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**GEOGRAPHY**

**0460/13**

Paper 1

**October/November 2017**

MARK SCHEME

Maximum Mark: 75

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**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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This document consists of **16** printed pages.

**Levels of response marking** is used for section (c) of each question.

Thus it is the quality of the response that determines which level an answer is achieved rather than the quantity of statements contained within it. However, once assigned to a level the mark achieved within that level is determined by the number of points made.

Levels 1 and 2 are distinguished by whether statements are simple (level 1) or developed / elaborated (level 2). A candidate can immediately enter L2 by making developed points without making any L1 statements. In order to achieve L3 a candidate must have already reached the top end of L2 – in addition his / her answer should have a clear example and if the answer is place specific as well (7 marks). Highlight place specific detail.

Where statements are assigned levels by the examiner this should be indicated by the use of L1 and L2 next to the statements. Ticks should **not** be used on answers that are marked using levels of response marking. L1 annotation should be removed once a L2 is awarded for an answer. L3 annotation is not used. There is no need for a summary level at the end of a response.

**Summary:**

Level 1 (1 to 3 marks):

- 1 simple statement (1 mark)
- 2 simple statements (2 marks)
- 3 simple statements (3 marks)

Level 2 (4 to 6 marks):

- 1 developed statement (4 marks)
- 2 developed statements (5 marks)
- 3 or more developed statements with e.g. (6 marks)

Level 3 (7 marks)

- 3 or more developed statements + named example with at least one piece of place specific detail.

Question	Answer	Marks
1(a)(i)	2.5 million  Can be indicated in any way. More than one answer indicated = 0	1
1(a)(ii)	<p>Similarities such as:            (Both) have large numbers of old dependents/80+/65+;            (Both) have large numbers of economically active/economically active is biggest/both have more/most economically active;            (Both) have low number of young dependents;            (Both) have more women than men at 80+;            (Both) have a gender balance overall;            The lowest sector is old dependents in both countries;</p> <p>Differences such as:            Canada has more 80+ than Australia/more old dependents;            45–49 is largest age group in Canada but 35–39 in Australia;            Canada has more economically active;            Canada has more young dependents;</p> <p>Note: Assume Australia first if countries not named. <u>Differences must compare.</u> 2 @ 1 mark</p>	2
1(a)(iii)	<p>Ideas such as:            use of/availability/affordability of contraception/family planning;            contraception/family planning – education about it;            modern attitudes to family size/children are expensive/people don't want a lot of children;            people have careers/careers are more important;            education of women;            emancipation of women;            impact of secular society/religion less important;            low infant mortality rates;            government support for old age;            same gender marriages;            later marriages/people opt to have children at a later age;            legalised abortion/abortion available etc.</p> <p>3 @ 1 mark</p>	3
1(a)(iv)	<p>Ideas such as LEDCs are likely to have:            more/higher percentage of young dependents;            less/lower percentage of old dependents/less old people;            less/lower percentage of economically active;            less people/lower percentage at 80+;            lower average age</p> <p>Note: <u>The answer must compare MEDC and LEDC not within the LEDCs.</u> (e.g. there are more young dependents than old dependents = 0 but there are more young dependents in LEDCs than MEDCs =1)            Do not allow references to shape.            Not birth and death rates.            Assume LEDCs first – can do other way around but must specify if they do. Do not credit reference to single age group with exception of 80+ or reasons.</p> <p>4 @ 1 mark</p>	4

Question	Answer	Marks
1(b)(i)	<p><b>Ideas such as:</b>            0–14 = decrease/20 or 21% to 15% or by 6/7%            65 and over = large/rapid increase/12% to 25% or by 13%            80 and over = small/slow/steady increase/1% to 4% or by 3%</p> <p>Note: If neither increase is qualified, award one mark overall for increase idea.3</p>	<b>3</b>
1(b)(ii)	<p><b>Ideas such as:</b>            problems of providing pensions/they need pensions;            increased pressure on hospitals/health services;            need to invest more in health/welfare services;            increased dependency ratio;            lower earnings through taxation/need to increase taxes;            increased need for old peoples' homes;            difficulty of recruitment for armed forces/difficult to defend country;            less innovative workforce;            closure of schools;            strain on economically active;            economic decline/GDP falls/country goes into debt;            difficulty of finding workers/smaller working population/less workers in future;            increase retirement age;            less money to spend on development of other services/infrastructure;            have to increase immigration etc.</p> <p style="text-align: right;">5 @ 1 mark or development</p>	<b>5</b>

