UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2006 question paper

0460 GEOGRAPHY

0460/04 Paper 4 (Alternative to Coursework), maximum raw mark 60

This mark scheme is published as an aid to teachers and students, 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.

The grade thresholds for various grades are published in the report on the examination for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses.

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

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1	**(a)**	**(i)**	Completion of the diagram to show the upward movement of a pebble at an angle and the downward movement of the pebble perpendicular to the foreshore.	1 @ 1 mark	**[1]**
		(ii)	Correct positioning of the direction of l.s.d. and direction of prevailing wind Both correct for mark	1 @ 1 mark	**[1]**
		(iii)	Ideas should include The pebbles/beach material is pushed up the beach at an angle by the swash/waves/direction of prevailing wind; The pebbles/beach material is dragged straight down/returns/perpendicular under the force of gravity; Repeated action	2 @ 1 mark	**[2]**
	(b)	**(i)**	• Saves time/faster; cover more sites in the time; all students experience fieldwork/sharing of work; safer; discuss ideas; easier if qualified • Comparison/fairer test/to get an average/control/minimising student error	2 @ 1 mark	**[2]**
		(ii)	Ideas should include – Use of tape to set out transect line/straight line from water's edge to back of beach – Starting at the water's edge the pantometer is placed along the transect line – vertical pole – The angle of slope change is measured using the protractor – Record the measured angle – Repeat the measurement for the width of the beach/length of the transect	3 @ 1 mark	**[3]**
	(c)	**(i)**	Correct marking of profile at 2 m (5°) and 4 m (8°) and line Look for change in the slope at 2 m and 4 m	2 @ 1 mark	**[2]**
		(ii)	Height difference measured from graph as 1.3 m. Accept 1.2 – 1.4 m Award mark for correct number, no penalty for no unit/wrong unit	1 @ 1 mark	**[1]**
		(iii)	2a wider/longer/higher than 2b; 2a steeper gradient than 2b; greater angle change in 2a than 2b; exception at 4 – 6 m; credit data	2 @ 1 mark	**[2]**
	(d)	**(i)**	Correct plotting of bars at 2a (16 m) and 2b (6 m) Size and location matters but not shading	1 @ 1 mark	**[1]**
		(ii)	10 m; plotted as line onto bar graph Fig. 5	2 @ 1 mark	**[2]**

(e)
- Description

All b profiles/1b, 2b and 3b are all flatter in gradient/slope than a profiles/1a, 2a and 3a; All b profiles/1b, 2b and 3b change less in gradient/slope than a profiles/1a, 2a and 3a;
0 – 2 m all low angles; 8 – 10 m all high angles;

- Explanation beach material has been moved/transported from site b to site a;

Beach material is stopped by the groynes;
Res 1 mark for des and 3 for exp Credit data, max 1 mark for dimension

4 @ 1 mark **[4]**

(f) (i) Height of Beach X is low; width of Beach X is narrow; similar to beach b; data similar to beach b;

2 @ 1 mark **[2]**

(ii) Ideas should include
- Process change e.g. reduced l.s.d/less deposition/greater erosion/change in processes across beach X
- Dev of reason e.g. shelter from waves by marina/lack of material due to trapped by marina

2 @ 1 mark **[2]**

Credit development

(g) Conclusion should include, for example
– Hypothesis correct;
– beach always wider closer to the groyne where l.s.d is stopped by groyne;
– data quoting the widths of beaches comparing a and b sites
– limitations of data collection concerning when data collected; student error; only one beach; other data to be collected; valid evaluations etc
Res 1 mark for hypothesis decision
Res 1 mark for limitations
Max 3 if no data

5 @ 1 mark **[5]**

[Total 30 marks]

2 (a) (i) Labelled working quarry area and vehicle storage

4 @ 1 mark **[4]**

(ii) Completed sketch with labels for 2 marks by showing railway line and settlement
Railway needs to follow hedge line

(b) (i) Ideas for example
Advantage – saves time/not collected data yourself/do not need to visit/can be more accurate/collected by professionals/cheaper;
Disadvantage – can be wrong/inaccurate/have not seen for yourself/not precise enough/biased

2 @ 1 mark **[2]**

(ii) Employment

1 @ 1 mark **[1]**

(iii) Process = heating in furnace

Output = the cement; fumes and waste heat/air pollution
1 mark for both underlining and in correct place on diagram
Just mark on Fig. 8

3 @ 1 mark **[3]**

Max 2 if extra words

(c)	**(i)**	To gain a representative sample/results; no student bias; range of views because not neighbours; easier	2 @ 1 mark	**[2]**
	(ii)	Complete the pie chart with • three correct line • a suitable title • a completed/used key tolerance of 2 mm	5 @ 1 mark	**[5]**
	(iii)	People are most concerned about air pollution; People are least concerned about litter; No credit for lists Credit grouping of issues	2 @ 1 mark	**[2]**
(d)		Ideas may include – respiratory diseases/breathing problems; – acid rain; – dust/particulate matter over the environment; – smog – Damage to vegetation/crops – global warming/greenhouse gases contributing to warming of the atmosphere	3 @ 1 mark Credit dev Max 2 if list	**[3]**
(e)		Road – (6/50) increased traffic congestion/noise/air pollution/dust from lorries Railway – (8/50) noise Pipeline – (0/50) no impact as underground Max 2 if no data quoted or no comparison statement	3 @ 1 mark One mark for each method	**[3]**
(f)		Ideas such as environmental survey around the area; bi-polar/scoring system; litter survey; pollution discs; Credit detail suggesting data type, how collected/measured, how recorded Max 3 for one method or list of methods	5 @ 1 mark Credit dev	**[5]**

[Total 30 marks]