



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

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**ENVIRONMENTAL MANAGEMENT**

**0680/13**

Paper 1

**May/June 2016**

MARK SCHEME

Maximum Mark: 60

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**Published**

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
1(a)(i)	B A C ;; all 3 correct [2], 1 or 2 correct [1]	<b>2</b>
1(a)(ii)	<i>any 2 of:</i> population low not needed ; too wet ; nature reserve /implied ; not economically useful ; buffer zone idea ;	<b>2</b>
1(a)(iii)	mineral deposit/eq, close to surface OR reference to road ;	<b>1</b>
1(a)(iv)	<i>any 3 of:</i> hole filled in context ; reference overburden ; addition of (top)soil ; fertiliser / nutrients ; reference landscaping / describe ;	<b>3</b>
1(b)	selective felling / logging ; e.g. taking only mature trees / unhealthy trees / branches ;	<b>2</b>

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
2(a)(i)	$(8 \times 200) = \$1600$ million ;	<b>1</b>
2(a)(ii)	$1.9 \text{ million} \times 75 ; = \$142\,500\,000 ;;$	<b>2</b>
2(a)(iii)	other cities (than London ) affected / AVP specific cost to people / environment ;	<b>1</b>
2(a)(iv)	isolated / low population ; precautions taken successful / example ;	<b>2</b>
2(a)(v)	<i>any 2 of:</i> on / near plate boundary ; reference to plates moving apart / divergent. / constructive ; allowing magma / molten rock to come to surface ;	<b>2</b>
2(b)	<i>any 2 of:</i> reference geothermal energy ; detail ; reference HEP ;	<b>2</b>

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Question	Answer	Marks
3(a)	<p>any arrows present correct direction ;            levels correct ;            links from plants or named to ptarmigan ;            links from ptarmigan to fox AND gulls AND skuas ;</p>	4
3(b)(i)	$30/3.5 = 8.57/8.6 \times$ ;	1
3(b)(ii)	<p>any 3 of:</p> <ul style="list-style-type: none"> <li>mercury pollution more likely in sea ;</li> <li>mercury gets amplified as it moves along food chains/webs ;</li> <li>the more steps in the chain/web the more it will get amplified</li> </ul> <p>in Iceland foxes (only one step up from plants/feed on herbivores) ;            in Mednyi foxes (two/or more, steps up from plants/feed on carnivores) ;</p>	3
3(c)	<p>any 2 of:</p> <ul style="list-style-type: none"> <li>poison fish ;</li> <li>clog gills/suffocate ;</li> <li>contaminate bird wings/feathers ;</li> <li>so cannot fly to find food;</li> <li>block light ;</li> <li>reference to food chain effect ;</li> <li>reference specific effect on coral reefs ;</li> </ul>	2

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
4(a)(i)	water holding: very good ; ease of digging: easy, hard ; aeration: very good , poor ;	<b>3</b>
4(a)(ii)	between sandy and clay ;	<b>1</b>
4(b)	<i>any 3 of:</i> they decompose leaves / add to fertility / add minerals ; they aerate soil ; they turn over soil ; reference a role in nitrogen cycle;	<b>3</b>
4(c)	<i>any 3 of:</i> leach into water nearby ; cause algal bloom / eq ; algae die ; rot / eq ; use up oxygen in water ; reference eutrophication ;	<b>3</b>

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
5(a)(i)	the state of the atmosphere (at any particular time( / list of features (> 1) (at a specific time) ;	<b>1</b>
5(a)(ii)	A C D B F E ;;; all 6 correct = [3], 4–5 correct = [2], 2-3 correct = [1], 0–1 = [0]	<b>3</b>
5(a)(iii)	<i>any 3 of:</i> temperature / precipitation varies / described with at least 2 features ; range (max and / or min / difference between max and min ( $-2 \rightarrow 17 \pm 1$ or $19 \pm 1$ ) ; no dry months ; reference when rain high temp lower or vice versa ; one data quote for temp AND one for rain ;	<b>3</b>
5(a)(iv)	cool temperate interior ;	<b>1</b>
5(b)	increases carbon dioxide in atmosphere ; causes global warming (and thus climate change) ;	<b>2</b>

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>
6(a)(i)	$42/3 = 14 / 100 - 3 = 97$ ; $14 \times 97 = 1358$ million km <sup>3</sup> ;	<b>2</b>
6(a)(ii)	<i>any 2 of:</i> around / either side of tropic of Cancer ; mainly north of equator ; reference to one named area (e.g. Central Asia, South Africa, East Oceania) ;	<b>2</b>
6(a)(iii)	<i>any 3 of:</i> lack of investment in water ; specific example (e.g. dams, reservoirs, wells, aquifers) ; insufficient human capacity to satisfy demand ; people poor ;	<b>3</b>
6(b)	polluted with named pollutant (not just polluted) ; reference to carrying disease ; disease named ;	<b>3</b>