Question	Answer	Marks
1(c)	<p><b>Levels marking:</b></p> <p><u>Level 1</u> <span style="float: right;">1–3 marks</span> Statements including limited detail which describe the consequences of over-population.</p> <p><u>Level 2</u> <span style="float: right;">4–6 marks</span> Uses named example. More developed statements which describe the consequences of over-population.</p> <p>(Note: Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> <span style="float: right;">7 marks</span> Uses named example Comprehensive and accurate statements including some place specific reference.</p> <p><u>Content Guide:</u> Answers are likely to refer to: poverty; people do not have enough resources; pressure on energy supplies (or example)/strain on utilities e.g. gas or electricity; lack of work; inadequate food supplies/malnourished/starvation; poor access to education/government spend more on education; poor access to health care/government spend more on healthcare; overcrowded housing/homeless/shanty towns develop; inadequate water supply/sanitation/government spend more on water supply or sanitation; overuse of agricultural land/overgrazing; deforestation/loss of natural vegetation/habitats; increase in specified pollution type (MAX 1) etc.</p> <p><u>Place specific reference is likely to consist of:</u> Named parts of the chosen country, Population data etc.</p> <p>Note: Development is of the consequence. Max 1 × L2 for development of consequences of One Child Policy idea but do not credit strategies to enforce policy.</p>	7

Question	Answer	Marks												
2(a)(i)	Nairobi	1												
2(a)(ii)	Brazil Angola  2 @ 1 mark	2												
2(a)(iii)	Ideas such as: They have high order/specialist services; They sell comparison goods; They have a high density of population; They are well served by/have good communications/roads/rail; Government buildings/administrative buildings are there; Headquarters of large companies are there; Large sphere of influence; Large population; Fewer in number/far apart/more spread out etc.  3 @ 1 mark	3												
2(a)(iv)	Ideas such as: availability of work in urban areas/to get a job/better wages/better pay/can make money easily; more hospitals/better health care/doctors/clinics in urban areas; more access to education in urban areas/more schools; more entertainment/bright lights syndrome; more secure food supply in cities than rural areas/infertile soils/poor harvest; access to water/water is polluted/water not available; access to electricity network; natural hazards e.g. drought/flooding; to join family and friends; to escape persecution; better sanitation/hygiene etc.  (Note: Candidates can refer to rural pushes but no double credit. No need to specify context)  4 @ 1 mark	4												
2(b)(i)	<table border="1"> <thead> <tr> <th></th> <th>Photograph A</th> <th>Photograph B</th> </tr> </thead> <tbody> <tr> <td>Order of Service</td> <td>Low</td> <td>High</td> </tr> <tr> <td>Sphere of Influence</td> <td>Small</td> <td>Large</td> </tr> <tr> <td>Threshold population</td> <td>Small</td> <td>Large</td> </tr> </tbody> </table> <p>Note: <u>Comparison needed for each mark.</u>  3 @ 1 mark</p>		Photograph A	Photograph B	Order of Service	Low	High	Sphere of Influence	Small	Large	Threshold population	Small	Large	3
	Photograph A	Photograph B												
Order of Service	Low	High												
Sphere of Influence	Small	Large												
Threshold population	Small	Large												

Question	Answer	Marks
2(b)(ii)	<p>Ideas such as:  travel a long way for higher order services/order of services  high order services are less available/availability of services  people travel a long way so they have a better choice/a wider variety of services/choice and variety  travel further for a better quality product/quality of product;  travel a long way if shop/service not used often/frequency of use;  travel a long way for specialised service/specialism;  travel a long way for expensive goods/services/expense of goods etc.;</p> <p>Note: Accept answers that refer to high order goods, low order goods or generic ideas. No need to compare. For example, the same idea could be expressed as:</p> <p><i>People will travel a long way for high or goods/services</i>  <i>People will travel less distance for low order goods/services</i>  <i>It depends on whether a good/service is high or low order</i></p> <p style="text-align: right;">5 @ 1 mark or development</p>	<b>5</b>
2(c)	<p>Levels marking</p> <p><u>Level 1</u> <span style="float: right;">1–3 marks</span>  Statements including limited detail which describe the hierarchy of settlement and/or service provision.</p> <p><u>Level 2</u> <span style="float: right;">4–6 marks</span>  Uses named example.  More developed statements which describe the hierarchy of settlement and/or service provision.</p> <p>(Note: Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> <span style="float: right;">7 marks</span>  Uses named example.  Comprehensive and accurate statements, with some place specific reference which describe the hierarchy of settlement and service provision.</p> <p><u>Content Guide:</u>  Low to high order examples  Reference to quantity/spacing of each  More small settlements than large  Greater distance between large settlements than small etc.</p> <p><u>Place specific reference is likely to consist of:</u>  named settlements/areas within country etc.</p> <p>Note: If just one settlement is named then MAX 1 × L2 – 4 marks.</p>	<b>7</b>

