

Cambridge International Examinations

Cambridge International General Certificate of Secondary Education

GEOGRAPHY 0460/43

Paper 4 Alternative to Coursework

October/November 2016

MARK SCHEME
Maximum Mark: 60

Published

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9		Cambridge IGCSE - October/November 2016 0460	43
(a)	(i)	In a Stevenson Screen: wet and dry bulb thermometer and maximum-minimum thermometer Outside a Stevenson Screen: wind vane and rain gauge All correct = 2 marks, 2 or 3 correct = 1 mark	[2]
	(ii)	Barometer	[1]
(b)	(i)	To get comparable / fair / consistent / reliable reading So results not affected by change in AP during the day / AP (or it) varies during the day / AP varies at different times	
			[1]
	(ii)	Millibar	[1]
	(iii)	35°	[1]
(c)	(i)	Plot results: 1012 mb & 12° & 1019 mb & 9° 2 @	1 [2]
	(ii)	Hypothesis is incorrect / false – 1 mark reserve There is no relationship between AP and temperature / no increase or decrease in temperature as AP increases (No credit for negative relationship) Highest AP = lowest temperature Credit 2 marks maximum for data e.g. Highest AP = 4° and lowest AP = 8° 1002 mb = 8° and 1022 mb = 4° (need 4 figures) 1017 mb = temps of 5° 6° and 7° 1008 mb 1015 mb and 1017 mb all = 5°	[4]
(d)	(i)	Diagram of traditional rain gauge: 1 mark maximum for diagram which includes funnel, collecting jar and outer casin 2 marks maximum for labels: Measuring jar / container / cylinder Funnel	g
		Outer casing Scale / measurement / mm If diagram is a 'home-made' gauge or pluviometer Credit 1 mark for diagram as appropriate and 2 marks for labels such as scale / ruler / bottle	[3]
	(ii)	Playground: so that rain gauge is not interfered with / kicked / played with OR rain may splash into gauge	
		Trees: so that there is no interception of rainfall / prevents rain entering funnel / so don't block rain / so leaves don't block funnel / to avoid drips from leaves 2 @	

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(iii) Take collecting jar / container out of casing

Record level of water in jar or container / measure amount of water in jar / pour water into measuring tube

Pour water from overflow container into measuring cylinder

Measure every day / daily / every 24 hours

Measure at same time

Empty jar after measuring

[4]

(iv) Plot AP = 1008 mb (need plot and line) and rainfall = 2.8 mm on 20th

2 @ 1 [2]

(v) Hypothesis is **correct** / results **support** hypothesis – 1 mark reserve Highest rainfall = lowest AP

No rainfall / 0 mm of rain = highest AP

Credit 1 reserve mark (maximum) for supporting data to show contrast e.g.

 $9.3 \,\mathrm{mm}$ of rain = $1003 \,\mathrm{mb}$ and $0 \,\mathrm{mm}$ of rain = $1020 \,\mathrm{mb}$ (need 4 figures)

 $4.1 \, \text{mm}$ of rain = $1007 \, \text{mb}$ and $2.5 \, \text{mm}$ of rain = $1012 \, \text{mb}$

[3]

[4]

(e) Sunshine recorder is placed south facing in northern hemisphere

Put sunshine recorder in open space / not affected by shade / exposed to sun's rays / top of building / on a pedestal or stand

Lens / glass ball focuses the sun's rays onto a piece of card / paper

Sun's rays scorch card (paper) / burns a line in the card (paper)

Measure length of burn line / length of (burn) line shows hours of sunlight / discontinuous or interrupted line if sun is obscured by cloud

Replace card (paper) each day / put card (paper) into sunshine recorder

[Total: 30 marks]

	age	T	Cambridge IGCSE – October/November 2016	0460	43	
2	(a)	(i)	Energy which comes from resources that will not run out			[1]
		(ii)	6 (accept 5–7)			[1]
		(iii)	Pie chart completion 1 mark for dividing line at 73%, 1 mark for shading			[2]
		(iv)	Coal decreases / more coal in 1990 Oil decreases Gas increases Total decreases			
				2	2 @ 1	[2]
	(b)	(i)	Includes gender / age groups / age groups don't overlap / doesn't ask exact age or directly about gender Contains introduction / explanation / purpose of study / polite / respects privacy / not to personal Asks for reason / opinion Gives scale of agreement / agree or disagree Contains categories to choose / yes/no question / multiple choice / closed questions Can convert to statistics / percentages / easy to graph / easy to put into chart Questions are relevant to hypothesis / covers everything needed / asks relevant questions / balanced			
			questione / bulantoca	3	3 @ 1	[3]
		(ii)	Stratified (quota) / systematic / random			[1]
		(iii) Stratified: Gender / age balance Appropriate to population of town / socio-economic status / different areas of to Systematic: Regular intervals / regular pattern				
			Every tenth person			
			Random: Ask anybody / next person / no pattern Use random number tables / pick numbers out of a hat to generate e.g. if number 6 selected ask the 6th person (DEV)	order to as	sk peop	le
			If no name / incorrect name of method in (ii) credit one appropriate If name in (ii) does not match description in (iii) credit (ii) but no cre		ı in (iii)	[2]
	(c)	(i)	Tidal power does not pollute the atmosphere			[1]
		(ii)	Completion of bars Turbines = 17, Free = 8	2	2 @ 1	[2]
		(iii)	Yes / results do support hypothesis (✓HA) 1 mark for comparable data e.g. Yes = 71, No = 29 / 71 out of 100 people agree / over 70 agree / 71% agree / 29 out of 100 disagree / 29% disagree			[2]
						[-]

Mark Scheme

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Syllabus

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(d) (i) Completion of divided bar

Two marks for dividing lines at 74% and 94% 1 mark for shading

[3]

(ii) Construction of the barrage will create jobs in the area

[1]

(iii) 1 mark (not reserve) for general idea such as:

About same amount of people / even balance of people agree and disagree / equal numbers have positive and negative opinions

e.g. 'negligible difference between the number of positive and negative opinions' Most people agreed with the positive statements (or an example of a positive statement) and most people agreed with the negative statements (or an example of a negative statement)

e.g. 90 said barrage will be a tourist attraction and 93 said barrage will threaten natural habitats

Credit 2 marks maximum for comparable data of **total** number of opinions against and for barrage e.g.

'strongly agree' 121 negative and 128 positive opinions 'strongly agree' and 'agree' 217 negative and 219 positive opinions Agree can be column 2 or columns 1 and 2 combined

Credit 1 mark maximum for comparable data evidence of one opinion against barrage and one opinion in favour of barrage e.g.

90 agree that barrage will threaten natural habitats and 93 agree that barrage will be a tourist attraction

Credit 1 mark maximum for comparison between agree and disagree for **total** responses about benefits (NOT problems) i.e.

219 agree and 81 disagree that the scheme brought benefits

[3]

(e) (i) HEP / hydro

Solar

Geothermal

Wave

Wind

Wood

Biomass / biofuel

2 @ 1 [2]

(ii) Burning fossil fuels or coal / cars use petrol / release greenhouse gases / release CO2 CO2 / greenhouse gases build up or increase in atmosphere Sun's energy / radiation passes through the earth's atmosphere Heats up earth's surface / absorbed by the earth's surface Radiation re-radiated back towards space / reflected back Greenhouse gases absorb / prevent escape of / trap outgoing radiation / reflect heat back

Reference to ozone layer: if ozone layer is **entire** context of answer award 0 but otherwise credit ideas which apply to global warming and ignore ozone layer reference

[4]

[Total: 30 marks]