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**GEOGRAPHY**

**0460/13**

Paper 1

**October/November 2019**

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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

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**Generic Marking Principles**

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

**GENERIC MARKING PRINCIPLE 1:**

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

**GENERIC MARKING PRINCIPLE 2:**

Marks awarded are always **whole marks** (not half marks, or other fractions).

**GENERIC MARKING PRINCIPLE 3:**

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

**GENERIC MARKING PRINCIPLE 4:**

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

**GENERIC MARKING PRINCIPLE 5:**

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

**GENERIC MARKING PRINCIPLE 6:**

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Question	Answer	Marks
1(a)(i)	Number who die/deaths <u>per 1000</u> (people) <u>per year</u>	1
1(a)(ii)	Both the birth rate and the death rate have declined overall between 1960 and 2018; Natural population growth was lower in 2015 than it was in 2000	2 2 @ 1 mark
1(a)(iii)	20 – 5 (1) = 15 (1) 15 per 1000 (1)	3 3 @ 1 mark
1(a)(iv)	Ideas such as: <u>Less</u> births/reduction in birth rate; Use/access to/can afford contraception; People more educated about using contraception/family planning; People have career/more women will be educated; Children are expensive; Government policy to reduce birth rate; <u>More</u> deaths/increase in death rate; Obesity/heart disease; Drug cartels/murder; Alcohol related deaths; AIDS/HIV; War/civil war.  Note: No reserve on BR/DR  <b>Note:</b> No credit for reference to high death rate ideas such as lack of hospitals/sanitation/unclean water, etc.	4 4 @ 1 mark
1(b)(i)	Ideas such as: More economically active/working/15–64; More elderly/old (dependents)/65+; More young (dependents)/0–14/5–14/numbers in age bands up to 19 become more even, etc.	3 3 @ 1 mark
1(b)(ii)	Ideas such as: Children do not work/make money/economic burden on country/dependency rate increases; People cannot work as are caring for children; More food needed/has to be provided; More schools/childcare needed/expense of schools; More healthcare needed/expense of health care; Tax increases likely/don't pay taxes.  Note: Can be phrased as impacts on parents rather than country.	5 5 @ 1 mark or development

Question	Answer	Marks
1(c)	<p><b>Levels marking</b></p> <p><u>Level 1</u> (1–3 marks) Statements including limited detail which describe a population policy used to influence natural growth rate, e.g. one child policy.</p> <p><u>Level 2</u> (4–6 marks) More developed statements which describe how a population policy is used to influence natural growth rate NOT the impacts.</p> <p><b>Note:</b> Credit different approaches within a policy, so for example, when marking a China One Child Policy answer, ideas will often cover the following: Incentives; Penalties; Exceptions; Enforcement.</p> <p><b>Note:</b> Credit only 1 × L2 mark for each of these four ideas above, although credit should also be given for other ideas such as developing the idea such as increasing the age of marriage, Government providing free contraception which do not fit the four ideas above.</p> <p>Examples of developed statements e.g. one child policy and free education L2 (Incentive); one child policy and use of fines if more than one child L2 (Penalty); one child policy and parents not penalized if they have twins or a child is disabled L2 (Exception); one child policy and Granny police check if couples are conforming to law L2 (Enforcement).</p> <p>Note: If another country is given other ideas in the Content Guide will be relevant e.g. gender equality acts or educating women. The same stem can be used as in the China example.</p> <p>i.e. Have more children/x children per couple and state pays for/subsidises schooling Have more children/x children per couple and subsidised housing provided (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 which can be named parts of the chosen country, Population data, reference to a specific named policy/specific details about it, etc.</p>	7

