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General Certificate of Education (A-level)
June 2013

Geography GEOG2

(Specification 2030)

Unit 2: Geographical Skills

Final

Mark Scheme

Mark schemes are prepared by the Principal Examiner 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 examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' 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: aqa.org.uk

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GEOG2 General Guidance for GCE Geography Assistant Examiners

The mark scheme for this unit includes an overall assessment of quality of written communication. There are no discrete marks for the assessment of written communications but where questions are 'Levels' marked, written communication will be assessed as one of the criteria within each level.

Level 1: Language is basic, descriptions and explanations are over simplified and lack clarity.

Level 2: Generally accurate use of language; descriptions and explanations can be easily followed, but are not clearly expressed throughout.

Marking – the philosophy
Marking is positive and not negative.

Mark schemes – layout and style
The mark scheme for each question will have the following format:
a) Notes for answers (nfa) – exemplars of the material that might be offered by candidates
b) Mark scheme containing advice on the awarding of credit and levels indicators.

Point marking and Levels marking
a) Questions with a mark range of 1-4 marks will be point marked.
b) Levels will be used for all questions with a tariff of 5 marks and over.
c) Two levels only for questions with a tariff of 5 to 8 marks.

Levels Marking – General Criteria
Everyone involved in the levels marking process (examiners, teachers, students) should understand the criteria for moving from one level to the next – the 'triggers'. The following general criteria are designed to assist all involved in determining into which band the quality of response should be placed. It is anticipated that candidates' performances under the various elements will be broadly inter-related. Further development of these principles will be discussed during the standardisation process. In broad terms the levels will operate as follows:

Level 1: attempts the question to some extent (basic)
An answer at this level is likely to:

- display a basic understanding of the topic
- make one or two points without support of appropriate exemplification or application of principle
- give a basic list of characteristics, reasons and attitudes
- provide a basic account of a case study, or provide no case study evidence
- give a response to one command of a question where two (or more) commands are stated e.g. "describe and suggest reasons"
- demonstrate a simplistic style of writing perhaps lacking close relation to the terms of the question and unlikely to communicate complexity of subject matter
- lack organisation, relevance and specialist vocabulary
- demonstrate deficiencies in legibility, spelling, grammar and punctuation which detract from the clarity of meaning.

Level 2: answers the question (well/clearly)

An answer at this level is likely to:

- display a clear understanding of the topic
- make one or two points with support of appropriate exemplification and/or application of principle
- give a number of characteristics, reasons, attitudes
- provide clear use of case studies
- give responses to more than one command e.g. “describe and explain..”
- demonstrate a style of writing which matches the requirements of the question and acknowledges the potential complexity of the subject matter
- demonstrate relevance and coherence with appropriate use of specialist vocabulary
- demonstrate legibility of text, and qualities of spelling, grammar and punctuation which do not detract from the clarity of meaning.

CMI+ annotations

- The annotation tool will be available for levels response questions.
- Where an answer is marked using a levels response scheme the examiner should annotate the script with 'L1', 'L2' or 'L3 at the point where that level has been reached. At each point where the answer reaches that level the appropriate levels indicator should be given. In addition examiners may want to indicate strong material by annotating the script as “Good Level…”. Further commentary may also be given at the end of the answer. Where an answer fails to achieve Level 1 zero marks should be given.
- Where answers do not require levels of response marking, the script should not be annotated. For point marked questions where no credit-worthy points are made, zero marks should be given.

Other mechanics of marking

- Various codes may be used such as: ‘rep’ (repeated material), ‘va’ (vague), ‘NAQ’ (not answering question), ‘seen’, etc.
- Unless indicated otherwise, always mark text before marking maps and diagrams. Do not give double credit for the same point in text and diagrams.

1 (a) (i) **AO3 – 3**	1 mark per valid point made with additional credit for development. E.g. the distribution of population is uneven. The majority of the population lives on/near the coast (eastern Brazil) according to the data. The central areas and west appear to be relatively sparsely populated. There are dense clusters in the south east and/or north east. There are inland clusters. Attempted use of data derived from the map can score a developed mark.	*(3 marks)*
1 (a) (ii) **AO2 – 3**	1 mark for strength and 2 marks for weakness. 1 mark per valid point made. Criticisms of the base map are not valid. E.g. **Strengths:** the map gives a good overview of where the population is concentrated/distributed. It is better than other techniques such as a choropleth map which assumes uniform density across defined areas. Actual numbers can be calculated to the nearest 100 000. It is visually clear. **Weaknesses:** Where dots merge it is difficult to identify total numbers. The scale (of 1 dot per 100 000 people) is misleading, suggesting that areas which have no dots have nobody living there. However, decreasing the scale (1: 50 000) would further increase the number of dots, making it more difficult to accurately analyse.	*(3 marks)*

