

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the March 2016 series**

### **0680 ENVIRONMENTAL MANAGEMENT**

**0680/42**

Paper 4 (Alternative to Coursework), maximum raw mark 60

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
1(a)(i)	<i>any 2 of:</i> more trade; with other countries; more tourists; promote international image; more jobs; tax revenues; AVP;	<b>2</b>	
1(a)(ii)	<i>any 2 of:</i> to keep economy going when oil prices are low/the oil runs out; to help development in UAE; reduce imports; allow exports; increase GDP / profits can be invested;	<b>2</b>	
1(b)(i)	$9.5 - 8.4 = 1.1 / 9.5 \times 100 = 11.6 / 11.58 (\%);;$	<b>2</b>	
1(b)(ii)	<i>any 2 of:</i> reduce street lighting; encourage use of low energy bulbs / energy efficient appliances in houses; use solar power; nuclear power; wind power; more public transport; less use of cars e.g. walking / car sharing; low carbon building materials; increase cost of electricity (to reduce wastage); AVP; e.g. use less fossil fuels	<b>2</b>	
1(c)(i)	240, 200 correctly plotted;	<b>1</b>	

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
1(c)(ii)	<i>any 2 of:</i> electricity consumption increases with temperature; electricity consumption increases one month after temperature increases; and then both drop / eq; use of figures;	<b>2</b>	
1(c)(iii)	<i>any 2 of:</i> ref to weather / temperature / seasonal change; temperature peaks in August, electricity peaks in September; so increased use of refrigeration; air con / fans;	<b>2</b>	
1(d)(i)	<i>any 3 of:</i> amount of water in dam; amount of groundwater; amount of water produced from power station; energy source used to pump water / drill bore hole; AVP;	<b>3</b>	
1(d)(ii)	<i>any 2 of:</i> preventing flash floods; allows irrigation; drinking water supply; HEP / eq; recreation / tourism;	<b>2</b>	
1(d)(iii)	<i>any 2 of:</i> water table shaded in appropriate position so that trees can only grow as shown in the diagram; key completed;	<b>2</b>	

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
1(e)(i)	<i>any 2 of:</i> farmers have low costs; can produce more crops every year; more profit; wider range of crops; can grow crops that need more water; AVP;	<b>3</b>	
1(e)(ii)	<i>any 2 of:</i> government reduces food imports / exports increase; improves food availability / prevents malnutrition; maintains employment; prevents migration to cities; traditional way of life; AVP;	<b>3</b>	
1(e)(iii)	<i>any 4 of:</i> overuse could make soil toxic to some plants; risk of eutrophication; further details;; increased soil erosion; further details;;	<b>4</b>	

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
2(a)(i)	producer; consumer;	<b>2</b>	
2(a)(ii)	April–September;	<b>1</b>	
2(a)(iii)	August; highest temperature / 30 °C means more energy to turn water into vapour / eq;	<b>2</b>	
2(a)(iv)	<i>any 2 of:</i>  increase awareness of species / educate people; encourages laws to protect species; helps conservation efforts; raise more money; set up nature reserves; AVP;	<b>2</b>	
2(b)(i)	5.9; 113;	<b>2</b>	
2(b)(ii)	the only factor that changes / has large range / eq is salinity:	<b>1</b>	
2(c)(i)	more fish; longer / bigger fish; more representative sample / eq;	<b>2</b>	
2(c)(ii)	place fish on a measuring board / gridded background / (mm) scale / with a ruler / eq;	<b>1</b>	
2(d)(i)	both axes labels completed;; plots;;	<b>4</b>	
2(d)(ii)	55 (mm);	<b>1</b>	
2(d)(iii)	circle around 52;	<b>1</b>	
2(d)(iv)	fish length drops as salinity increases; then little or no change (between 107 / 130–144 / eq);	<b>2</b>	

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<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Guidance</b>
2(d)(v)	yes – the graph shows fish grow less in pools with high(er) salinity/ ORA; data quoted to support argument;	<b>2</b>	
2(d)(iv)	<i>any 2 of:</i>  repeat the experiment ( in the same river); in more pools; at another time / season / following year; repeat in other rivers; laboratory experiment in fish tanks; keep all other variables the same / controlled experiment;	<b>2</b>	
2(e)	<i>any 5 of:</i>  <i>protecting wildlife</i> laws to prevent catching / killing animals; or picking plants; park rangers / patrols to enforce laws; prevent / limit / control development in NP; so preventing habitat destruction; AVP;  <i>encourage tourism</i> UAE has wildlife people want to see; (eco)tourists money helps to conserve wildlife; National Park maintained due to tourism; guides educate tourists / prevent tourists damaging environment; locals support tourism and NP as they gain income; AVP;	<b>5</b>	