Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 **May/June 2016**

MARK SCHEME

Maximum Mark: 60

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 will not enter into discussions about these mark schemes.

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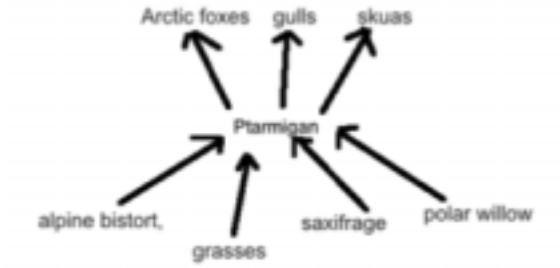
Question	Answer	Marks
1(a)(i)	B A C ;; all 3 correct [2], 1 or 2 correct [1]	**2**
1(a)(ii)	*any 2 of:* population low not needed ; too wet ; nature reserve / implied ; not economically useful ; buffer zone idea ;	**2**
1(a)(iii)	mineral deposit / eq, close to surface OR reference to road ;	**1**
1(a)(iv)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

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

Question	Answer	Marks
3(a)	 any arrows present correct direction ; levels correct ; links from plants or named to ptarmigan ; links from ptarmigan to fox AND gulls AND skuas ;	**4**
3(b)(i)	30 / 3.5 = 8.57 / 8.6 x ;	**1**
3(b)(ii)	*any 3 of:* mercury pollution more likely in sea ; mercury gets amplified as it moves along food chains / webs ; the more steps in the chain / web the more it will get amplified 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) ;	**3**
3(c)	*any 2 of:* poison fish ; clog gills / suffocate ; contaminate bird wings / feathers ; so cannot fly to find food; block light ; reference to food chain effect ; reference specific effect on coral reefs ;	**2**

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

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

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