1 (b) (i) **AO3 – 6**	3x1 marks for accurate completion of the table including the calculation of sum of d^2	*(6 marks)*

Brazilian state	Fertility rate (average number of children born to women of child bearing age)	Rank	Infant mortality rate (average number of children out of every 1000 born alive who die under the age of 1 year)	Rank	Difference (d)	d^2
Acre	2.96	1	28.9	2	-1	1
Amazonas	2.38	**4**	24.3	**4**	**0**	**0 (1)**
Espírito Santo	1.88	9	17.7	11	-2	4
Maranhão	2.31	7	36.5	1	6	36
Mato Grosso	2.32	**5.5**	19.2	**7**	**-1.5**	**2.25 (1)**
Minas Gerais	1.67	11	19.1	8	3	9
Pará	2.51	3	23.0	5	-2	4
Paraná	1.84	10	17.3	12	-2	4
Rio de Janeiro	1.63	12	18.3	9	3	9
Rondônia	2.32	5.5	22.4	6	-0.5	0.25
Roraima	2.20	8	18.1	10	-2	4
Tocantins	2.60	2	25.6	3	-1	1

$\sum d^2$ = **74.5 (1)**

$$r_s = 1 - \frac{6\sum d^2}{n3 - n}$$

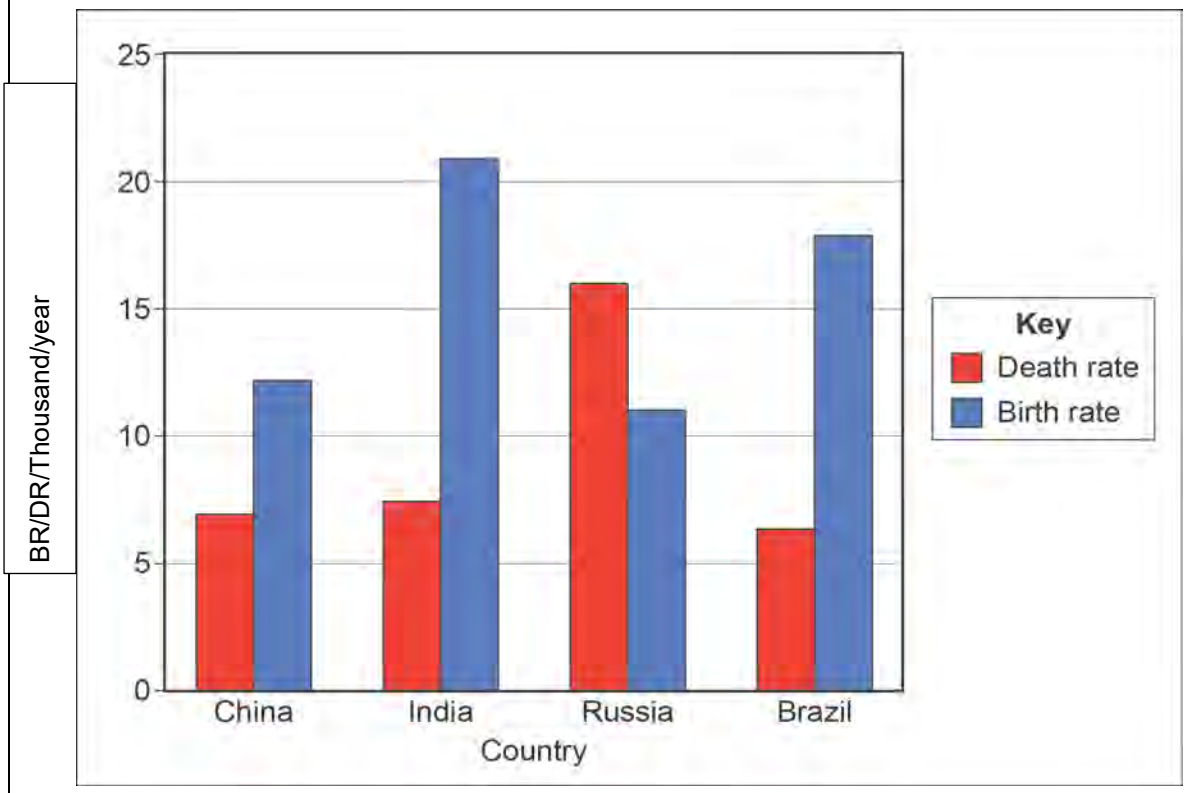
$$r_s = 1 - \frac{447}{1716}$$

r_s = 1- 0.26048951 (1 mark for evidence of working, even where sum of d^2 is incorrect)

r_s = 0.740 (2 marks for accurate final calculation to 3 decimal points, including 0.74)
(1 mark for going beyond 3 dp)

