

MARK SCHEME for the May/June 2007 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) deforestation [1]
- (ii) soil erosion; tree roots bind soil; when gone rain/wind remove soil [3]
OR
habitat loss; trees provide 'home' for other species; lose home
OR
CO₂ levels build up; global warming; climate change/AVP, also allow idea of less photosynthesis causing less carbon dioxide uptake
OR
AVP (basic idea NAME; EXPLANATION; CONSEQUENCE)
- (iii) carbon dioxide/methane [1]
- (b) (i) sea level rise; described/consequence
OR
climate change; described/consequence
OR
ice cap melting; consequence
OR
animal/plant distribution changes; consequence (e.g. spread of malaria etc.)
AVP [2]
- (ii) laws to limit car use; encourage use of public transport; specific details; research alternative fuel sources; specific details; aid for insulation or in some way encourage; afforestation; AVP; (ban CFC IF it states they are greenhouse gases); (accept recycling IF linked to saving fuel as a consequence, NOT just on its own) [3]
- [Total: 10]**
- 2 (a) (i) **A** desert, **B** equatorial for ONE mark [1]
ref to high rainfall in **B** or low in **A**;
ref to always high temps in **B**, very high but variable in **A** [2]
- (ii) lack of water/little/no rain; plants need water to grow/photosynthesise/plants die (only allow once)/owtte
too hot; plants die
need irrigation; cost [4]
- (b) insecticides/pesticides; herbicides; ref to biological control methods/or described method which does not use agrochemicals; mark for correct specific example anywhere [3]
- [Total: 10]**

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- 3 (a) (i) A – evaporation
B – evapotranspiration/transpiration
C – precipitation/(A) rainfall [3]
- (ii) it will increase; no interception; by leaves/trunk/stem; no absorption; by roots
concrete (owtte) surface not 'absorbing' for one mark [3]
- (b) (i) washing/bathing/cleaning etc./laundrying/cooking/AVP [1]
cooling/reagent/HEP/steam generation etc./AVP [1]
- (ii) pollution control/sanitation/filtering/chlorination/deionising; AVP for one with
explanation for other (e.g. chlorination kills bacteria) [2]
- [Total: 10]**
- 4 (a) (i) 3 points plotted correctly for 2 marks, 2 for 1 mark [2]
- (ii) rises; levels off; fluctuates; any use of actual data relevant and correct [3]
- (b) (i) oil; sewage; any named chemical (correct) (mercury, etc.); hot water; detergent;
fishing equipment; AVP any [2]
- (ii) sewage treatment; treaties, etc., between countries; detergent on oil; barriers to
oil/booms; laws on dumping in sea/fines AVP [3]
- [Total: 10]**
- 5 (a) (i) coal [1]
- (ii) shells/plants/mud/sand/AVP; accumulates; and maybe moved by water/air; ref
pressure [2]
- (iii) coal 270 ± 10 for one mark [2]
BOTH oil AND gas 140 for second mark [2]
- (b) (i) noise; dust; fuel 'fumes' (specified) (@ carbon dioxide refs); visual pollution;
credit positive benefits too (e.g. better standard of living; money/jobs;
infrastructure); AVP [2]
- (ii) reclamation for one mark; details, add topsoil; plant plants/trees; add fert/humus;
introduce species in vaguer terms [3]
- [Total: 10]**
- 6 (a) (i) total area gone down (a lot); then back up (a little); could have either on its own or
if quote figs get 2 marks [2]
- (ii) reduced numbers/diversity; aquatic (owtte) habitat loss; loss of food from water
animals; some credit for reverse argument for land living species; AVP [3]
- (b) (i) drainage; for farming/housing; provide food/homes for more people; [3]
- (ii) protects it/saves it; cannot farm/build; restricted access; education/research; helps
economy because people pay to enter reserve [2]
- [Total: 10]**