



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

ENVIRONMENTAL MANAGEMENT

0680/12

Paper 1

March 2017

MARK SCHEME

Maximum Mark: 60

Published

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Question	Answer	Marks
1(a)	5 to 6 correct [3] 3 to 4 correct [2] 1 to 2 correct [1] C A E D F B ;;;	3
1(b)	<i>any four of:</i> two plates are moving towards each other / two plates are converging; heavier plate sinks below lighter plate / oceanic plate sinks below continental plate; into the subduction zone; forms a trench; the oceanic plate is being destroyed / (friction makes) the rocks melt; magma rises / magma is forced, to Earth's surface; causing a volcano / causing a volcanic eruption; friction may cause the plate to get stuck; pressure may build up; oceanic plate moves causing an earthquake; (continent plate is crumpled owtte) to form mountains;	4
1(c)	<i>any three of:</i> 4.9 may not be felt / is a, low / light magnitude; causing, no damage / little damage / minor damage; sensible reference to time of day; (in mountains so) low population / remote area; sensible reference to epicentre; focus deep underground / point of origin deep underground; buildings were earthquake resistant; evacuation / preparedness / planning / education / drills / training;	3

Question	Answer	Marks
2(a)	all plots correct;; all shadings correct;	3
2(b)	<i>any two for <u>one</u> mark:</i> lake / pond, reservoir / dam, river, swamp, wetland, silo, tank, rainwater harvesting;	1
2(c)	<i>any two of:</i> dig borehole / dig well (to access aquifer); by hand / by electric pump; drill well in the right location in an artesian aquifer; pressure will cause water to flow without a pump;	2
2(d)(i)	removing salt from seawater / removing salt from brackish water;	1
2(d)(ii)	<i>any three of:</i> very expensive / more expensive than most other ways of supplying water; energy-intensive / energy needed to heat the seawater / more energy is required than for most other ways of supplying water; requires access to sea / requires access to ocean / requires a coastline; require high levels of technology; environmental impacts with the construction and operation; large volumes of seawater used / affects ecosystems / can kill fish / birds; concentrated brine produced needs safe disposal; have other ways of obtaining water, ORA;	3

Question	Answer	Marks
3(a)(i)	<i>any three of:</i> very cold / -45 °C in winter; ocean covered with ice / ice over a metre thick most of year; long distances from, ports / facilities / land / support; cost of specialised, ship / labour / equipment / supplies; difficult to get permits in National Park;	3
3(a)(ii)	<i>any four of:</i> oil covers organisms feeding areas so they starve; oil blocks gills; oil deprives aquatic organisms of oxygen; oil blocks sunlight preventing photosynthesis; description of impact on food chains or ecosystem; rare wildlife can become endangered or extinct; effect on reproduction; oil is toxic / organisms swallow it and die / oil causes blindness; birds feathers covered with oil cannot fly; oil gets into fur of mammals causing them to, die from hypothermia / sink and drown;	4
3(b)	<i>any three of:</i> take immediate action; setting fire to the oil spill to burn the oil before it spreads; detergent or chemical sprays to break up spill; skimmers or skimmer ships to absorb / to collect, the oil; booms or floating barriers to reduce spreading;	3

Question	Answer	Marks
4(a)	5 to 6 correct [3] 3 to 4 correct [2] 1 to 2 correct [1] cool factories trapped warmer Sun smog ;;	3
4(b)(i)	<i>any three of:</i> breathing problems; coughs / bronchitis / asthma / allergies / skin irritation; lung cancer; brain damage; eye irritation; fatigue / tiredness / lethargy / feel lazy / CO poisoning; vomiting / sickness; headaches; heart attacks;	3
4(b)(ii)	<i>any four of:</i> ban cars from centres of cities / allow odd and even number plate on different days / (encourage) car sharing / introduce congestion charging or tolls or carbon taxes; replace fossil fuels with cleaner fuels or biofuel or CBG; (encourage) use of electric powered vehicles; (improve) public transport or metro systems; encourage cycling or walking; catalytic converters; desulfurisation / scrubbing; laws limiting / controlling, factory emissions; afforestation / green belts / green spaces; AVP, e.g. laws limiting burning waste;	4

Question	Answer	Marks
5(a)(i)	dividing lines at correct values; correct shading;	2
5(a)(ii)	<i>any two of:</i> living plants / leaf litter; living animals / earthworms / insects; microbes / fungi / bacteria; dead organisms / dead plants / dead animals / decomposing organisms / rotting organisms; humus; faeces / manure;	2
5(a)(iii)	<i>any one of:</i> rock; down wash;	1
5(b)(i)	<i>any three of:</i> trees increase rainfall interception; rainfall reaches the ground more slowly; as trunk flow and canopy drip slow the movement of water; stop (heavy) rain hitting or eroding the surface of the soil; reduce run off; organic matter from trees improves soil structure; act as windbreaks providing shelter from (prevailing) wind; roots help to hold the soil together;	3
5(b)(ii)	terracing / contour ploughing / dry land farming / crop rotation / intercropping / mixed cropping / mulch / integrated rural development programmes / community participation / land reform; description;	2

Question	Answer	Marks
6(a)	<i>any three of:</i> on the Equator / near the Equator; mainly, in tropics / between tropics; in South America / Africa / SE Asia; not found in Europe and North America; small amount in, Oceania / NE Australia;	3
6(b)	<i>any two advantages:</i> crops will grow well in the hot, wet climate; <u>crops</u> grow well at first; hand labour / no need for technology; (sustainable) forest will regrow (in 100 years); ash provides fertiliser; <i>any two disadvantages:</i> output is low; heavy rain may wash soil away; plots are small; cannot support a large population; labour intensive / forest has to be cleared; soil loses fertility after a few years; weeds increase; new plot has to be cleared after 5 years;	4

Question	Answer	Marks
6(c)	<i>any three of:</i> sustainable harvesting of the forest; rubber tapping / collecting latex, does not cause damage; collecting fruits, e.g. Brazil nuts; National Parks / wildlife reserves / biosphere reserves; ecotourism; sustainable or selective logging / trees are replanted / quotas; agroforestry / community forestry / reforestation; fuelwood plantations; gene banks; legislation; education; alternatives to deforestation, e.g. more efficient use of timber / recycling / alternatives to timber;	3