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**ENVIRONMENTAL MANAGEMENT**

**0680/11**

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><i>continental crust</i>     <b>B</b> <i>core</i>     <b>D</b> <i>mantle</i>     <b>A</b> <i>oceanic crust</i>     <b>C;;;</b></p>	<b>3</b>
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>	<b>4</b>
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>	<b>3</b>

Question	Answer	Marks
2(a)(i)	3 correct [2] 1 to 2 correct [1]  adit (drift) mine <b>Q</b> open-pit (opencast) mine <b>P</b> shaft mine <b>R;;</b>	<b>2</b>
2(a)(ii)	any four of: <b>R</b> (roofs) can collapse / miners trapped; <b>R</b> more workers so more chance of accidents or human error; <b>R</b> can flood; <b>R</b> gas can (build up) cause, explosions / fires / poisoning; <b>R</b> more dust (confined spaces); <b>R</b> more difficult to deal with accidents;	<b>4</b>
2(a)(iii)	oil / (natural) gas;	<b>1</b>
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;	<b>3</b>

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

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>	<b>3</b>
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>	<b>3</b>

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>	<b>3</b>
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>	<b>3</b>
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>	<b>1</b>
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>	<b>3</b>

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