Question	Answer	Marks
2(a)(i)	A built up area/town/city, etc.	1
2(a)(ii)	Completion of graph.  1 mark for dividing line (at 55/90 – 1% tolerance) 1 mark for correct shading in correct order.  2 @ 1 mark	2
2(a)(iii)	Ideas such as: Greater percentage/more from traffic in India/less from traffic in Japan; Greater percentage/more from industry in Japan/less from industry in India; Greater percentage/more from domestic source/homes in India/less from domestic source in Japan; Greater percentage/more from electricity in Japan/less from electricity in India; Traffic is the largest in India and industry/electricity is the largest in Japan; Industry is the least in India and domestic is the least in Japan.  3 @ 1 mark	3
2(a)(iv)	Ideas such as: Breathing difficulties/chest complaints/heart complaints; And brings specific diseases, e.g. asthma, lung cancer, bronchitis; Eye disease/damages eyes or example; Affects brain/educational performance; Causes smog/haze/affects visibility; Makes paintwork/windows/washing, etc. dirty; Weathers/corrodes stonework on buildings; Pollutes drinking water/water sources; Kills fish <u>which</u> people eat.  4 @ 1 mark	4
2(b)(i)	Ideas such as: Number of vehicles will increase/double; Population will increase; There will be more people working/more journeys to work/more rush hour journeys/traffic; Not enough/lack of investment in/neglected/poor public transport/railways, etc.  3 @ 1 mark	3

Question	Answer	Marks
2(b)(ii)	<p>Ideas such as:</p> <ul style="list-style-type: none"> <li>Build new/upgrade railway lines/stations/systems;</li> <li>Underground railway/metro;</li> <li>More/bigger/double decker trains/buses/more bus routes;</li> <li>Bus only lanes;</li> <li>Reduce costs of public transport;</li> <li>Trams;</li> <li>Monorail;</li> <li>Build new roads/dual carriageways;</li> <li>Build ring roads/by passes;</li> <li>Widen roads;</li> <li>Flyovers;</li> <li>Underground road/tunnel;</li> <li>Tidal flow/barriers to alter flow of cars in lanes;</li> <li>Park and ride;</li> <li>Congestion charging;</li> <li>Car number plate scheme;</li> <li>Car pooling/sharing;</li> <li>Traffic lights/police controlling traffic/roundabouts;</li> <li>Pedestrianise/car free zones/ban diesel cars</li> <li>Cycle lanes/cycle hire.</li> <li>Use bikes/cars/trains etc.^</li> <li>Encourage use of bikes/cars/trains.^</li> </ul> <p style="text-align: right;">5 @ 1 mark or development</p>	<b>5</b>

Question	Answer	Marks
2(c)	<p>Levels marking</p> <p><b>Note:</b> Urban area. Urban fringe/outer edges of city, such as housing on farmland is fine. If clearly rural = 0.  <b>Note:</b> If no clear change identified at all, conflict can be credited to top of L1 only for generic reference to urban areas.</p> <p><u>Level 1</u> (1–3 marks)  Statements including limited detail which describe a change in land use and/or explain why it has caused conflict.</p> <p>E.g. build a supermarket = L1.</p> <p><u>Level 2</u> (4–6 marks)  Uses named example.  More developed statements which describe a change in land use and/or explain why it has caused conflict.</p> <p>Note: Do not link change and conflict for a L2 statement.  Note: Can gain credit for arguing <u>and</u> developing both sides of an argument for more than one L2.  E.g. Knocked down houses and built a supermarket = L2 ( so idea of landuse change)</p> <p>For conflict accept idea of problems  E.g. Created lots of traffic and so people are late for work = L2  E.g. Loss of habitat and so animals die/people protest = L2  E.g. Expensive to build and money could have been spent on local schools.</p> <p>(<b>Note:</b> Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> (7 marks)  Uses named example.  Comprehensive and accurate statements which describe a change in land use <u>and</u> explain why it has caused conflict, with some place specific reference.</p> <p><u>Content Guide:</u>  Content will depend on the change in land use selected and these are likely to be chosen from:  Road/railway/metro building,  Demolition/building of housing,  Building of a new shop, school, clinic, hotel, etc.  New industrial development,  Building a new airport,  Construction of buildings on parkland, etc.</p> <p>The list is not exhaustive and all examples used should be credited if valid changes in land use in an urban area.</p> <p><u>Place specific reference is likely to consist of:</u>  Locational details,  Specific details of the urban area chosen/change in land use, etc.</p>	7

