



ENVIRONMENTAL MANAGEMENT

0680/23

Paper 2

October/November 2016

MARK SCHEME

Maximum Mark: 80

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.

Cambridge is publishing the mark schemes for the October/November 2016 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0680	23

Question	Answer	Marks
1(a)(i)	an earthquake is a tremor or vibration in the Earth's crust / tectonic plates moving past each other causing shaking of the ground;	1
1(a)(ii)	<i>any 3 of:</i> uneven distribution / not found all over the world; along plate margins; appropriate example to illustrate; narrow belts; around the edge of the Pacific Ocean; middle of Atlantic Ocean; edges of some continents / example;	3
1(a)(iii)	<i>any 4 of:</i> oceanic and continental plates converge / move together / tremors or vibrations through the earth's crust; dragged by convection currents in the mantle; oceanic plate moves below continental; friction; pressure build up; pressure release;	4
1(b)(i)	correct use of scale; countries labelled on x-axis; all bars correctly plotted;;	4
1(b)(ii)	China Indonesia Italy United States of America (Allow USA) 4 correct = 2, 3 correct = 1, 1/2 correct = 0	2
1(b)(iii)	it has a low death toll but a high magnitude compared to the others;	1

Page 3	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
1(b)(iv)	<p><i>any 3 of:</i> land use zoning; appropriate example to reinforce; design of buildings to withstand earthquakes; appropriate example(s) (max 2); design of other structures to withstand earthquakes; appropriate example; earthquake drills; earthquake survival kits / deployment of rescue teams; education (if qualified);</p>	4
1(c)(i)	<p><i>any 3 of:</i> closer to epicentre; epicentre is where earthquake is strongest; therefore more damage is done; Sendai also affected by the tsunami whereas Nagasaki is not; Nagasaki is sheltered by land mass;</p>	3
1(c)(ii)	<p><i>any 5 of:</i> buildings collapsed / washed away; roads / bridges / highways collapse; cars swept away or crushed by collapsed roads; deaths / injuries; people trapped in buildings; buildings buried in debris (washed in by tsunami); power lines cut; people lose homes; loss of farmland; outbreak of disease; ports destroyed / eq; grief / emotional distress; insurance claims; loss of employment and income; money to repair damage;</p>	5

Page 4	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks								
	people have to live in relief shelters; food shortages from destroyed farmland; loss of imports/exports / money from trade / eq;									
1(d)(i)	<table border="1"> <tr> <td>river:</td> <td>Mississippi</td> </tr> <tr> <td>cause of flooding</td> <td>storms / heavy rainfall / snowmelt;</td> </tr> <tr> <td>impact</td> <td>evacuation of houses / land flooded;</td> </tr> <tr> <td>how managed</td> <td>channel opened / land flooded;</td> </tr> </table>	river:	Mississippi	cause of flooding	storms / heavy rainfall / snowmelt;	impact	evacuation of houses / land flooded;	how managed	channel opened / land flooded;	3
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cause of flooding	storms / heavy rainfall / snowmelt;									
impact	evacuation of houses / land flooded;									
how managed	channel opened / land flooded;									
1(d)(ii)	<i>any 4 of:</i> loss of protective canopy; less interception; increased surface run-off; less water taken up by trees; no roots to encourage through-flow; no roots to bind the soil so increased soil erosion; silt raises level of river so increasing flooding risk;	4								
1(e)	<i>any 6 of:</i> forecasting of, storms / rainfall events; early warning and evacuation; settlement patterns e.g. not building on floodplain; buildings on stilts / reinforced buildings; disaster relief; modification of river and river channel e.g. building dams; tree planting; coastal defences / river defences; education / emergency drills;	6								

Page 5	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks
2(a)	<i>any 3 of:</i> poorest continent is Africa / most low GDP countries are in Africa; few countries (with a GDP of under 2000 US Dollars) above / north of the Tropic of Cancer; named example of a specific country; most low GDP countries are between the Tropic of Cancer and Tropic of Capricorn;	3
2(b)(i)	Mali;	1
2(b)(ii)	38 025;	1
2(b)(iii)	6;	1
2(b)(iv)	<i>any 3 of:</i> Higher GDP countries have lower birth rates lower GDP countries have higher birth rates; as GDP increases, birth rates decrease; paired statistics for two countries to compare; anomalies exist which do not fit the pattern; example of an anomaly;	3
2(b)(v)	Japan because lowest birth rate / USA because highest GDP; appropriate reason;	2
2(c)(i)	<i>any 4 of:</i> less food; fewer doctors per person; less, hospitals / medical facilities; fewer vaccinations; unclean / unsafe water; lack of sanitation; overcrowded housing / people living in shanty towns; greater incidence of disease / epidemics; lack of knowledge of how to prevent disease;	4

Page 6	Mark Scheme	Syllabus	Paper
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Question	Answer	Marks												
2(c)(ii)	<p><i>any 3 of:</i> number of persons per room; percentage of houses with access to electricity; persons of houses with running water; overall percentage of literacy; primary school enrolment; average calorie intake; people per doctor; access to safe water; employment levels;</p>	3												
2(d)(i)	<table border="1"> <thead> <tr> <th>country</th> <th>type of Exports</th> <th>example</th> <th>value</th> </tr> </thead> <tbody> <tr> <td>developed</td> <td>manufactured Goods</td> <td>cars</td> <td>high</td> </tr> <tr> <td>developing</td> <td>primary products</td> <td>cocoa</td> <td>low</td> </tr> </tbody> </table>	country	type of Exports	example	value	developed	manufactured Goods	cars	high	developing	primary products	cocoa	low	2
country	type of Exports	example	value											
developed	manufactured Goods	cars	high											
developing	primary products	cocoa	low											
2(d)(ii)	product might run out / price may fall / crops may fail / reduction in demand;	1												
2(d)(iii)	<p><i>any 2 of:</i> guaranteed / minimum, price for farmers; good working conditions; sustainable development/ attention to the environment; long term contracts; social premium / investment in community; specific example; employment for women; removal of trade barriers;</p>	2												
2(e)(i)	correctly placed lines;; correct shading using key;	3												

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2(e)(ii)	<i>any 4 of:</i> improved schools / education / free; better hospitals / more doctors ; more jobs; better paid jobs in factories; bright lights / entertainment opportunities; improved accessibility / communications; modern homes with improved living conditions; better infrastructure / supply of resources e.g. electricity;	4
2(e)(iii)	correctly placed line; correctly shading using the key;	2
2(e)(iv)	<i>any 2 of:</i> lack of electricity; crime; air pollution; noise; poverty; poor quality jobs / underemployment;	2
2(f)	Level of response marked question Indicative content: human lives more important than the environment reliable supply of food for people food security for countries food is currently wasted reduces malnutrition / hunger people will be healthier/have more energy to work irrigation and impact on soils overgrazing and desertification over cultivation and desertification fertilisers and eutrophication pesticides and impact on food chain	6