



**Cambridge Assessment International Education**  
Cambridge International General Certificate of Secondary Education

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**ENVIRONMENTAL MANAGEMENT**

**0680/11**

Paper 1

**October/November 2017**

MARK SCHEME

Maximum Mark: 60

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**Published**

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| Question | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Marks |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1(a)(i)  | <p><i>any three from:</i></p> <p><i>soil provides,</i></p> <p>the minerals / nutrients which the plant needs;</p> <p>named relevant mineral;</p> <p><i>ref to</i> humus content;</p> <p>a suitable pH;</p> <p>it will be adequately drained / not waterlogged;</p> <p>pore space / infiltration;</p> <p>it will be aerated;</p> <p><i>ref to</i> texture;</p>                                                                                                                                                                                                                                                                                 | 3     |
| 1(a)(ii) | <p><i>any three from:</i></p> <p>terracing / correct description <b>and</b> reduces run-off down a slope;</p> <p>contour ploughing / correct description <b>and</b> reduces run-off down a slope / stops soil being washed away;</p> <p>afforestation / tree planting / mixed cropping / improve vegetation cover / crop rotation / do not leave soil bare / do not allow overgraze / <b>and</b> reduces loss of soil due to wind / water / roots bind soil / increase interception;</p> <p>wind break / correct description <b>and</b> reduces loss of soil due to wind;</p> <p>use of organic material <b>which</b> hold soil together;</p> | 3     |

| Question | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Marks |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1(b)     | <p><i>agree</i></p> <p>oil palm trees (still) take in carbon dioxide / acts as a carbon sink;</p> <p>no increase in global warming;</p> <p>transpire water;</p> <p>hold the soil so stop erosion / run-off / maintains interception;</p> <p>AVP;</p> <p><i>disagree</i></p> <p>fewer habitats in palm forest;</p> <p>less biodiversity / tree species in palm forest / food chains disrupted;</p> <p><i>ref to</i> a use of biodiversity;</p> <p>do not provide aesthetically pleasing environment / encourage tourism;</p> <p><i>ref to</i> removal of rain forest might lead to an increase in carbon dioxide levels in the atmosphere / global warming;</p> <p>palm trees are a monoculture and could lead to soil deterioration;</p> <p>AVP;</p> | 4     |

| Question  | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Marks |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 2(a)(i)   | correct plot;                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1     |
| 2(a)(ii)  | China <b>and</b> 5.6;                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1     |
| 2(a)(iii) | Japan <b>and</b> 18 184;                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1     |
| 2(a)(iv)  | <b>C</b> ;                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1     |
| 2(a)(v)   | <p><i>any three from:</i></p> <p>rural vs. urban / <i>ref to</i> degree of isolation;</p> <p><i>ref to</i> population density / size;</p> <p>time of day it occurs;</p> <p><i>ref to</i> quality of response / emergency procedures / education;</p> <p><i>ref to</i> quality of buildings;</p> <p>duration of earthquake;</p> <p>distance from, epicentre / focus / plate boundary;</p> <p>level of poverty;</p> <p>underlying geology;</p> <p>close to the coast / tsunami;</p> | 3     |

| Question | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Marks    |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 2(b)     | <p><i>any three from:</i></p> <p>provision of, shelter / clothes / hygiene facility;</p> <p>evacuation;</p> <p>cut off gas supply;</p> <p>education of people as to what to do;</p> <p>food / water;</p> <p>medical stock piles / medical centres;</p> <p>teams of rescue workers;</p> <p>availability of machinery to lift heavy collapsed buildings;</p> <p>maintaining communication;</p> <p>searches for missing people;</p> <p>policing;</p> <p>international appeals / funds available;</p> | <b>3</b> |

| Question | Answer                                                     | Marks    |
|----------|------------------------------------------------------------|----------|
| 3(a)(i)  | $(750\,000\,000 / 7\,500\,000\,000 \cdot 100) = 10\%$ ;    | <b>1</b> |
| 3(a)(ii) | $7\,100\,000\,000 \cdot 0.52 = 3\,692\,000\,000$ (people); | <b>1</b> |