Question	Answer	Marks
3(a)(i)	Graph completion (no need to shade)	1
3(a)(ii)	Ideas such as: (Lack of) shelter; (Shortage of) food.	2  2 @ 1 mark
3(a)(iii)	Ideas such as: People need clean water supply/water to drink/to live/survive/prevent dehydration; Water/sewage pipes/water treatment stations will be cut off/damaged/broken; No running water; People cannot wash/bath/shower; No flush toilets; Sewage will spill out/contaminate (water supplies/area); Disease/germs from dirty/polluted water <u>or</u> people sick from dirty water/waterborne diseases/examples of such as cholera;  <b>Note:</b> No reserve on clean water/sanitation.	3  3 @ 1 mark
3(a)(iv)	Ideas such as: Build deep/stronger/sturdier foundations/base; Reinforce/use concrete/bricks for buildings/walls/roofs; Use metal/steel/aluminium beams; Use diagonal bracing; Flexible building materials; Use dampers/shock absorbers in base of building; Computers controlled weights/counter balances on roof/weight on roof; Automatic window shutters; Shatter proof/strong/reinforced glass; Use fire resistant materials; Build low building/do not build high rise; Use automatic cutoff for gas pipes/electricity cables;	4  4 @ 1 mark
3(b)(i)	Ideas such as: Clustered; Linear/lines; Close to plate boundaries; Around <u>Pacific</u> Ring of Fire; More in northern hemisphere/North of equator; E.g. South East/Southern Asia; Middle East; Southern Europe; Caribbean/Central America; Western South America; Mediterranean;  MAX 1 mark for an appropriate country name.	3  3 @ 1 mark



Question	Answer	Marks
3(b)(ii)	<p>Ideas such as:</p> <p>Some areas have more/bigger/stronger/higher intensity earthquakes;</p> <p>Dependent on <u>proximity to</u> a plate boundary/<u>only</u> found on plate boundaries/less deaths <u>away from</u> plate boundaries/no deaths away from plate boundaries;</p> <p>Whether boundary is destructive/conservative/constructive (impacts numbers)/the type of movement taking place at the plate boundary;</p> <p>Some areas are more densely populated/higher population/more live there/higher density buildings;</p> <p>Some countries can invest in earthquake proofing/earthquake proof buildings or examples of – <b>no</b> development here;</p> <p>Lack of/quality of rescue services;</p> <p>Quality of health care;</p> <p>Earthquake planning/education about what to do in an earthquake/Earthquake Day or other examples;</p> <p>Monitoring/warning/evacuation <u>planning</u>/creating safe areas (to go to in the event of an earthquake ;</p> <p>Some cause tsunamis;</p> <p>Note: Explanation can refer to areas with high death rates or areas where there are few deaths, <u>no need to be comparative if context is clear.</u></p> <p style="text-align: right;">5 @ 1 mark or development</p>	<b>5</b>

Question	Answer	Marks
3(c)	<p>Levels marking</p> <p><u>Level 1</u> (1–3 marks) Statements including limited detail which explain the causes of a volcanic eruption. E.g. converging/destructive = L1 plate boundary = L1 Therefore destructive plate boundary = 2 × L1.</p> <p><u>Level 2</u> (4–6 marks) Uses named example. (<b>Note:</b> Max 5 if no named or inappropriate example) More developed statements which explain the causes of a volcanic eruption. Note: Names of plates is place specific but not L2.</p> <p>Examples Subduction due to heavier plate = L2 Magma rises due to pressure = L2.</p> <p><u>Level 3</u> (7 marks) Comprehensive and accurate statements including place specific information.</p> <p><u>Content Guide:</u> Answers are likely to refer to: Location on plate boundary; Plate movement; Destructive margin or constructive margin processes; Subduction; Pressure; Release of magma; Hot spots; etc.</p> <p><u>Place specific reference is likely to consist of:</u> Locational details; Specific details of the areas affected/date; Plate names; etc.</p>	7