Question	Answer	Marks
3(a)(i)	Area drained by a river (and its tributaries)/the catchment of a river/area of land where water flows into the river	<b>1</b>

Question	Answer	Marks
3(a)(ii)	X = watershed Y = confluence	2
3(a)(iii)	Ideas such as: The Rio Puerco drains a much larger area; The Rio Puerco has more tributaries; The Rio Puerco is further downstream; The Rio Puerco is more likely to have a flood plain/flat land by the river etc.;	3
	Note: <u>Needs to compare</u> . Accept vice versa answers.	3 @ 1 mark
3(a)(iv)	Strategies such as: dams/reservoirs; build/strengthen/raise levees or banks; dredging/deepen the channel/remove debris; overflow channels/flood relief channels; afforestation/reduce deforestation; avoid building on flood plains; widen the river; straighten the river; allow river to flood meadow areas; tidal barrier line with concrete etc.	4
		4 @ 1 mark
3(b)(i)	Ideas such as: the valley is V shaped/sides are steep/it is steep; the river has a small discharge; the river is shallow; the river is narrow; the river has stones/boulders/rocks in it	3
		3 @ 1 mark
3(b)(ii)	Ideas such as: long profile/it will become less steep/gradient becomes gentler; long profile/it will become smoother/less irregular; cross section of valley/it will be wider/wider valley/more open valley; flood plain/flat land alongside river as it gets closer to sea/it gets flatter by the river; and levees; valley cross section/valley sides will become more gently sloping etc.;	5
	Note: Do not accept answers relating to the river channel. The focus is on the long profile and valley cross section	5 @ 1 mark or development



Question	Answer	Marks
3(c)	<p>Levels marking</p> <p><u>Level 1</u> <span style="float: right;">1–3 marks</span> Statements including limited detail which describe the main natural features of a delta and/or explain how it is formed.</p> <p><u>Level 2</u> <span style="float: right;">4–6 marks</span> More developed statements which describe the main natural features of a delta and/or explain how it is formed.</p> <p><u>Level 3</u> <span style="float: right;">7 marks</span> Comprehensive and accurate statements which, which describe the main natural features of a delta <b>and</b> explain how it is formed.</p> <p><b>Content Guide:</b> Answers are likely to: shape; location; distributaries; deposition; flocculation; colonisation by vegetation etc.</p> <p>Note: Credit any descriptive detail or explanation on diagram but do not double credit with text. Need explanation <u>and</u> description for L3 but description can be at L1.</p>	<b>7</b>

Question	Answer	Marks
4(a)(i)	265 mm (Accept 261 mm to 269 mm)	<b>1</b>
4(a)(ii)	1 °C (1 mark)  27–26 °C (2nd mark) <span style="float: right;">2 @ 1 mark</span>	<b>2</b>
4(a)(iii)	Ideas such as: Difference between highest and lowest is small; They are located on or close to Equator/at low latitudes; Sun is overhead/at high angle all year/direct exposure to the sun; Typical daily weather is similar throughout the year etc.  <span style="float: right;">3 @ 1 mark</span>	<b>3</b>

