

**Geography A**

General Certificate of Secondary Education **1986-01**

Paper 1

**Mark Scheme for June 2010**

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| Question |     |      | Expected Answer  | Mark | Rationale/Additional Guidance  |
|----------|-----|------|--|------|--|
| 1        | (a) |      | Study Fig. 1a.   |      |  |
|          |     | (i)  | <p>Use the information on Fig. 1a to complete the following sentences. Choose from the alternatives below each sentence.</p> <p>1 Aleutian<br/>2 Nazca<br/>3 North West</p>  | [3]  | Accept answers which are circled or underlined if not written in spaces.   |
|          |     | (ii) | <p>Japan is shaded black and labelled on the map. Explain why there are many earthquakes in Japan.</p> <ul style="list-style-type: none"> <li>• Japan is where 2/3 plates <b>meet</b>/collide/rub together/near a plate boundary/the edge of a plate</li> <li>• plates converge/<b>move</b> towards each other /convergent/subduction occurs/destructive (margin)</li> <li>• pressure builds up/gets stuck/friction/plates lock together</li> <li>• plates jerk free/pressure released/plates move suddenly</li> </ul> | [3]  | <p>NB</p> <p>The following answers = 0</p> <ul style="list-style-type: none"> <li>-There are lots of plates</li> <li>-Japan gets stuck</li> <li>-plates move apart (divergent) /alongside each other</li> <li>-conservative margin</li> </ul> <p>The following answers need to be qualified:</p> <ul style="list-style-type: none"> <li>-plates move</li> </ul> <p>Convergent boundary/margin = 2<br/>Destructive margin = 2</p> |

| Question |     |     | Expected Answer   | Mark | Rationale/Additional Guidance   |
|----------|-----|-----|---|------|---|
|          | (b) |     | Study Fig. 1b below.  |      |   |
|          |     | (i) | <p><b>Suggest <u>three</u> reasons why many more people died in the earthquake in Indonesia.</b></p> <p>Ideas such as:</p> <ul style="list-style-type: none"> <li>• powerful earthquake/9.0 on Richter Scale/high on Richter Scale</li> <li>• high population density/building density/lots of people live there/urban areas etc</li> <li>• low level of development/LEDC/poor country</li> <li>• occurred during daytime/when people were working/when people were at school</li> <li>• people not prepared/ready for earthquake/didn't know what to do/had not done drills etc</li> <li>• poor building strength/quality/buildings easily collapse/weaker</li> <li>• poor safety precautions/no earthquake kits/no shelters/no first aid kits etc</li> <li>• poor health care/aftercare /hospitals destroyed during earthquake</li> <li>• poor emergency services or examples</li> <li>• lots of high rise buildings</li> <li>• poor/damaged infrastructure or examples e.g. roads collapsed</li> <li>• homeless people/no shelter/survivors exposed to elements</li> <li>• disease from polluted water/decaying bodies etc.</li> </ul> | [3]  | <p>3 x 1</p> <p>In this question comparison is not necessary, though many candidates will compare.<br/>Assume that a non comparative answer relates to Indonesia if not stated, however if candidates write about Japan this can be credited assuming they state that they are writing about Japan.</p> <p>The following answers = 0</p> <p>they have nowhere to go<br/>lack of prediction<br/>any reference to how people died<br/>it was more dangerous</p> <p>The following answers need to be qualified:<br/>9.0<br/>poor education<br/>buildings collapse<br/>disease<br/>night time (only accept this if justified in an appropriate way)</p> |

