



ENVIRONMENTAL MANAGEMENT

0680/11

Paper 1

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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.

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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 and reduces run-off down a slope;</p> <p>contour ploughing / correct description and 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 / and reduces loss of soil due to wind / water / roots bind soil / increase interception;</p> <p>wind break / correct description and reduces loss of soil due to wind;</p> <p>use of organic material which 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; no increase in global warming; transpire water; hold the soil so stop erosion / run-off / maintains interception; AVP;</p> <p><i>disagree</i></p> <p>fewer habitats in palm forest; less biodiversity / tree species in palm forest / food chains disrupted; <i>ref to a use of biodiversity;</i> do not provide aesthetically pleasing environment / encourage tourism; <i>ref to removal of rain forest might lead to an increase in carbon dioxide levels in the atmosphere / global warming;</i> palm trees are a monoculture and could lead to soil deterioration; AVP;</p>	4

Question	Answer	Marks
2(a)(i)	correct plot;	1
2(a)(ii)	China and 5.6;	1
2(a)(iii)	Japan and 18 184;	1
2(a)(iv)	C ;	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>	3

Question	Answer	Marks
3(a)(i)	$(750\,000\,000 / 7\,500\,000\,000 \times 100) = 10\%$;	1
3(a)(ii)	$7\,100\,000\,000 \times 0.52 = 3\,692\,000\,000$ (people);	1

Question	Answer	Marks
3(a)(iii)	<p><i>push</i> any 3 from B, C, F, G;</p> <p><i>pull</i> A, D, E;</p>	2
3(a)(iv)	<i>ref to</i> education / housing / war / drought / water / electricity / persecution <u>and</u> if a pull or push;	1
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> <i>3, 4 or 5 correct [1 mark]</i> <i>0, 1 or 2 [0 marks]</i></p>	2
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>	3

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>	2
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>	2
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>	2
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>	4

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

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

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 and benefits local people;</p>	3