



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**ENVIRONMENTAL MANAGEMENT**

**0680/13**

Paper 1

**May/June 2017**

MARK SCHEME

Maximum Mark: 60

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**Published**

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This document consists of **7** printed pages.

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

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 <sub>2</sub> / no / reduced, greenhouse effect / global warming; no emissions of SO <sub>2</sub> / 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>  <b>high precipitation:</b> provides supply of water / less chance of lake drying up;  <b>low temperatures:</b> little evaporation / little water loss;  <b>steep sides / deep valley:</b> (good) storage potential / good potential for HEP;  <b>steep sides:</b> assists construction of dam;  <b>impermeable rock:</b> <i>idea of</i> water will not seep / drain away;  <b>lake:</b> (in valley) provides water;  <b>river:</b> (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 / SF<sub>6</sub>;</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