| Question | Expected Answer  | Mark       | Rationale/Additional Guidance  |
|----------|--|------------|--|
| (ii)     | <p><b>What can be done to protect people from the effects of earthquakes?</b></p> <ul style="list-style-type: none"> <li>• construction of earthquake proof/stronger buildings/houses or details eg rubber/stronger foundations/designed to sway/fire resistant materials (2 max)</li> <li>• avoid building in high risk areas eg on clay/build on solid rock</li> <li>• have less high rise buildings</li> <li>• strengthened roads/bridges or methods of strengthening</li> <li>• improved preparation/earthquake kits/water supplies/1st aid kits</li> <li>• education about what to do in an earthquake (or examples eg hide under a table/stand in a door frame/drills)</li> <li>• plan areas of open space /zoning</li> <li>• better preparation for emergency services</li> <li>• provide aid/or example eg tents, food, medical care etc.</li> </ul> | <b>[2]</b> | <p>The following answers = 0<br/> warnings<br/> detection<br/> prediction<br/> don't build where there are earthquakes<br/> move away from earthquake areas</p> <p>The following answers need to be qualified:<br/> better buildings<br/> improve education<br/> better roads/bridges/houses</p>   |
| (c)      | <p><b>Why do many people live in areas where earthquakes occur?</b></p> <ul style="list-style-type: none"> <li>• jobs/farming</li> <li>• good quality of life/standard of living or example - hospitals/university etc</li> <li>• can't afford to leave/too poor to move</li> <li>• relatives/friends in area/sense of community</li> <li>• always lived there/too upsetting to leave</li> <li>• confidence in earthquake-proof buildings/protection measures</li> <li>• minor risk of earthquake/wont happen to them/in their lifetime/prepared to take risk/earthquakes are infrequent/not happened in their lifetime</li> <li>• population pressure in a country etc</li> </ul>   | <b>[3]</b> | <p>The following answers = 0<br/> they like living there<br/> so they can study earthquakes<br/> they will be able to evacuate/predict<br/> nice scenery<br/> cheap area to live/cheap housing</p> <p>The following answers need to be qualified:<br/> they are poor<br/> fertile soils (needs to relate to job - farming - for credit)<br/> earthquake proof building (need reference to 'confidence' in their safety)<br/> nowhere else to live<br/> tourism (needs to relate to jobs)<br/> religion/tradition<br/> it is their home<br/> they like it there</p> |

| Question | Expected Answer   | Mark | Rationale/Additional Guidance  |
|----------|---|------|--|
| (d)      | <p><b>Name an area you have studied where an earthquake has taken place. Describe the effects of the earthquake on people in the area.</b></p> <p><b>Level 1 (1-2 marks)</b><br/>Simple statements which describe the impacts of an earthquake eg</p> <ul style="list-style-type: none"> <li>• people killed</li> <li>• buildings destroyed</li> <li>• property destroyed</li> <li>• roads destroyed</li> <li>• gas/water pipes burst</li> <li>• electricity cables snapped</li> <li>• fires</li> <li>• injuries</li> <li>• bridges collapse</li> <li>• damage to workplaces</li> <li>• lost business</li> </ul> <p><b>Level 2 (3-4 marks)</b><br/>More specific statements which describe the impacts eg</p> <ul style="list-style-type: none"> <li>• specific number of people killed</li> <li>• people killed by falling buildings</li> <li>• specific number of homes/building destroyed</li> <li>• homes destroyed so people are homeless/trapped</li> <li>• electricity cables/gas pipes snapped causing fires</li> <li>• cost of damage</li> <li>• tourist industry ruined</li> <li>• lost profits</li> <li>• water pipes burst damaging possessions/houses</li> <li>• workplaces damaged so people are unemployed</li> </ul> <p><b>Level 3 (5 marks)</b><br/>Uses named example such as San Francisco<br/>Detailed and accurate place specific statements<br/>eg Many homes were destroyed in the Marina district<br/>Part of the Bay Bridge collapsed which stopped people getting to work</p> | [5]  | <p>Within <b>Level 1</b> one mark to be awarded if one simple statement is made, two marks if two simple statements are made</p> <p>Within <b>Level 2</b> three marks to be awarded if one specific or developed statement is made, four marks if two specific or developed statements are made</p> <p>To achieve <b>Level 3</b> candidates need to have made two specific or developed Level 2 statements along with one piece of place specific detail</p> |

|  |  |  |  |             |  |
|--|--|--|--|-------------|--|
|  |  |  | No named example = Level 2 (3 marks) maximum |             | <p>If an example is not given or is not appropriate, maximum mark is Level 2 (3 marks).</p> <p>NB</p> <p>1. Example would usually be expected to be at a scale which is less than the size of an entire country. However there will be exceptions (eg Haiti).</p> <p>2. Statistics can be used as part of L2 statements, however they should be reasonably accurate.</p> <p>3. Accept effects of a tsunami.</p> <p>4. The following should not be credited even at L1:<br/>destroys crops/farmland<br/>impacts on wildlife/natural environment</p> |
|  |  |  | <b>Total</b>                                 | <b>[19]</b> |  |

