

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge Ordinary Level

MARK SCHEME for the October/November 2015 series

5014 ENVIRONMENTAL MANAGEMENT

5014/21

Paper 2, maximum raw mark 60

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- 1 (a) increasing population; more crops for export; increasing wealth; from industrial/service sector; AVP; [2]
- (b) rainfall: WZ more rainfall/DZ less rainfall; use of data;
 wet days: WZ more/DZ less; use of data;
 temperature: WZ only 2°C range/eq., DZ 6°C range/average temperature higher in DZ; use of data; [3]
- (c) (i) (enough rain) to allow germination/eq./allows crop to continue growing/eq.; [1]
- (ii) removes competing plants; removes pests; adds nutrients/minerals to the soil; makes soil more fertile;
 no plants to take up water; so soil becomes moist;
 more light gets to plants for faster growth; [2]
- (iii) not much rainfall; some plants/weeds will grow; so intercept rainfall/prevent run-off; roots bind soil; ref. to high rate of evapotranspiration/evaporation; [3]
- (iv) land is left to recover/eq.; fertilisers/pesticides not needed; low input low output method; soil structure/fertility not damaged in the longer term; [2]
- (d) (i) $(87.4 - 61.2 =) 26.2$;
 $42.8/43(\%)$;
Award two marks for the correct answer alone. [2]
- (ii) increase in volume of milk imported; price increases/idea of supply and demand; increased costs of production; example of increased cost; inflation; [2]
- (iii) 2009 with reasons for drop in value and volume of imported milk, e.g. less milk consumed/domestic production increased; so less demand; AVP; [2]
- (e) (i) y-axis labelled with units;
 maize produced plotted; maize imported plotted; (allow one error per plot)
 key used/identifies lines; [4]
- (ii) production: increased (until 2010) then decreased;
 imported: (initial increase) then/general decrease; [2]
- (iii) in 2007 to 2010: more maize harvested due to better seeds/better seed selection/GMO/eq.; more land area planted; more machinery used; more irrigation used; better prices/more demand; use of affordable/better fertiliser; AVP, e.g. imports too expensive; favourable conditions for maize growth;
 in 2010–2011: converse of above; ref. to less maize as other crops more profitable; [3]

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- (f) farmers can afford to pay for a cow / more cows; over several years; animals have better health / diseases treated; so more milk; imported cows may produce more milk / eq.; imported cows increase total number of cows; can be crossbred with local cows; to improve milk production; [4]

2 (a) (i) 12.5 million; (*Allow 12 500 000.*) [1]

- (ii) jobs that supply services / materials to the port or port workers / eq.; jobs such as food delivery / ship repair / laundry / hotels for crew members / other valid examples; [2]

- (iii) to protect from storms / cyclones / hurricanes; tsunami; prevent damage to ships; and cargo; so port can always work; ref. to rising sea levels / frequency of storms due to climate change; [3]

- (b) (i) deforestation; loss of habitat; loss of endangered species; scare wildlife away; soil erosion; air / dust / visual / noise pollution; damage to roads; [3]

- (ii) sand would only have to be dumped somewhere else; possible damage of dumping / sustainable used of sand; saves fuel / transport costs / eq.; save labour costs; [2]

- (c) (i) key completed; three schools and two green spaces; road network that works and buildings other than schools; any other two features, such as a marina / a specific service, e.g. gas lines, sewage pipes; [4]

- (ii) high spec. building, e.g. solar panels / small wind turbines; good insulation; use of recycled materials; another valid example; all sewage collected; so no organic matter pollution; all garbage recycled / collected; so no visual pollution / spread of disease; green spaces / parks; absorb air pollution; AVP, e.g. transport related; [4]

- (d) extra interest has to be paid; so less contribution to GDP / eq.; no jobs, so unemployment remains; no improvement in standard of living; no taxes paid; AVP; [2]

- (e) (i) can survey people with low literacy skills; make sure data is collected; [1]

- (ii) valid selection method, e.g. stratified / equal numbers for each age / gender group; several different interest groups / named groups; [2]

- (iii) (add up answers) and express as a percentage response / pie chart / eq.; [1]

- (iv) suitable questions related to the text given, e.g. Do you own land? / size of land owned / buildings owned / sources of income / compensation paid; [3]

AVP = Alternative Valid Point.

[Total: 60]