1 (b) (ii) **AO1 – 1** **AO2 – 1**	State: Maranhão (1 mark). Reason: It has the biggest differential in rank between the two data sets. The data for Maranhão does not fit with the general apparent positive correlation (1 mark).	*(2 marks)*
1 (b) (iii) **AO2 – 2**	1 mark per valid point made. Reference to actual r_s figure must be accurate – Allow 0.739. E.g. The r_s calculation exceeds the confidence levels at both the 0.05 and 0.01 level of significance, suggesting a high probability that the result has not occurred by chance. There is a strong positive correlation between the fertility rates and infant mortality rates.	*(2 marks)*

1 (c) (i) **AO3 – 4**	The most likely technique will be a comparative bar chart. Alternative techniques can be credited if the data is presented appropriately e.g scatter graph. Pie charts and line graphs are not appropriate. Accurate and complete data displayed (2 marks) Appropriate scale (1 mark) Both axes labelled correctly (1 mark) Use of key (1 mark) Lose 1 mark per inaccuracy or omission (Max -2 for inaccurate data presented) No data presented – No credit awarded Inappropriate technique e.g line graph –no credit.	*(4 marks)*



1 (c) (ii) **AO1 – 5**	**Notes for answers** This question requires some knowledge and understanding of birth and death rates at national level, the relationship between these and the implications in terms of society, resources and economic ramifications. There are a variety of ways of approaching the response and thus a variety of ways of achieving credit. Answers do not require specific knowledge of any country. Full marks can be achieved with reference to appropriate and sensible social and economic implications. For example: **Brazil: Social implications** Brazil has a relatively high birth rate suggesting low levels of contraception, traditional views around family size and the role of women. The low death rate suggests good health care and/or education around healthy lifestyles. It may also point to a relatively youthful population enjoying improved health care. There may be social pressures to reduce birth rate brought about by changes in government policy. There may be some overlap here with anti natal government policy aimed at reducing the birth rate. **Economic implications** The relatively high birth rate measured against low death rate implies a natural increase in population, which in the long term is not desirable for any country. High dependency ratios may feature in responses. Others may point towards a resource imbalance leading to a decline in living standards. **Russia: Social Implications** Responses should identify an implied natural decrease in population. Birth rates are relatively low and death rates significantly higher. The social implications of this relate to a declining population total. A higher death rate may place additional strain on the health services. Relatives may need to stay at home to look after older/ill relatives. Migration may increase to fill the gap created by the population decline. This may cause hostility and social tension between the indigenous population and the incoming migrants. **Economic implications** Some may point towards current or future labour shortage which could be implied by the small birth rate figure. This could be linked to increased migration to 'fill the gap'. Other may consider the economic implications of a pro-natal population policy with Russia offering incentives through tax breaks to increase the birth rate. Another implication suggested by the data might be cost of health care in a country with a relatively high death rate. **Level 1 (1-3 marks)** Considers only social or economic issues, not both. Implications basic and/or unlikely to apply to given country. At the bottom may misunderstand the question, drifting into description and comparing data, thus answering only implicitly. Little or no use of data. **Level 2 (4-5 marks)** At least one named country**.** Clearly focused upon and covers both social and economic issues. Suggested implications are detailed. May use data to support. **Note** There will be trade-off between breadth and depth, i.e. examination of one country can score full marks.	*(5 marks)*

2 (a) (i) **AO2 – 2** **AO3 – 4**	**Notes for answers** Candidates are expected to refer to the background material which formed the basis of the study. They can refer to any reasonable source including textbooks, internet, newspaper article, local government document etc. The key points are that: • there must be some link to the specification • the issue/concept/theory which shaped the enquiry becomes clear. E.g. I decided to investigate the changing characteristics of the River Exe. The theory I decided to focus on was the Bradshaw Model. This suggests that, in most rivers, similar changes occur downstream from source to mouth. We focused upon three of these theoretical assumptions. The first part of the theory is that river velocity increases downstream, despite the gradient decreasing. It does this because the frictional drag of the bed and banks is reduced as channel efficiency increases… etc. **Level 1 (1-4 marks)** A basic understanding shown. Shows limited awareness of the basis of the investigation, with perhaps vague references to underpinning theories/concepts or issues. Likely to restate theoretical assumptions at a superficial level, lacking specific detail. **Level 2 (5-6 marks)** A clear idea of the basis of the investigation. Detailed understanding of the theory/concept and issue. Specific clarity beyond superficial assertions and linked to the investigation.	*(6 marks)*

