

## **MARK SCHEME for the May/June 2008 question paper**

### **0680 ENVIRONMENTAL MANAGEMENT**

**0680/01**

Paper 1, maximum raw mark 60

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

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- 1 (a) (i) the Mary [1]
- (ii) 300, no need for units, ignore if given and wrong [1]
- (iii) Tia; highest flow/area figure [2]
- (b) (i) loss of their home/move home/farm etc; loss of wildlife habitat/species; expense; does not solve problem; environmental damage/destruction/habitat loss; disturbance/noise, etc. during construction; AVP  
R unqualified flooding [3]
- (ii) salts removed from sea water; using heating process/needs much energy; therefore (energy) rich country; coastal/AW; [3]
- 2 (a) (i) 16 [1]
- (ii) the pore spaces fill up with water; so no/little air/oxygen for plants [2]
- (b) (i) water dissolves salt crystals; which makes brine, comes to surface  
A alternatives to dissolves and salt; water evaporates, leaves salt [2]
- (ii) allows penetration of more water; dissolves salts; water table rises, increased evaporation [2]
- (iii) water directed at roots; more efficient use; less water laying around (e.g. less run-off, etc.); thus less evaporated; [3]
- 3 (a) (i) replaced owtte; quickly owtte; by natural processes; not going to run out  
R used again and again [2]
- (ii) carbon dioxide; NO<sub>x</sub>; SO<sub>2</sub>; CO [2]
- (iii) SO<sub>2</sub>  
acid rain; tree death; loss of soil minerals; fish death; poison lakes; bronchitis/lung cancer; breathing problems; buildings damage  
NO<sub>x</sub>  
acid rain; as above  
CO<sub>2</sub>  
global warming; floods; sea level rise; extreme weather; and consequent human effects  
CO  
binds with haemoglobin; reduces oxygen carriage, no third mark  
max of two for each of People and Environment  
*NOTE: watch they do not switch chemicals between human effects and those on environment, must be SAME* [3]
- (b) fuel taxes/tolls etc (G); use bikes/walk (P); car share (P); use public transport (P); provide/subsidise public transport (G); use of catalytic converters (G or P); ref hybrid cars [3]

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- 4 (a) (i) animals/plants; and physical environment (with which they interact) [2]  
 biotic; abiotic  
 change in vegetation; over time; by change of conditions for living [2]
- (ii) DCBA from top half each [2]
- (b) farming;; building;; roads;; logging/AW expansion of each x 2  
 expansion most likely reasons for increase in roads, buildings, etc. but population increase once only in this context [4]
- 5 (a) (i) 1955: 1100 – 1200 [2]  
 2000: 4700 – 4800
- (ii) fertiliser; pesticides; herbicides; machinery; irrigation; feature of HYV (e.g. disease resistant, drought resistant ONCE) [3]
- (iii) 1966-68 [1]
- (b) pesticides:  
 build up along food chains; chains/bioamplification/magnification; kill predators; danger to humans (for one unless something specific and correct quoted);AVP  
 herbicides:  
 similar arguments to pesticides  
 fertilisers:  
 leached; enrich water; kill fish; deplete O<sub>2</sub>;  
 any 2 x 2 [4]
- 6 (a) a rock/fossil fuel; (dead) vegetation/trees/etc; compressed by sediments/over long time [3]
- (b) (i) 2,700,000,000 tonnes (no margin) [1]  
 (ii) 1,575,000,000 tonnes (for 2) (one for 2,700,000,000 –1,125,000,000) [2]  
 (iii) increased population in US/more electricity used, with reason/better methods of extraction/machines for extracting AVP [1]
- (c) add topsoil/overburden; irrigate/fertilise/other methods of soil improvement after added back; plant trees, etc. or plants will be growing; [3]