| Question |     |       | Expected Answer   | Mark | Rationale/Additional Guidance   |
|----------|-----|-------|---|------|---|
| 2        | (a) |       | Study Map D in the Resource Booklet.  |      |   |
|          |     | (i)   | What do the initials CBD stand for?<br><br>Central Business District  | [1]  | 1 mark<br><b>NB</b> Each word need to be correct for the mark   |
|          |     | (ii)  | Which <u>one</u> of these squares is part of the CBD? Circle your answer.<br>Give <u>one</u> piece of evidence to support your answer.<br><br>E5<br>Shopping centre/High Street<br>Cinema | [2]  | 1 mark for identification of grid square and one for a piece of evidence<br><b>NB</b><br>1. No credit for evidence if E5 is not correctly stated.<br>2. The following answers = 0<br>Clock tower<br>(lots of) shops/businesses<br>parking<br>it is in the centre<br>focus of road junctions |
|          |     | (iii) | Which <u>one</u> of these squares is an industrial area? Circle your answer.<br>Give <u>one</u> piece of evidence to support your answer.<br><br>D3<br>Works                              | [2]  | 1 mark for identification of grid square and one for a piece of evidence<br><b>NB</b><br>1. No credit for evidence if D3 is not correctly stated.<br>2. The following answers = 0<br>Factories<br>Industry<br>Industrial estates<br>main roads  |
|          |     | (iv)  | Using evidence from Map D, describe the street pattern in square A5.<br><br>Linear/gridiron pattern/parallel to each other/in a row/straight etc  | [1]  | 1 mark<br><b>NB</b><br>The following answers = 0<br>interlinked<br>connected to each other<br>planned<br>terraced housing<br>compact  |



| Question |     |      | Expected Answer   | Mark | Rationale/Additional Guidance  |
|----------|-----|------|---|------|--|
|          | (b) |      | Study Photographs E and F along with Map D.   |      |  |
|          |     | (i)  | <p><b>Using evidence from the photographs, describe <u>two</u> differences between the housing shown in Photographs E and F.</b></p> <p>Differences such as</p> <ul style="list-style-type: none"> <li>• E is older</li> <li>• E is terraced, F is apartment style/E is houses, F is flats</li> <li>• E larger</li> <li>• E has chimneys, F does not</li> <li>• E has slate roof, F has tile roof</li> <li>• F has greater variety of houses</li> <li>• Houses in F are further back from road etc.</li> </ul>                                    | [2]  | <p>2 marks</p> <p>NB</p> <p>1. Answers must be comparative or consist of two discrete statements. It must be stated which of photographs E/F is being referred (eg one is..... = 0)</p> <p>2. The following answers = 0</p> <p>terraced - semi-detached</p> <p>council – private</p> <p>Any reference to parking/gardens/housing density</p> <p>satellite dishes</p> <p>reference to colour</p> <p>reference to height</p> <p>2. Do not allow value judgements</p> |
|          |     | (ii) | <p><b>Housing such as that shown in Photograph E is found in areas close to town and city centres, such as that shown in square A9. Suggest <u>two</u> reasons for this.</b></p> <p>Ideas such as</p> <ul style="list-style-type: none"> <li>• close to/easy to get to/quick access to industrial areas/factories/work/ they were built as homes for factory workers</li> <li>• lack of space/so they could fit more houses in</li> <li>• historical development of city/grew outwards</li> <li>• expensive land/cheaper to build etc.</li> </ul> | [2]  | <p>2 marks</p> <p>NB</p> <p>The following answers = 0</p> <p>cheap houses to <b>buy</b></p> <p>any references to transport</p> <p>any references to shops/services/ CBD</p>  |

