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ENVIRONMENTAL MANAGEMENT

0680/13

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MARK SCHEME

Maximum Mark: 60

Published

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Question	Answer	Marks
1(a)(i)	sandstone;	1
1(a)(ii)	sedimentary;	1
1(a)(iii)	correct statement about oil formation / where oil formed / oil in permeable sandstone; oil cannot pass through the impermeable (clay) layers;	2
1(a)(iv)	<i>any three from:</i> build or erect a drilling rig; drill down from ground surface to the sandstone rock; put in, oil well / pipe / tube; pump or force out the oil;	3
1(b)	<i>any three from:</i> pipelines break causing soil / land pollution, effecting land organisms; oil spill in ocean causing marine pollution; oil spill causing coastal pollution; oil transportation causing air pollution; AVP;	3

Question	Answer	Marks
2(a)(i)	wetlands;	1
2(a)(ii)	fossil fuel production;	1
2(a)(iii)	$(27 + 9 =) 36 (\%)$;	1
2(b)(i)	glaciers / ice caps melt; (therefore) rise in sea level / flooding; decrease in rainfall / change in climate; causing, drought / wildfires / effect on crop growing seasons / desertification; AVP e.g. habitat loss;	2

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Question	Answer	Marks
2(b)(ii)	ice caps melting causes flooding; <i>flooding causes,</i> property destroyed or damaged / people have to relocate; loss of <u>food</u> crops / famine; loss of income; loss of life / spread of diseases; AVP;	2
2(b)(iii)	<i>any three from:</i> reduce the use of appliances; turning off appliances when not in use; energy saving appliances e.g. low energy light bulbs; insulation; solar panels; small-scale wind turbine; choose a green energy supplier / use biofuel; reduce use of car by, walking / public transport / cycling; more efficient use of the car, e.g. car sharing / catalytic converter / better fuel consumption / hybrid car / electric car;	3

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Question	Answer	Marks
3(a)(i)	97.2(%);; <i>(if answer incorrect, allow one mark for $(2.1 + 0.1 + 0.6 =) 2.8 [1]$);</i>	2
3(a)(ii)	oceans and ice and snow;	1
3(a)(iii)	<i>any four from:</i> only 2.8 / 3% of water stores are fresh water; 0.6% / groundwater, is difficult to reach; needs wells / boreholes; expensive to construct; 2.1% / snow and ice, is where few people live; snow and ice has to be, moved / melted; 0.1% / rivers and lakes, may be polluted, by sewage / industry, or carry waterborne diseases; 97.2% / largest water store / oceans, contains salt / is not fresh water; desalination is very expensive; many countries are landlocked so don't have access to the (largest) water store;	4
3(b)	<i>any three from:</i> homes / villages / communities, may be destroyed / people may be forced to move; (fertile) land flooded; loss of, jobs / income; loss of, tribal land / heritage sites; destruction of, ecosystems / wildlife / habitats; effects downstream on, water use / fish / sediment; weight (of dam and reservoir) may cause earthquakes; dam may break causing flooding; danger of water-related diseases because water no longer flowing; visual pollution; noise during construction; AVP;	3

Question	Answer	Marks
4(a)(i)	A contour ploughing B terracing D tree planting C wind break ;; 3 or 4 correct [2 marks] 1 or 2 correct [1 mark]	2
4(a)(ii)	(south) west / westerly;	1
4(b)	any four from: roots, bind / anchor / protect / hold, the soil (particles); prevent soil being blown away by wind; (leaves) increase rainfall interception; trunk flow and canopy drip slow the movement of water; rainfall reaches the ground more slowly / stop (heavy) rain, hitting / eroding, the surface of the soil; reducing surface run-off / soil being washed away by rain / increases infiltration; provide, leaf litter / humus, which improves soil structure;	4
4(c)	any three from: recycling, timber / wood products / paper; using alternative materials to wood, e.g. plastic; selective felling; reforestation / replanting; legal limits to, logging / quotas / licenses; agroforestry; more efficient use of wood as a fuel + e.g. stoves; fuelwood plantations; pollarding / coppicing; education qualified; forest reserves; ecotourism; AVP;	3

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Question	Answer	Marks
5(a)(i)	<i>any two for one mark:</i> coal / oil / gas / nuclear / biomass;	1
5(a)(ii)	<i>any two for one mark:</i> wave / wind / hydro-electric / tidal / biomass;	1
5(a)(iii)	<i>any two for one mark:</i> coal / oil / gas;	1
5(b)	<i>any two advantages:</i> doesn't, pollute / contribute to global warming / climate change because no burning of fossil fuels; wind is free because, doesn't have to be bought / doesn't have to be mined; inexhaustible natural resource / not going to run out / renewable; no waste materials produced, no dispose needed; land under turbines can be used for farming; turbines can be located in remote areas or offshore; low maintenance or cheap running costs; can be small (one turbine) or large scale (groups); <i>any two disadvantages:</i> only work when there is wind so require back-up generating capacity; have to be shut down when there is too much wind; may produce power when it is not needed (e.g. night-time), which can't be stored; visual pollution; noise pollution; create few jobs; expensive to manufacture; expensive to install; can kill (migrating) birds, flying into the blades; <i>ref to turbine lifespan (20 to 25 years) / over time, energy produced decreases / maintenance costs increase;</i>	4
5(c)(i)	<i>any one from:</i> very cold climate (they need heat and light); little daylight in winter; electricity prices are low so they can afford to use more; AVP;	1

Question	Answer	Marks
5(c)(ii)	<i>any two from:</i> when magma comes close to the surface at plate boundaries it heats ground water; can be used in geothermal power stations to generate electricity; Iceland has small population;	2

Question	Answer	Marks
6(a)	<i>any three from:</i> between the tropics; near / on, the Equator; except for small area south of Tropic of Capricorn in east South America; north(east) of South America; west Africa qualified; south-east Asia or islands between Asia and Oceania;	3
6(b)	high inputs / named input e.g. workers, capital, labour; high, outputs / yields;	2
6(c)	<i>any two from:</i> income dependant on one crop / nothing to sell if crop destroyed by disease or pests; prices fluctuate with changes in supply and demand; disease or pest can wipe out whole crop / pesticides or insecticides needed to control crop eating pests / chemicals needed to control plant diseases; monoculture uses same nutrients / minerals from soil leading to soil exhaustion or fertilisers needed to supply nutrients used by crop;	2
6(d)	<i>any three from:</i> cocoa (tree) does not grow in N America and Europe; grow, cocoa / cash crop, as there is a demand for it (in the North); N America and Europe are developed countries and can afford to buy it; cocoa producing countries are poor (little demand for cocoa); cocoa exports earn foreign exchange; cannot afford to set up factories to process cocoa / ORA; AVP;	3