Question	Answer	Marks
4(a)(i)	Meander	1
4(a)(ii)	Ideas such as: It is flat/gently sloping; It is made from fine materials/ small stones/mud/sediment/soil; It is just above the level of the river, etc.  2 @ 1 mark	2
4(a)(iii)	Ideas such as: Water flows quickly; <u>Lateral erosion</u> ; Water erodes bank/wears away side; Hydraulic action/abrasion (or description); Undercutting; Collapse; Helicoidal/helical flow.  3 @ 1 mark	3
4(a)(iv)	Ideas such as: River could become more sinuous/winding/meandering/tighter/more pronounced; Outer bank retreats/moves outwards/goes out further; Slip off slope moves inwards/builds up; Neck of meander narrows/reduces in size/narrow neck will be formed; Cut across/river becomes shorter/straighter; Meander sealed (by deposition); Formation of oxbow lake; etc.  4 @ 1 mark	4
4(b)(i)	Characteristics such as: South/south east facing; Adjacent to/flows into/meets/next to/on the coast of South China Sea/Lingding Bay; Many distributaries/small rivers; Width approximately 70–120 km; Length approximately 100–150 km; Islands in channel; Birds foot type; Etc.  3 @ 1 mark	3

Question	Answer	Marks
4(b)(ii)	<p>Ideas such as:  River carries large amount of load;  River slows/loses strength/can't carry sediment;  Flocculation;  Deposition;  Formation of distributaries/new channels/finds new routes;  Build up of islands/new land;  Colonization by vegetation,  Lack of strong currents, etc.</p> <p style="text-align: right;">5 @ 1 mark or development</p>	<b>5</b>
4(c)	<p>Levels marking  <b>Note:</b> Must be people related.</p> <p><u>Level 1</u> (1–3 marks)  Statements including limited detail which describe the hazards/difficulties of living close to a river.</p> <p><u>Level 2</u> (4–6 marks)  Uses named example.  More developed statements which describe the hazards/difficulties of living close to a river.  (Note: Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> (7 marks)  Comprehensive and accurate statements which describe the hazards/difficulties of living close to a river including some place specific details.</p> <p><u>Content Guide:</u>  Answers are likely to refer to:  River erosion  Marsh land  Mosquitoes  Difficulty of crossing river  Flooding and its issues such as:  Transport problems  Contaminated water  Homes destroyed  Deaths etc.</p> <p><u>Place specific reference is likely to consist of:</u>  Locational details,  Named places alongside river, etc.</p>	<b>7</b>



Question	Answer	Marks									
5(b)(i)	<p>Ideas such as:            More wheat is produced than rice;            Both have increased over the time period/both highest in 2013;            There is more fluctuation/goes up and down/instability in the production of wheat than rice;  <b>Supporting</b> statistics which must refer to ‘million tonnes’ somewhere in answer to illustrate any of the above (<b>MAX 1 Reserved</b>)            Note: For first line this is one year and two statistics or a difference figure, for other lines this is two years and four statistics.</p> <p style="text-align: right;">3 @ 1 mark</p> <p>Statistics: (millions of tonnes)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">1980</td> <td style="width: 15%;">2013</td> <td style="width: 70%;"></td> </tr> <tr> <td>260/263</td> <td>462/465</td> <td>rice</td> </tr> <tr> <td>425/430</td> <td>657/660</td> <td>wheat</td> </tr> </table>	1980	2013		260/263	462/465	rice	425/430	657/660	wheat	<b>3</b>
1980	2013										
260/263	462/465	rice									
425/430	657/660	wheat									
5(b)(ii)	<p>Ideas such as:            Variation in rainfall amounts/drought/flood;            Temperature differences/or example, e.g. late frost may damage crop one year;            Variation in amounts of sunshine;            Variation in seed quality/development of high yielding varieties;            Use of fertilizer/pesticides/insecticides;            Use of irrigation;            Mechanisation or examples of;            Market demand/price;            Grants/quotas/subsidies;            Crop disease/pests;            War;            Change in land use area or example, e.g. fell trees/fill ponds/urban growth/urbanisation;            etc.</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 describe and/or explain the land use of a farm or agricultural area. E.g. rice = L1. Fertile soil = L1.</p> <p><u>Level 2</u> (4–6 marks) Uses named example. More developed statements which describe and/or explain the land use of a farm or agricultural area.</p> <p><b>Note:</b> Don't combine a simple description and explanation to create a developed L2 statement. (<b>Note:</b> Max 5 if no named or inappropriate example)</p> <p><u>Level 3</u> (7 marks) Uses named example. Comprehensive and accurate statements, which describe <u>and</u> explain the land use of a farm or agricultural area including some place specific reference.</p> <p><u>Content Guide:</u></p> <p>Answers can describe any type of agricultural land use and are likely to refer to: Relief; Climate; Soil; Access to market; Capital; Demand/price; Personal preference, etc.</p> <p><u>Place specific reference is likely to consist of:</u> Locational details/named areas close by (e.g. markets) Specific details of farm, e.g. soil type, Statistics, etc.</p>	7

