



ENVIRONMENTAL MANAGEMENT

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Paper 1

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MARK SCHEME

Maximum Mark: 60

Published

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Question	Answer	Marks
1(a)	<p>4 correct [3] 2 to 3 correct [2] 1 correct [1]</p> <p><i>continental crust</i> B <i>core</i> D <i>mantle</i> A <i>oceanic crust</i> C;;;</p>	3
1(b)	<p><i>any four of:</i> <i>idea of plates move;</i> <i>earthquakes;</i> <i>volcanic eruptions;</i> <i>cause, injury / death / disease;</i> <i>volcanic bombs / lava flows / pyroclastic flow / (fast moving) mudflows / lahars/</i> <i>nuée ardente / hot ash / poisonous gas / correct named gas;</i> <i>homes / shops / business / buildings, destroyed;</i> <i>gas pipe explosions / fires;</i> <i>landslides;</i> <i>tsunamis;</i> <i>damage or disruption, to transport links or communications;</i></p>	4
1(c)	<p><i>any three of:</i> <i>if nearby can be obtained quickly;</i> <i>less expensive to transport;</i> <i>(more likely to) blend in with the environment / less visually polluting;</i> <i>less, air pollution/ correctly named pollution / reduces pollution from fossil fuel burning;</i> <i>creates local jobs;</i></p>	3

Question	Answer	Marks
2(a)(i)	3 correct [2] 1 to 2 correct [1] adit (drift) mine Q open-pit (opencast) mine P shaft mine R;;	2
2(a)(ii)	any four of: R (roofs) can collapse / miners trapped; R more workers so more chance of accidents or human error; R can flood; R gas can (build up) cause, explosions / fires / poisoning; R more dust (confined spaces); R more difficult to deal with accidents;	4
2(a)(iii)	oil / (natural) gas;	1
2(b)	any three of: only a small amount of raw material or uranium needed (to release a large amount of power); long-term source of energy; no emissions of CO ₂ / no / reduced, greenhouse effect / global warming; no emissions of SO ₂ / reduced / no, acid rain; low (operating) costs; produces only relatively small amounts of waste; location (of power station) less dependent on fuel supply;	3

Question	Answer	Marks
3(a)(i)	North America AND Central and South America;	1
3(a)(ii)	Asia AND Africa;	1
3(a)(iii)	Asia AND Africa;	1
3(b)(i)	urbanisation;	1

Question	Answer	Marks
3(b)(ii)	<p><i>any three of:</i> employment / job opportunities; level of pay / wages / poverty / wealth; amenities / electricity / shops / food supplies; education; housing; doctors / hospitals / health services; water supply or quality / sanitation; family / friends / isolation; (forced) eviction / development projects / 'land grabbing'; flood / famine / drought / eruption / earthquake / outbreak of disease; entertainment / leisure; safety / security / crime / war; transport services;</p>	3
3(b)(iii)	<p><i>any three of:</i> destruction of habitats / deforestation; air pollution by (industries or vehicles) burning fossil fuels; increased pollution from, litter / rubbish / sewage / factory effluent; noise pollution (from vehicles or people); visual pollution / slums / urban sprawl / spontaneous or squatter settlements; landfill / disposal of waste / waste tips;</p>	3

Question	Answer	Marks
4(a)	<p><i>any three of:</i> high precipitation: provides supply of water / less chance of lake drying up; low temperatures: little evaporation / little water loss; steep sides / deep valley: (good) storage potential / good potential for HEP; steep sides: assists construction of dam; impermeable rock: <i>idea of</i> water will not seep / drain away; lake: (in valley) provides water; river: (dammed to) provide water;</p>	3
4(b)	<p><i>any four of:</i> contains, toxic / industrial / transport waste or pollutants; heavy metals / mercury / lead / copper / arsenic / cadmium / oil / road salt; contains runoff from, farms / agriculture; pesticides / manure / faeces / urine / nitrates; contains domestic, waste / pollutants or (raw) sewage; named waterborne diseases such as, <i>E.coli</i> / <i>Salmonella</i> / cholera / typhoid / dysentery;</p>	4
4(c)	<p><i>any three of:</i> construct wells / access groundwater / aquifer; use of, pumps / pressure if artesian well; desalination; by, evaporation (thermal desalination) / distillation / reverse osmosis (use of semi-permeable membrane); buy it / pipelines, from neighbouring countries; AVP, e.g. icebergs;</p>	3

Question	Answer	Marks
5(a)(i)	<p><i>any three of:</i> increase from, 1950 / 40 000 tonnes to, 1974 / 920 000 tonnes; slower increase 1950 to 1958; increased rate of production 1958 to 1974;</p> <p>levels off 1974 to 1982; increase, 1982 / 880 000 tonnes to, 1987 / 1 080 000 tonnes; slight increase / increases less consistently / fluctuates, from 1974 to 1987;</p> <p>decrease, 1987/9 / 1 080 000 tonnes to, 2010 / zero; rapid decrease, 1987/9 / 1 080 000 tonnes to, 1996 / 180 000 tonnes; slower decrease, 1996 / 180 000 tonnes to, 2010 / zero tonnes;</p>	3
5(a)(ii)	<p><i>any three of:</i> international, bans / laws / policies / treaties; Montreal protocol; alternatives to CFCs introduced; such as, HCFCs / HFCs; economic downturn; education to use less products with CFCs;</p>	3
5(b)(i)	<p><i>any two of:</i> carbon dioxide, carbon monoxide, methane, nitrous oxide, water vapour, ozone, hydrofluorocarbons / HFCs / HCFCs, perfluorocarbons / PFCs, sulfur hexafluoride / SF₆;</p>	1
5(b)(ii)	<p><i>any three of:</i> short wave radiation / light energy from the sun reaches the Earth's surface; long wave radiation / heat reflected from Earth's surface; long wave radiation / heat is trapped by the greenhouse gases; this warms up the Earth's atmosphere / causes global warming; <i>reference to the amount of greenhouse gases higher than in the past (enhanced greenhouse effect) making the Earth warmer or causing global warming;</i></p>	3

Question	Answer	Marks
6(a)	<p><i>any two of:</i> in north AND south; across all of the N / more in north / 6 countries in N / in south west / 2 countries; where the deserts are;</p>	2
6(b)(i)	<p><i>any four of:</i> weakness / anaemia / lethargy; paralysis; fever; death (20 000–200 000 people p.a.); kidney / bladder, infections; muscle / abdominal pain / diarrhoea / dehydration; cough; rash; (increases the risk of) cancer; infertility; malnutrition; (children) stunted growth; learning difficulties; reduced ability to work; lack of income; economic consequences / poverty;</p>	4
6(b)(ii)	<p><i>any four of:</i> improved, detection and treatment / medication of sick people; vaccination / use of drugs / medication / correct named drug (e.g. praziquantel, oxamniquine, metrifonate); do not, swim / wade wash clothes / bathe in infested water; provide, clean / safe water for, bathing / washing; improve / provide, sanitation; health or hygiene education; wear, boots / leg covering; vector, control / eradication; kill / remove, snails / larvae / worms; destroy, snail habitats / food sources by draining or filling in or line canals (with concrete);</p>	4