



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

ENVIRONMENTAL MANAGEMENT

0680/12

Paper 1

May/June 2016

MARK SCHEME

Maximum Mark: 60

Published

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Question	Answer	Marks
1(a)(i)	all links correct with arrow direction correct ;;;;	4
1(b)(i)	respiration ;	1
1(b)(ii)	<i>any 2 of:</i> as more microplastic, less energy stored ; idea that even small amounts make a big change ; effect slows down after 1 g ; data quoted to support (e.g. went down by 1700AU or from 2000 to 300) ;	2
1(c)	<i>any 3 of:</i> adds organic matter / nutrients / causes algae / plants to grow quickly ; which blocks light ; algae / plants die ; rot / decompose ; use up / reduces oxygen ; (lack of oxygen) kills fish / other named aerobes ; reference to eutrophication ; diseases ; cholera / typhoid ; ALLOW reference to plants dying due to lack of light / can't photosynthesise ;	3

Page 3	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
2(a)(i)	C A B ;; all 3 correct [2], 1 or 2 correct [1]	2
2(a)(ii)	timber (implied) ; settlements e.g. houses, roads, schools , parks, hospitals, dams, hotels etc.);	2
2(a)(iii)	<i>any 4 of:</i> soil exposed to elements ; reduced interception ; increases runoff ; which washes soil away ; without roots soil is subject to erosion ; so easier to wash away as not bound by roots ; ref increased wind erosion ;	4
2(b)	<i>any 2 of:</i> locally funded / managed ; (encourages local people to) conserve trees / plant trees / selective removal / education on forest management / stop commercial overuse / have quotas ; as part of livelihood / example ; less intense than big commercial use;	2

Page 4	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
3(a)(i)	167 000 affected , 31+3 killed = 34 ; percentage = $34 / 167\,000 = 0.0002 \times 100\% = 0.02$;	2
3(a)(ii)	<i>any 3 of:</i> food / water ; reference sanitation ; medical supplies / facilities ; rescue teams ; shelter / tents ; education / advice for what to do in aftermath ; evacuation after eruption ;	3
3(a)(iii)	on / near plate boundary / ; reference to plate moving apart / divergent / constructive boundary ; allowing magma / lava / molten rock to come to surface ;	3
3(b)	<i>any 2 of:</i> poisonous gases ; ash ; pyroclastic flow / described ; hot lava description ; volcanic bombs / described ; lahar or described;	2

Page 5	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
4(a)(i)	Argon (Ar) AND carbon dioxide (CO ₂) ;	1
4(a)(ii)	ozone ; ref screen / absorbing / shield / block ; from / UV ;	3
4(a)(iii)	<i>any 3 of :</i> (increases / releases) carbon dioxide ; sulfur dioxide ; NO _x ; CO ; water (vapour) ; (reduces / takes in) oxygen ;	3
4(b)	YES: it is carbon neutral / described ; (thus) renewable / sustainable / does not contribute to global warming (much) ; helps to conserve fossil fuels / alternative to fossil fuels ; uses wastes ; NO: it uses land on which food could be grown ; it leads to (clearance of land) and loss of habitat ; need for food is increasing ; still gives off carbon dioxide ; so still contributes to global warming ;	3

Page 6	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
5(a)(i)	clay 24.2% ; silt 21.2% ; sand 54/55% ;	3
5(a)(ii)	C ;	1
5(a)(iii)	soil animals (eat them) ; (then) bacteria / fungi / microbes / detritivores; break them down / decompose them ;	3
5(b)	<i>any 3 of:</i> pests containing pesticides eaten by predators ; which are eaten by higher level predators ; concentration of pesticide increases ; reference biomagnification / bioamplification / bioaccumulation ; reference killing of beneficial species ; reference food chain / web disturbed ; reference pesticide resistance ; reference leach into water ;	3

Page 7	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
6(a)(i)	$100 - 97 = 3\%$; $0.03 \times 1\,400\,000\,000$; $= 42\,000\,000 / 42$ million ;	3
6(a)(ii)	80 ;	1
6(a)(iii)	salination ; added water brings salt to surface ; evaporation leave salt behind around plants ; kills plants / causes plasmolysis / plants wilt ; waterlogging ; lack of oxygen ; which reduces / stops respiration inhibits (root) growth / germination ; leaching ; washes away minerals ; reduces photosynthesis / other example of problem of lack of mineral ;	3
6(b)	QUALITY: relative level of industrial / intensive farming ; some countries cannot afford to treat water ; ref specific aspects of treatment ; ref poor / good waste water disposal ; QUANTITY: ref low / high rainfall ; ref many / few rivers / lakes ; aquifers ; can buy in ; <i>max 2 for either</i>	3