Question	Answer	Marks
6(a)(i)	Oil	1
6(a)(ii)	Major urban area = Atyrau, Bautino River = Volga, Ural  2 @ 1 mark	2
6(a)(iii)	Impacts such as: Damage to wetlands/river delta/or examples such as kills species <u>in</u> wetlands/river deltas/impacts food chains <u>in</u> wetlands/river deltas; <u>Seals/sturgeon/fish</u> killed/numbers decrease/abnormalities; Sturgeon/fish unable to spawn/spawning grounds destroyed ; (Caspian) <u>Seal</u> habitat destroyed.  3 @ 1 mark	3
6(a)(iv)	Ideas such as: There are many activities/things which create pollution <b>or</b> there are many industries/lots of/large oil and gas/oil and gas are very important; Large area to clean/large area has been polluted; Ongoing problem/industries still polluting; They are important to the economy/source of income/earn lots of money/economic asset (and so cannot be stopped); The sea is very large/only small parts can be protected; It is enclosed which prevents pollutants escaping; Rivers will add pollution to the sea/polluted rivers flow into the sea; There is more than one country which borders it/need to make international agreements; Floods/flood risk zone could pollute/continue to pollute; Abandoned wells/workings could still (continue) to pollute/have polluted.  4 @ 1 mark	4
6(b)(i)	Fig. 6B (Power station) <u>gives off/emits/produces</u> carbon dioxide; Fig. 6C (Grazing cattle) <u>gives off/emits/produces</u> methane; Fig. 6D (Deforestation) results in less carbon dioxide being absorbed/removed/converted to oxygen <b>or</b> (vehicles) <u>give off/emit/produces</u> carbon dioxide/carbon monoxide/sulphur dioxide/nitrogen/nitrous oxides.  3 @ 1 mark	3
6(b)(ii)	Ideas such as: Greenhouse gases form a layer/blanket; Sun's rays pass through the atmosphere/enter; Short wave energy comes in; Rays/heat bounce off/radiate from the surface of the earth; Rays/heat trapped/can't escape; Long wave/infrared energy (doesn't leave); Temperatures increase/heat builds up. Greenhouse gases increase/build up^  5 @ 1 mark or development	5



Question	Answer	Marks
6(c)	<p>Levels marking</p> <p><u>Level 1</u> (1–3 marks) Statements including limited detail which describe the threats caused by global warming. E.g. flooding = L1</p> <p><u>Level 2</u> (4–6 marks) More developed statements which describe the threats caused by global warming. E.g. flooding of low lying/coastal land = L2 E.g. ice melts and sea level increases = L2 Note: MAX 5 if no place references, MAX 6 if one place reference</p> <p><u>Level 3</u> (7 marks) Comprehensive and accurate statements which describe the threats caused global warming, including some place references. Must refer to <b>two</b> place references</p> <p>Content Guide: Answers are likely to refer to: Changing rainfall patterns/drought/desertification; Difficulty producing food; Lack of water supplies; Melting of ice caps/glaciers; Impacts on species/biodiversity/food chains; Flooding of coastal lowlands; Spread of tropical diseases to other areas; Loss of habitat; Heat stroke; etc.</p>	7