Question	Answer	Marks
4(a)(iv)	Ideas such as; heating by sun/high temperatures/direct sunlight; high humidity/it is humid; evaporation/transpiration/evapotranspiration; ascending air/convection; cooling; condensation; cumulus or cumulonimbus clouds form; saturation/air mass cannot hold any more water; repeated each day etc; <div style="text-align: right;">3 @ 1 mark</div>	<b>4</b>
4(b)(i)	Ideas such as: There will be less plants/loss of habitat; So less food/loss of food source for amphibians/reptiles/insects/mammals/ birds; So numbers will reduce/animals will die; Damage to food chains; Less plants to be decomposed/less decomposition; So nutrient supply is reduced; Rainforest will not regrow/vicious circle idea etc. <div style="text-align: right;">3 @ 1 mark</div>	<b>3</b>
4(b)(ii)	<b>Ideas such as:</b> Governments prioritise economic development/to make money/to generate development; Allowing MNCs permission to exploit the rainforest: For logging/export of wood; Wood for furniture/paper making; For mining (or example); Road building; Building dams/generating HEP; Cattle ranching; Growing crops/agriculture; Housing/settlement <div style="text-align: right;">5 @ 1 mark or development</div>	<b>5</b>

Question	Answer	Marks
4(c)	<p>Levels marking</p> <p><u>Level 1</u> 1–3 marks Statements including limited detail which describe and/or explain the characteristics of the desert ecosystem.</p> <p><u>Level 2</u> 4–6 marks Uses named example. More developed statements which describe and/or explain the characteristics of the desert ecosystem.</p> <p>(Note: Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> 7 marks Comprehensive and accurate statements which describe <b>and</b> explain the characteristics of the desert ecosystem including some place specific reference.</p> <p><u>Content Guide:</u> Answers are likely to refer to: Plants Wildlife Adaptations of plants/wildlife Root systems Stems Humps Climate soils etc.</p> <p><u>Place specific reference is likely to consist of:</u> Locational details, Named parts of the desert named types of plants/animals. Accept xerophytes.</p> <p>Note: Allow MAX 2 × L2 for each element – climate; soils, vegetation; wildlife, soil i.e. we are looking for at least two elements of the ecosystem referred to in the answer to move beyond 5 marks. Fine to link simple description and explanation for L2 for this question. MAX 1 × L2 for a statistic which develops a description.</p>	7

Question	Answer	Marks
5(a)(i)	52–53%	1
5(a)(ii)	<ul style="list-style-type: none"> <li>• South Africa/Mexico/China/Brazil/Bolivia</li> <li>• Brazil/China/Mexico</li> </ul> <p style="text-align: right;">2 @ 1 mark</p>	2

Question	Answer	Marks
5(a)(iii)	<p>Ideas such as:            Build dams/reservoirs;            Build wells/pump or obtain water from aquifer/groundwater;            Improve design of wells/concrete lining/covers;            Desalination;            Water treatment/purification of waste/filtration/water purification tablets;            Water transfer from wet to dry areas;            Building of piped water infrastructure/provide more pipes            Import water/provide bottled water;            Rainwater harvesting/collecting rainwater in roof tanks;            Cloud seeding;</p> <p style="text-align: right;">3 @ 1 mark</p>	<b>3</b>
5(a)(iv)	<p>Ideas such as:            Water is essential for survival/prevents dehydration/water is a basic need;            Health of population will be improved/reduce disease or named example of a waterborne disease;            Life expectancy will increase/death rate reduce/IMR reduced/less people die;            Less money will need to be spent treating disease;            People will be able to improve hygiene;            People will be stronger/able to work more/earn money;            Children can go to school;            Reduce time collecting water;            Water can be used for cooking and washing food etc.</p> <p style="text-align: right;">4 @ 1 mark</p>	<b>4</b>
5(b)(i)	<p>Ideas such as:            Egypt uses more for agriculture (85 or 86% v 20%);            Germany uses more for industry (68% v 6% or 7%);            Germany uses more in households (12% v 8% or 9%) or countries use a similar amount of water in households;            Egypt uses most for agriculture where as Germany uses most for industry;            Germany uses least for households and Egypt uses least for industry etc.:</p> <p>Note: Accept 'only' as comparative even if statistic is wrong.</p> <p style="text-align: right;">3 @ 1 mark</p>	<b>3</b>
5(b)(ii)	<p>Ideas such as:            Egypt has a greater percentage of the population relying on agriculture than Germany;            and is more arid/greater need for irrigation;            Germany has more manufacturing/factories than Egypt;            more water will be used for cooling/processes in Germany;            more will be required to generate electricity to use in factories in Germany;            more homes in Germany will have piped water so more water is used domestically;            more of population have home appliances/dishwashers/washing machines;            more people can afford water in Germany in the home etc.</p> <p>Note: Accept reverse ideas. No need to compare.</p> <p style="text-align: right;">5 @ 1 mark or development</p>	<b>5</b>