| Question | Expected Answer  | Mark | Rationale/Additional Guidance   |
|----------|--|------|---|
|          | <p>(iii) <b>Suggest advantages and disadvantages of living in areas close to town and city centres, such as that shown in Photograph F in square C9.</b></p> <p>Advantages such as</p> <ul style="list-style-type: none"> <li>• close to work/employment</li> <li>• close to shops</li> <li>• houses will contain modern amenities/or examples</li> <li>• close to amenities/examples such as cinema/hospital/night clubs (MAX 1)</li> <li>• close to public transport/examples such as bus/railway station (MAX 1)</li> <li>• close to canal/river/trees/grass/scenic idea etc.</li> </ul> <p>Disadvantages such as</p> <ul style="list-style-type: none"> <li>• congested roads/lots of traffic/busy roads</li> <li>• limited space/small houses/no gardens</li> <li>• noise from works/traffic/night clubs (or problems caused by noise eg noise keeps people awake at night etc)</li> <li>• air pollution from traffic/factories (or problems caused by air pollution eg asthma)</li> <li>• no off road parking</li> <li>• higher crime rate/example such as vandalism/burglary etc.</li> <li>• canal could be dangerous for children</li> <li>• few areas for children to play etc</li> </ul> | [4]  | <p>2 + 2 Marks</p> <p>NB</p> <ol style="list-style-type: none"> <li>1. Advantages and disadvantages must be in correct sections.</li> <li>2. The following answers = 0           <ul style="list-style-type: none"> <li>litter</li> <li>good road access</li> <li>overcrowded/crowded</li> <li>overpopulated</li> <li>the canal smells</li> <li>cheap/expensive</li> <li>it is near schools</li> <li>modern/nice/well built houses</li> <li>close to CBD/town centres</li> </ul> </li> <li>3. The following answers need to be qualified:           <ul style="list-style-type: none"> <li>not safe for children</li> <li>the canal is dangerous</li> <li>the canal (barges) are noisy</li> <li>it is busy</li> <li>it is noisy</li> <li>it is polluted</li> <li>not a nice view</li> </ul> </li> </ol> |

| Question |     | Expected Answer  | Mark        | Rationale/Additional Guidance  |
|----------|-----|--|-------------|--|
|          | (c) | <p><b>For a named town or city in an MEDC, describe what is being done to manage traffic.</b></p> <p><b>Level 1 (1-2 marks)</b><br/>Simple statements describing attempts at traffic management.<br/>(eg new roads, wider roads, better public transport, car parks, traffic lights, one way streets, encourage people to walk/use public transport/use bikes, speed bumps, charge people to drive in the centre etc.)</p> <p><b>Level 2 (3-4 marks)</b><br/>More specific statements which describe attempts at traffic management.<br/>(eg ring road built, by pass, pedestrianisation, bus only lanes, park and ride, introduction of trams/more regular services, congestion charge, flyover, underpass, decentralization etc.)</p> <p><b>Level 3 (5 marks)</b><br/>Detailed and accurate place specific statements (no need to be exhaustive).<br/>Uses named example (eg Sheffield).<br/>(eg introduction of Supertram network, integrated with bus and train services, pedestrianisation of streets such as the Moor and Fargate in CBD).</p> <p>No example = Level 2 (3 marks) maximum</p> | [5]         | <p>Within <b>Level 1</b> one mark to be awarded if one simple statement is made, two marks if two simple statements are made</p> <p>Within <b>Level 2</b> three marks to be awarded if one specific or developed statement is made, four marks if two specific or developed statements are made</p> <p>To achieve <b>Level 3</b> candidates need to have made two specific or developed Level 2 statements along with one piece of place specific detail</p> <p>If an example is not given or is not appropriate, maximum mark is Level 2 (3 marks).</p> <p><b>NB</b></p> <p>1. The following should not be credited even at L1:<br/>use buses/trams/bike<br/>people should walk</p> |
|          |     | <b>Total</b>   | <b>[19]</b> |  |

