the theory/idea investigated.
	0	No relevant content

Indicative content

Responses will vary and depend upon the nature of the fieldwork enquiry and of the geographical theory or idea being investigated.
Candidates are expected to name and outline the theory or idea they set out to investigate. They could outline why the location and methods used to conduct the enquiry were appropriate to investigating this theory.
The focus of the assessment should be on the extent to which the conclusions of their enquiry were what the theory or idea would have suggested or predicted. The extent will depend on how much of the results or conclusions were as they expected. There should be elements suggesting that some results and conclusions were what might have been expected. These should be included in the assessment.
However, it is unlikely that the theory will be fully supported by the conclusions and it would be valid and creditworthy to use some judgement of why there were anomalies in the conclusions. Mapping out the detail of where the conclusion does not support theory or idea on which the enquiry was based may lead to suggestions of improvements or of further research that needs to be carried out.
If content of a response only considers the location of and the methods used in their enquiry – then max L1 credit.