

MARK SCHEME for the May/June 2014 series

0680 ENVIRONMENTAL MANAGEMENT

0680/11

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, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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- 1 (a) (i) living things / plants AND animals / biotic (components) (in an area / environment);
non-living (components) / abiotic (in an area);
ref. interaction / eq.; [3]
- (ii) (clockwise);
light / solar;
photosynthesis;
heat;
respiration; [4]
- (b) there would be reduced leaf fall;
there would thus be less humus / nutrients / organic matter;
the soil quality would decrease; [3]
- 2 (a) (i) high sea temperature / sea temperature $>27^{\circ}\text{C}$;
heats air above it;
hot air rises;
pressure gradient / low pressure develops which sucks in more air; [4]
- (ii) damage related to high winds, e.g. blown trees / buildings / eq.;
damage related to heavy rain / storm surge, e.g. flooding / landslides; [2]
- (iii) provision of shelters;
provision of emergency rations;
provision of medical supplies;
education as to what to do in event of cyclone;
better flood defences;
ref. better prediction / evacuation; [2]
- (b) (generation of) electricity;
pumping water from ground;
grinding corn / wheat etc.; [2]
- 3 (a) (i) *photosynthesise* water;
respire oxygen;
Ignore second use of same word. [2]
- (ii) oxygen / air;
because (air) spaces full of water;
oxygen not very soluble in water; [2]
- (iii) (improve) drainage;
addition of sand;
addition of manure / organic fertiliser;
spiking / digging holes;
tolerant strains of crops;
planting waterlogging resistant trees to take up water; [3]

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(b) (i) 660 (cm³); [1]

(ii) clay – C;
sand – A;
silt – B;

Three correct for two marks. Two or one correct for one mark. [2]

4 (a) fish / seafood;
oil / gas;
tidal power / wave power;
water;
salt;
tourism; [3]

(b) (i) A
oil;
death of fish / sea birds / oiling of feathers;

B
sewage;
lowers oxygen leading to death of fish etc.;
ref. to eutrophication / infectious disease / eq.; [4]

(ii) A
double hulls;
ban dumping / tank washing / provide tank cleaning facilities;
ref. to any clean up method (e.g. booms, detergent);

B
sewage treatment before discharge;
detail of above; [3]

5 (a) (i) A destructive / convergent;
C divergent / constructive; [2]

(ii) *Features to include:*
labelled oceanic and continental plates;
labelled subduction;
volcano shown;
labelled magma;
labelled fold mountains;
labelled friction;
melted rock shown / labelled; [4]

(b) hot rocks below country;
create hot springs (for bathing) / health spas;
can be used to heat water;
to warm houses;
generate electricity;
ref. to economic benefits;
tourism; [4]

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- 6 (a) (i) roots no longer able to bind soil;
plants no longer present to intercept rain;
rain washes soil away / nutrients out of soil;
wind blows soil away;
soil exposed; [4]
- (ii) water dissolves salts in soil / brings salt up in water;
evaporates from surface;
leave salts behind as; [2]
- (b) community forestry;
reforestation;
sustainable harvesting (strip logging / selective logging);
genetic engineering;
agro-forestry;
- Allow one or two development marks for any of these.* [4]

[Total: 60]