| Question |     |       | Expected Answer  | Mark | Rationale/Additional Guidance  |
|----------|-----|-------|--|------|--|
| 3        | (a) |       | Study Photographs G and H in the Resource Booklet.   |      |  |
|          |     | (i)   | <p><b>Give <u>two</u> differences between the farms shown in the photographs.</b></p> <p>G is subsistence, H is commercial<br/> G work is done manually, H is done by machine<br/> G rice is being grown, H wheat/barley<br/> G the crops are standing in water/using flooded/wet land, H they are not etc</p> | [2]  | <p>2 marks<br/> NB<br/> 1. Answers must be comparative or consist of two discrete statements. Candidates must state which of photographs G/H is being referred to (eg one is..... = 0)<br/> 2. The following answers = 0<br/> LEDC/MEDC<br/> rich/POOR<br/> bigger/smaller fields<br/> greener</p> |
|          |     | (ii)  | <p><b>The farm shown in Photograph H is a commercial, arable farm. What do 'commercial' and 'arable' mean?</b></p> <p>Commercial – to sell/make profit/make money/as a business<br/> Arable – crops</p>  | [2]  | <p>2 marks<br/> NB Do not accept examples of crops grown as a definition of 'arable'</p>   |
|          | (b) |       | Study Fig. 3.  |      |  |
|          |     | (i)   | <p><b>Complete the graph by plotting the information below.</b></p> <p>Graph completion (line required)</p>  | [1]  | 1 mark   |
|          |     | (ii)  | <p><b>Complete the following sentence to describe the relationship shown on Fig. 3.</b></p> <p>Increases/goes up/rises</p>   | [1]  | 1 mark   |
|          |     | (iii) | <p><b>Suggest a reason for this relationship.</b></p> <p>Fewer workers needed with mechanisation/machinery does the job of workers/tractors do the work/machines do the work etc</p>   | [1]  | <p>1 mark<br/> NB<br/> The following answers = 0<br/> farms are larger<br/> farmers are wealthier<br/> machines are more efficient/faster/cheaper</p>  |

| Question | Expected Answer  | Mark | Rationale/Additional Guidance   |
|----------|--|------|---|
| (c)      | <p><b>Study Diagram I in the Resource Booklet.</b><br/> <b>Identify <u>two</u> changes that have taken place on the farm between 1960 and 2010.</b><br/> <b>Suggest <u>one</u> reason for each change.</b></p> <p>Reduction in trees – to create more land/grow more crops<br/> Fewer crops/more specialised – more efficient/greater profit<br/> New/more buildings eg silo – store crops/machinery/animals<br/> larger fields/hedges removed – take up less land/create bigger fields/more land/easier to use machines/easier to plough/harvest<br/> Hedges replaced by fencing – less maintenance needed<br/> Set-aside/wildlife areas – CAP regulations<br/> bigger farmhouse – farmer is making more money<br/> pond removed/stream channelized – to create more land/grow more crops</p> | [4]  | <p>2 + 2</p> <p>1. The following answers = 0<br/> references to irrigation<br/> more fields<br/> factories<br/> makes the farm bigger</p> <p>2. The following answers need to be qualified:<br/> earn more money<br/> less vegetation</p> <p>3. MAXIMUM 1 mark for reasoning to be given for more land/grow more crops idea.</p> <p>4. Reasoning can be credited without giving the mark for the change<br/> eg less vegetation (no mark) to create more land (allow reason).</p> |
| (d)      | <p><b>(i)</b> <b>Many farmers use some of their land and buildings for purposes other than farming.</b><br/> <b>This is called ‘diversification’.</b><br/> <b>Give <u>two</u> examples of diversification on farms.</b></p> <ul style="list-style-type: none"> <li>• Farm shop/or example</li> <li>• Farm tours/or example eg people go round and see the animals</li> <li>• zoo</li> <li>• paintballing</li> <li>• teas</li> <li>• B &amp; B</li> <li>• camp/caravan site</li> <li>• holiday cottage</li> </ul>   | [2]  | <p>2 marks</p> <p>1. The following answers = 0<br/> extend the farmhouse/buildings<br/> rent land to other farmers<br/> sell land for housing/offices<br/> golf courses</p> <p>2. The following answers need to be qualified:<br/> stables<br/> rent out buildings<br/> accommodation</p>   |

|  |  |      |  |     |   |
|--|--|------|--|-----|---|
|  |  |      | <ul style="list-style-type: none"> <li>• forestry</li> <li>• riding school/pony trekking</li> <li>• car boot sales;</li> <li>• pick your own</li> <li>• quad bikes</li> <li>• zorbing</li> <li>• golf driving range etc.</li> </ul>  |     | playing fields<br>sports<br>tourism<br>tourist attraction   |
|  |  | (ii) | <b>Give <u>one</u> reason why a farmer may use some land and buildings in new ways.</b> <ul style="list-style-type: none"> <li>• Government/EU grants/quotas</li> <li>• More profitable/to make money</li> <li>• Farm in area attractive to tourists</li> <li>• More people go on short breaks</li> <li>• Safeguard income if crop yield is low/problems with animals</li> </ul> | [1] | 1 mark<br><br>NB Do not credit how the farmer uses the land |