Question	Answer	Marks
5(c)	<p>Levels marking</p> <p><u>Level 1</u> 1–3 marks Statements including limited detail which explain how its energy is supplied.</p> <p><u>Level 2</u> 4–6 marks Uses named example. More developed statements which explain how its energy is supplied.</p> <p>(Note: Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> 7 marks Uses named example. Comprehensive and accurate statements, including some place specific reference.</p> <p><u>Content Guide:</u> Answers are likely to refer to the different forms of energy supply : Wood/charcoal Fossil fuels Renewable forms of energy Nuclear power</p> <p><u>Place specific reference is likely to consist of:</u> Locational details; Names of places/species within chosen country Statistics</p> <p>Note: Development is of the 'how'. Statistics are OK for development to a MAX 1 × L2 and can also be used for place specific detail.</p>	7

Question	Answer	Marks
6(a)(i)	air	1
6(a)(ii)	Ideas such as; Melting or purifying gold dust; Dipping in acid/using acid; Units have increased in number; Buildings do not have ventilation systems or purifiers/too old for purifiers; Wind carries fumes into houses; 2 @ 1 mark	2
6(a)(iii)	Ideas such as: Difficulty breathing; Asthma/bronchitis/coughs; Skin problems; High blood pressure; Air smells of acid etc. 3 @ 1 mark	3
6(a)(iv)	Ideas such as: Industrial solutions/it may be too expensive to solve the problem/it would need complete redevelopment of the gold industry in Mumbai; Legislation would be too complex; Government are more concerned about development than the people; Government do not want to risk businesses moving out/closing down; corruption is likely/people in authority may be receiving bribes; treating people would be too expensive; it could cause unemployment/the industry makes money/profit/taxes; negative multiplier effect etc. 4 @ 1 mark	4
6(b)(i)	Ideas such as: carbon dioxide (and other greenhouse gases or example) are given off; by burning fossil fuels; in industry/power stations/transport; from pastoral/rice farming; deforestation it builds up in the atmosphere; heat is trapped/cannot escape/acts like a greenhouse etc 3 @ 1 mark	3

Question	Answer	Marks
6(b)(ii)	<p>Ideas such as:</p> <ul style="list-style-type: none"><li>melting of ice caps/glaciers;</li><li>loss of natural habitat;</li><li>rising sea/water levels;</li><li>flooding of low lying islands/countries;</li><li>loss of food sources for wildlife;</li><li>loss of species/extinction/animals die;</li><li>breaking of food chains;</li><li>threats to consumers;</li><li>diversion of cold ocean currents;</li><li>warming of sea water can destroy/bleach coral;</li><li>increasing aridity/drought;</li><li>forest fires;</li><li>vegetation loss/trees die etc.</li></ul> <p>Note: Example of a species is fine for development e.g. polar bear 5 @ 1 mark or development</p>	<b>5</b>

Question	Answer	Marks
6(c)	<p>Levels marking</p> <p><u>Level 1</u> <span style="float: right;">1–3 marks</span> Statements including limited detail which describe how threats to the natural environment from chosen economic activity are being managed.</p> <p><u>Level 2</u> <span style="float: right;">4–6 marks</span> Uses named example. More developed statements which describe how threats to the natural environment from chosen economic activity are being managed.</p> <p>(Note: Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> <span style="float: right;">7 marks</span> Uses named example. Comprehensive and accurate statements, including some place specific reference.</p> <p><u>Content Guide:</u> Answers should refer to appropriate forms of management of the activity chosen, ranging from small scale (e.g. fencing of vulnerable areas of sand dunes to protect them from trampling) to large scale (e.g. creation of National Parks). Answers can relate to any activity such as: Agriculture Tourism Manufacturing industry Generation of energy Tourism Quarrying Fishing etc.</p> <p><u>Place specific reference is likely to consist of:</u> Locational details; Names of places/species within chosen area Specific details of management of area affected</p> <p>Note: Area should be smaller than a country but accept Amazon.</p>	7