0680/11

| Question  | Answer                                                                                                                                                                                                                                                                                                                                                    | Marks    |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 3(a)(iii) | <p><i>push</i><br/>any 3 from <b>B, C, F, G</b>;</p> <p><i>pull</i><br/><b>A, D, E</b>;</p>                                                                                                                                                                                                                                                               | <b>2</b> |
| 3(a)(iv)  | <i>ref to</i> education / housing / war / drought / water / electricity / persecution <u>and</u> if a pull or push;                                                                                                                                                                                                                                       | <b>1</b> |
| 3(b)(i)   | <p>paper, glass, (food, garden waste, plastic <i>in any order</i>), metal, other ;;</p> <p><i>6 or 7 correct [2 marks]</i><br/> <i>3, 4 or 5 correct [1 mark]</i><br/> <i>0, 1 or 2 [0 marks]</i></p>                                                                                                                                                     | <b>2</b> |
| 3(b)(ii)  | <p><i>any three from:</i></p> <p>harbours disease / attracts vermin / flies;</p> <p>qualified with relevant disease;</p> <p>fire risk;</p> <p>visual pollution;</p> <p>smells;</p> <p><i>ref to</i> effects on tourism;</p> <p>physical injuries to, humans / domestic animals;</p> <p>water pollution, qualified;</p> <p>blocking drains / flooding;</p> | <b>3</b> |

| Question | Answer                                                                                                                                                                                                                                                                                                                                                                         | Marks    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 4(a)     | <p><i>any two from:</i></p> <p>between the tropics / around equator;</p> <p>one exception listed as either does or doesn't grow coffee;</p> <p>more in southern hemisphere / south of the equator;</p> <p>one named region (central America, south of North America, north of South America, central South America, middle / central Africa, India, south Asia, far east);</p> | <b>2</b> |
| 4(b)(i)  | <p>plants, make food / photosynthesise / have chlorophyll / trap, light / energy in leaves;</p> <p>so less, glucose / food / energy to grow / make beans / seeds;</p>                                                                                                                                                                                                          | <b>2</b> |
| 4(b)(ii) | <p>as climate warms it may get warmer at high altitude / there will be less cold land;</p> <p>so rust can grow higher up;</p>                                                                                                                                                                                                                                                  | <b>2</b> |
| 4(c)     | <p><i>any four from:</i></p> <p><i>use of,</i></p> <p>pesticide / fungicide / herbicide;</p> <p>(pest) resistant plants;</p> <p>mixed cropping for biological control;</p> <p>introduce predator for biological control / described;</p> <p>crop rotation;</p> <p>physical method described / weeding / fencing;</p> <p>grow the crop in a pest-free environment;</p>          | <b>4</b> |

| Question  | Answer                                                                                                                                                                         | Marks    |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 5(a)(i)   | <b>E</b> ;                                                                                                                                                                     | <b>1</b> |
| 5(a)(ii)  | <b>B</b> (evapo)transpiration<br><b>C</b> interception<br><b>D</b> evaporation ;;<br><br><i>3 correct [2 marks]</i><br><i>2 correct [1 mark]</i><br><i>1 correct [0 marks]</i> | <b>2</b> |
| 5(a)(iii) | removal of trees / urbanisation / burning fossil fuels;<br><br>loss of roots / trees to hold / take up water / reduction of interception / infiltration / melting ice cap;     | <b>2</b> |
| 5(b)(i)   | plot at 38;<br>plot at 82;                                                                                                                                                     | <b>2</b> |
| 5(b)(ii)  | Middle East <b>and</b> (N) Africa;<br><br>Middle East <b>and</b> (N) Africa;<br><br>two / 2 / 2.1;                                                                             | <b>3</b> |

| Question | Answer                                                                                                                                                                                                                                                                                          | Marks    |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 6(a)(i)  | <p><i>any three from:</i></p> <p>close / dense;</p> <p>correct comment on the percentage cover;</p> <p>more than one species present;</p> <p><i>ref to</i> lack of, grasses / herbs;</p> <p>all (woody) shrubs / bushes, circular in shape;</p> <p>low / short vegetation;</p> <p>no trees;</p> | <b>3</b> |

0680/11

| Question | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Marks |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 6(a)(ii) | <p><i>any four from:</i></p> <p><i>ref to</i> succession;</p> <p>lichens / mosses / pioneer plants;</p> <p>can colonise, rock / bare surfaces / don't need soil;</p> <p><i>ref to</i> soil created / described / weathering;</p> <p>soil improves due to, death / decay / faeces of organisms;</p> <p>gets more, humus / water / minerals / nutrients;</p> <p><i>ref to</i> seed carried into the area;</p> <p>allowing small plants / named plants to root / grow;</p> <p>tall plants / shrubs / bushes grow;</p> <p><i>ref to</i> competition between named types of plants, e.g. taller / shorter;</p> <p>for water / light / nutrients;</p> | 4     |
| 6(b)     | <p><i>any three from:</i></p> <p>core (area) in which, strict protection / monitoring / no development allowed;</p> <p>buffer (area) in which, local community involvement in management / ecotourism / recreation / education / research;</p> <p>transition (area) in which, sustainable development / agriculture / settlements allowed;</p> <p>an area which protects the environment <b>and</b> benefits local people;</p>                                                                                                                                                                                                                  | 3     |