| Question | Expected Answer   | Mark | Rationale/Additional Guidance  |
|----------|---|------|--|
| (e)      | <p><b>For a named LEDC, give an example of a type of farming you have studied. Describe the farming system.</b></p> <p><b>Level 1 (1-2 marks)</b><br/>Simple statements which describe the farming system eg</p> <ul style="list-style-type: none"> <li>• Plant crops/rice/coffee etc</li> <li>• Weed fields</li> <li>• Harvest/pick crops/rice/coffee etc</li> <li>• Add manure</li> <li>• Crops used to feed family</li> <li>• Everything is done by hand</li> <li>• Graze/feed animals</li> <li>• sell animals</li> <li>• fertile soil</li> <li>• flat land</li> <li>• monsoon climate</li> </ul> <p><b>Level 2 (3-4 marks)</b><br/>More specific statements which describe the farming system eg</p> <ul style="list-style-type: none"> <li>• Crops planted by hand</li> <li>• Weeding also done by hand/to protect growing plants</li> <li>• Harvesting is done by hand/because large, cheap labour force</li> <li>• Rice seedlings planted in nursery fields</li> <li>• Transplanting of rice plants</li> <li>• Second rice crop/crop of beans planted</li> <li>• Surplus sold in local markets</li> <li>• Use of oxen/water buffalo/cattle to plough</li> <li>• fertile soil so crops have high yields</li> <li>• flat land so it is easier to cultivate</li> <li>• There is enough rain for rice to grow</li> </ul> <p><b>Level 3 (5 marks)</b><br/>Uses named example such as rice growing in Ganges valley<br/>Detailed and accurate place specific statements<br/>eg farms are very small (about 1 ha) and divided into many plots</p> | [5]  | <p>Within <b>Level 1</b> one mark to be awarded if one simple statement is made, two marks if two simple statements are made</p> <p>Within <b>Level 2</b> three marks to be awarded if one specific or developed statement is made, four marks if two specific or developed statements are made</p> <p>To achieve <b>Level 3</b> candidates need to have made two specific or developed Level 2 statements along with one piece of place specific detail</p> |

|  |  |   |             |   |
|--|--|---|-------------|---|
|  |  | <ul style="list-style-type: none"> <li>Small farm size and poverty means there is very little machinery used, Monsoon climate so there is enough rain for rice to grow</li> </ul> <p>No named example = Level 2 (3 marks) maximum</p> |             | <p>If an example is not given or is not appropriate, maximum mark is Level 2 (3 marks).</p> <p>NB</p> <p>Likely examples of farming types which are acceptable will be:<br/>         subsistence farming<br/>         plantations<br/>         slash and burn<br/>         shifting cultivation</p> <p>or reference to appropriate named crops eg:<br/>         rice in India/Ganges Valley<br/>         coffee in Brazil etc<br/>         (NB List is not exhaustive)</p> <p>1. The following are not acceptable farming types:<br/>         Arable<br/>         Commercial</p> <p>(award MAX L2 3 marks)</p> <p>2. The following should not be credited even at L1:<br/>         grow food<br/>         grow crops<br/>         keep animals<br/>         (we are looking for inputs/processes/outputs)</p> <p>3. Reference to 'by hand' as development only to be credited once at L2.</p> |
|  |  | <b>Total</b>  | <b>[19]</b> |   |