2 (a) (ii) **AO3 – 5**	**Notes for answers** Candidates are expected to identify the study area. Responses are likely to be drawn at a range of scales depending upon individual perspective or the nature of the enquiry. It is the quality of the annotations which will determine the level the candidate is awarded, as well as the quality of the sketch map. The sketch and annotations should give a sense that the candidate actually visited the site, understands the basic characteristics and is aware of the significance of the characteristics. The response can still access Level 2 with a poor quality sketch map, provided the annotations are clear, detailed and relevant. **Level 1 (1-3 marks)** A very limited sketch which may offer little more than a road intersection or a line to represent a river. Few annotations. More likely to offer one or two word labels such as 'street corner' or 'in the hills'. Unlikely to include indication of scale and north arrow. **Level 2 (4-5 marks)** Clear sense of location/place. Characteristics are detailed with clear annotations such as '…at this intersection, there were two contrasting housing types; council housing and private housing built in the 1930s or 'The upland section of River X approximately 1km from the source'. At the bottom end, the sketch map may still be basic but may include an indication of scale, north arrow and key.	*(5 marks)*

2 (b) **AO2 – 4** **AO3 – 4**	**Notes for answers** The description of the methodology should be clear, logical and sequential. It should be possible for the reader to re-create the methodology purely based upon the information given, taking into account the obvious time constraints within the examination. E.g. we planned our route using a transect from the CBD to the rural urban fringe. The route was accessible and the methodology able to be conducted within one hour. The transect followed the route of a main road out of the city. Before we left, we planned our stopping points for sampling the temperature. This was at regular intervals of 100 metres. We worked with another group to ensure that data collection took place as close to the same time as possible. For this reason we also used a car. At each site we recorded the temperature using a highly accurate digital thermometer. Three temperatures were recorded at each site allowing statistical analysis later, etc. For an effective evaluation there should be some explicit evaluative comment. This may come at the end or the beginning. Comments such as 'The method was broadly successful at allowing me to gather appropriate data…' would suffice in this regard. Implicit evaluative comment can still access Level 2 but not full marks. Those responses which merely describe or evaluate the method should be held to Level 1. **Level 1 (1-4 marks)** Methodology simplistic and/or vague, lacking sound geographical basis with obvious omissions. Tentative/basic evaluative comment, e.g. basic limitations likely at top end. **Level 2 (5-8 marks)** A basic description can access Level 2 provided the evaluation meets the Level 2 criteria. Clearly aware of strengths and/or limitations of the chosen methodology. Likely to draw upon different aspects of the methodology in supporting evaluative comment. For top Level 2 there must be explicit evaluative comment. Description of the methodology is detailed, full and able to be replicated for full marks. **Note** There is a trade-off between description and evaluation here, i.e. a clear description with limited evaluation can access bottom end Level 2.	*(8 marks)*

2 (c) **AO3 – 6**	**Notes for answers** This is an opportunity to reflect on the further developments which could be made. The question is likely to provide a variety of approaches in candidate responses. In suggesting further areas of enquiry, responses are likely to focus on: • improvements to methods and/or sampling • new study sites in a future study, perhaps involving different time frames • repeating the study • further developing hypotheses and/or research questions in the light of findings • a new line of enquiry arising out of the study, which may point to an entirely new study based on the findings of the original enquiry. E.g. having investigated changing characteristics along the river, a number of questions remain unanswered. We did not conclude that load size became smaller and more rounded for example. Another study is needed in a comparable river to investigate this further. A nearby river with less influence of human activity and management is needed to further investigate changing load size and shape. **Level 1 (1-4 marks)** Largely describes findings. Further areas of enquiry are basic and may not be clearly linked to the actual outcomes of the original study. Further research opportunities not developed. **Level 2 (5-6 marks)** Further areas of enquiry clearly arising out of these stated conclusions are developed and relevant/appropriate to further developing an understanding of area under investigation.	*(6 marks)*