| Question |     |       | Expected Answer  | Mark | Rationale/Additional Guidance   |
|----------|-----|-------|--|------|---|
| 4        | (a) |       | Study Fig. 4a.   |      |   |
|          |     | (i)   | From Fig. 4a, name the <b>two</b> gases which cause acid rain.<br><br>Sulfur dioxide and nitrous oxide   | [1]  | Both required for mark<br><br>NB<br>Sulphuric/nitric acid = 0   |
|          |     | (ii)  | Put the following sources of acid rain into rank order (from highest to lowest).<br><br>Power stations...road transport.....industry   | [1]  | Correct order required for 1 mark   |
|          |     | (iii) | Explain why gases which form acid rain may come from other countries.<br><br>Blown/by winds/moved in the air masses/clouds are moved   | [1]  | 1 mark<br><br>1. The following answers = 0<br>it is imported<br>because they produce more pollutants<br><br>2. The following answers need to be qualified<br>in the air<br>in the clouds (the movement idea is needed)                |
|          | (b) |       | Study Map J in the Resource Booklet.<br>Describe the location of the area in Europe with the highest risk of acid rain.<br><br>Ideas such as <ul style="list-style-type: none"> <li>• south part of (1 mark) Poland (1 mark)</li> <li>• Czech Republic/Germany/Slovakia</li> <li>• central/Eastern Europe</li> <li>• between Warsaw and Prague/Berlin and Budapest</li> <li>• SE of Berlin</li> <li>• SW of Warsaw</li> <li>• west of Ukraine</li> <li>• north of Hungary</li> </ul> | [2]  | 2 marks<br><br>NB<br>1. The following answers = 0<br>Scandinavia<br>UK<br>close to industrial areas<br><br>2. The following answers need to be qualified<br>inland<br>near Prague/Warsaw etc<br><br>3. The following answer = 2 marks |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  | <ul style="list-style-type: none"><li>• NE of Austria</li><li>• East of Germany</li><li>• South of Sweden</li><li>• 1000 km east of UK</li></ul> |  | <p>on the border of Poland and Slovakia</p> <p>4. Accept correct distance and direction from any named country even if very distant (eg UK).</p> |
|--|--|--|--|--|--|

| Question |     |      | Expected Answer   | Mark | Rationale/Additional Guidance   |
|----------|-----|------|---|------|---|
|          | (c) |      | Study Fig. 4b.  |      |   |
|          |     | (i)  | <b>Describe the effects of acid rain</b><br><br>Ideas such as <ul style="list-style-type: none"> <li>• makes rivers/lakes more acidic/pollutes rivers/lakes</li> <li>• damages/destroys/kills trees</li> <li>• kills fish/aquatic life</li> <li>• deformation/mutation of fish</li> <li>• corrodes/rots/erodes/wears away buildings/statues</li> <li>• damage to crops/lowers yields/less food/fish for humans</li> <li>• can cause breathing problems/asthma/ bronchitis</li> <li>• pollutes their water supply</li> <li>• brain damage/kidney problems/Alzheimers/skin irritation/eye irritation have all been linked to acid rain</li> <li>• leaching of soil minerals etc.</li> </ul> | [4]  | 4 at 1 mark or development<br><br>NB<br>1. The following answers = 0<br>damages buildings/statues etc<br>flooding<br>skin is burnt<br>poisons water/rivers/lakes<br><br>2. The following answers need to be qualified<br>it affects buildings/people/trees/rivers and lakes (see Fig 4b)<br>irritates people<br>harms people<br>makes people ill<br>discolours buildings<br>damages buildings<br>kills animals/wildlife |
|          |     | (ii) | <b>Suggest <u>two</u> ways to reduce the problems caused by acid rain.</b><br><br>Ideas such as <ul style="list-style-type: none"> <li>• install scrubbers/filters in power stations</li> <li>• use low sulfur coal/natural gas</li> <li>• use alternative/renewable energy supplies (or eg - hep/wind power/nuclear etc)</li> <li>• encourage use of/develop public transport systems/cycling/walking</li> <li>• legislation to limit emission of pollutants</li> <li>• liming of lakes</li> <li>• purify/treat drinking water etc.</li> </ul>   | [2]  | 2 x 1 mark<br><br>NB<br>1. The following answers = 0<br>less/no power stations<br>less/no cars<br><br>2. The following answers need to be qualified<br>reduce gases/limit emissions<br>reduce air pollution<br>recycle<br>legislation   |

| Question |     |     | Expected Answer   | Mark       | Rationale/Additional Guidance   |
|----------|-----|-----|---|------------|---|
|          | (d) |     | Another major environmental problem is <u>global warming</u> .  |            |   |
|          |     | (i) | <p><b>Describe how global warming occurs.</b></p> <p>Ideas such as</p> <ul style="list-style-type: none"> <li>• greenhouse gases /carbon dioxide/methane/sulfur dioxide/nitrous oxide released</li> <li>• burning fossil fuels</li> <li>• in power stations/industry/vehicles</li> <li>• or grazing cattle/paddy fields</li> <li>• gases build up in atmosphere/form a layer/form a blanket</li> <li>• sun's rays pass through gases</li> <li>• but are trapped/cannot leave atmosphere/escape into space etc.</li> </ul> | <b>[3]</b> | <p>3 x 1 mark</p> <p>1. The following answers = 0<br/>hole in ozone idea<br/>wasteful use of energy</p> <p>2. The following answers need to be qualified<br/>too many vehicles<br/>too many emissions</p> |

| Question | Expected Answer  | Mark | Rationale/Additional Guidance   |
|----------|--|------|---|
|          | <p>(ii) <b>Describe the likely effects of global warming on <u>named areas</u> you have studied.</b></p> <p><b>Level 1 (1-2 marks)</b><br/>Simple statements which describe the likely impacts of global warming eg</p> <ul style="list-style-type: none"> <li>• loss of species/animals die</li> <li>• flooding of lowland area/sea level rises</li> <li>• temperature gets warmer</li> <li>• different crops can be grown</li> <li>• drought</li> <li>• more extreme weather</li> <li>• more frequent hurricanes</li> <li>• ice melts</li> <li>• more insects</li> <li>• loss of habitat etc.</li> </ul> <p><b>Level 2 (3-4 marks)</b><br/>More specific statements which describe the likely impacts of global warming eg</p> <ul style="list-style-type: none"> <li>• ice melts and therefore loss of species/polar bears from cold environments</li> <li>• falling yields of maize/rice due to drought</li> <li>• more insects causing northward spread of malaria</li> <li>• rise in sea level causes flooding of coastal lowland areas</li> <li>• increased temperatures reduce snowfall in some areas threatening winter sports' industries</li> <li>• crops such as vines can be grown in areas which were not previously hot or sunny enough etc.</li> </ul> <p><b>Level 3 (5 marks)</b><br/>Refers to named examples within answer<br/>Detailed and accurate statements (no need to be exhaustive) which describe the impacts of global warming with at least two examples eg</p> <ul style="list-style-type: none"> <li>• Antarctic ice melts and therefore loss of species such as penguins</li> <li>• rise in sea level causes flooding of coastal lowland areas such as Fens/Bangladesh/Netherlands/Maldives</li> </ul> | [5]  | <p>Within <b>Level 1</b> one mark to be awarded if one simple statement is made, two marks if two simple statements are made</p> <p>Within <b>Level 2</b> three marks to be awarded if one specific or developed statement is made, four marks if two specific or developed statements are made</p> <p>To achieve <b>Level 3</b> candidates need to have made two specific or developed Level 2 statements along with one piece of place specific detail</p> <p>If an example is not given or is not appropriate, maximum mark is Level 2</p> |

|  |  |  |  |
|--|--|--|--|
|  |  | <ul style="list-style-type: none"> <li>increased temperatures reduce snowfall in Alps threatening winter sports' industries</li> <li>crops such as vines can be grown in areas in Southern England which were not previously hot or sunny enough etc.</li> </ul> | <p>(3 marks).</p> <p>With one example = 4 marks<br/>With two examples = 5 marks<br/>(NB No need to look for place specific here)</p> <p>NB</p> <p>Likely examples which are acceptable will be:<br/>Antarctica<br/>the Arctic<br/>Greenland<br/>Iceland<br/>Bangladesh (flooding)<br/>Netherlands (flooding)<br/>Maldives<br/>Australia (drought)<br/>Kenya (drought)<br/>Sahel</p> <p>(some whole countries are unlikely to be acceptable eg UK (flooding)/USA (drought))</p> <p>Do not accept North Pole/South Pole as examples</p> <p>(NB List is not exhaustive)</p> <p>The following should not be credited even at L1:<br/>gets wetter<br/>gets colder<br/>climate changes</p> |
|  |  | <b>Total</b>   | <b>[19]</b>  |

**Assessment of quality of written communication**

The ability of the candidate to communicate in written form should be assessed by forming an overview based across the paper, however those questions which involve extensive writing (eg case studies) are likely to be most useful in your assessment.

- 0** Candidate makes little attempt throughout the paper to communicate in written form.
- 1** Candidate is able to communicate in written form, though the message is not always clear.
- 2** Candidate communicates clearly by writing brief, simplistic statements, using everyday language.
- 3** Candidate generally communicates effectively, using specialist terms in some answers.
- 4** Candidate communicates effectively throughout, and uses specialist terms where appropriate.

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