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Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **October/November 2021**

MARK SCHEME

Maximum Mark: 60

Published

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.

Cambridge International will not enter into discussions about these mark schemes.

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This document consists of **11** printed pages.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

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Question	Answer	Marks
1a(i)	2015 **TICK/CROSS**	**1**
1(a)(ii)	The number of tourists increases **TICK/CROSS**	**1**
1(b)(i)	Examples Most/peak/highest in August OR increases to August / OR rises Feb to August (1) Least in January / February / December OR least at start and end of year OR decreases August to Dec (1) Credit 1 mark **reserve** for comparative stats including units from any two months e.g. 2.7– 2.8 million (M) days in August but 0.75 – 0.9 million (M) days in Dec/Jan (1RD) (1 + 1 + 1RD)	**3**
1(b)(ii)	Examples: Hotter / drier in August (summer months) / colder in winter (1) Traditional holiday / school holiday period in summer / August (1) More flights in summer / June-August (1) More attractions/events in summer / June-August (1) (1 + 1)	**2**

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Question	Answer	Marks
1(c)	Only credit one of **Stratified / Systematic / Random**: <u>Stratified:</u> Gender / age balance (1) Related to population structure of island / socio-economic status (1) <u>Systematic:</u> Regular intervals / regular pattern / equal / specific intervals (1) Every tenth/nth person (1) (Accept range 4–10th person) <u>Random:</u> Ask anybody / next person / no pattern (1) Use random number tables / pick numbers out of a hat to generate order to ask people (1) e.g. if number 6 selected ask the 6th person(1) If no name / incorrect name of method in (i), credit appropriate description If name does not match description credit name only i.e. if say Systematic then write about another method just give 1 for the name. (1 + 2)	**3**
1(d)(i)	Plot Germany = 19 Small crosses Plot Poland = 8 Dashed horizontal lines **TICKS/CROSSES** (1 + 1)	**2**
1(d)(ii)	Hypothesis is **true –** 1 mark reserve (✓HA) <u>Evidence</u> 51 tourists come from UK / 25% or 51/200 from UK (1) <u>Only</u> UK has >40 / UK has >40 which is higher than others (1) 18 more from UK than from next highest / Italy only has 33 (1) Hypothesis conclusion is incorrect / false / partly true = 0 (XHa) If no hypothesis conclusion ^HA and credit evidence (1HA + 1D + 1D)	**3**
1(e)(i)	Pie graph completion: Sunny weather = 45%, visiting friends or relatives = 6%, water sports = 2% 2 marks for dividing lines going clockwise @ 92% (331°), 98% (353°). 1 mark for correct shading using the key. **TICKS/CROSSES** (1 + 1 + 1)	**3**

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Question	Answer	Marks
1(e)(ii)	Hypothesis is **false / no / not supported** – 1 mark reserve (✓HA) Evidence Tourists from different countries come for the same reasons (1) (Main) attraction for tourists is sunny weather (1) (Second) attraction is history and culture of the island (1) Less important reasons e.g. visiting friends or relatives / water sports / enjoyed a previous visit / new holiday destination for tourists (1) Credit 1 mark max/reserve for supporting data from at least two named countries OR general ref to all countries. e.g. 45% from U.K. and 43% from Germany come for sunny weather / all over 40% OR between 41/45% (1) 2% from U.K and 1% from Italy come for water sports OR < 3% (1) (1HA + 1 + 1 + 1RD)	**4**
1(f)(i)	Marks for two correct plots; ignore shading. **TICKS/CROSSES** Plot recommendation from friend or relative = 30 Plot tourist guide book = 5 (1 + 1)	**2**
1(f)(ii)	Examples: Keep website up to date / make website informative / invest in website (1) Better or Improve magazine/newspaper adverts / brochures / advertising / guide books (1) More or Increase magazine/newspaper adverts / brochures / advertising / guide books / travel agents (1) (1 + 1)	**2**

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Question	Answer	Marks
1(g)	Examples: note it is 2 + 2 not 3 + 1 for marking. **Benefits (2 marks)** Brings money into the area / economy grows / increase GDP / sell to tourists / tourists buy products / brings in foreign currency / investment / economic development of country (1) Creates jobs for local people / e.g. of job (1) Local people experience other cultures / share culture / local traditions across the world / preserves local culture / learn languages (1) Improves local services / public transport / health / education (1) Locals can use tourist facilities / services (1) **Disadvantages (2 marks)** Disturbance to local people / noise (1) Traffic congestion (1) Tourists don't respect local culture / alcohol / religious issues / racial tension / prostitution (1) Tourist hotels / development take up farmland / knock down houses (1) Hotels spoil the view (1) Tourist industry uses water / electricity (1) Waste / litter (1) Seasonal jobs (1) Increased price of goods (1) Loss of privacy (1) Disease may spread (1) Overcrowding of services/locals cannot access (1) Tourists renting/buying property so locals cannot access (1) (2 + 2)	**4**

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<table>
<tr><th>Question</th><th>Answer</th><th>Marks</th></tr>
<tr><td>2(a)</td><td>
<table>
<tr><th>possible danger</th><th>precaution to protect students</th></tr>
<tr><td>infection from the water</td><td>Don’t drink water / wash when finished fieldwork / sanitise / wear gloves</td></tr>
<tr><td>insects or animals in the river</td><td>Protections such as: gloves / long sleeves / long trousers / insect repellent / jackets / coats</td></tr>
<tr><td>sharp stones on the river bed</td><td>Wear wellingtons / waders / boots / shoes</td></tr>
</table>
TICKS/CROSSES
(1 + 1 + 1)
</td><td>3</td></tr>
<tr><td>2(b)(i)</td><td><u>Examples</u>

Repeat measurements / take more than one reading at each sampling point / do test again (1)

• Get other students to check the reading on the meter (1)
• Use two or more meters at each sampling point (1)
• Make sure the meter is calibrated properly / working properly (1)
• Clear sensor after use / make sure sensor is clean (1)
• Leave sensor in water for period of time / until reading is stable / fully immerse sensor (1)

(1 + 1)</td><td>2</td></tr>
<tr><td>2(b)(ii)</td><td>Plot 9.3 at site 5 in 2018. <u>MUST be a cross</u>
TICK/CROSS</td><td>1</td></tr>
<tr><td>2(b)(iii)</td><td>Hypothesis is true – 1 mark reserve (✓HA)

Oxygen level higher at all/every sites in 2018 / lower at all sites in 2015 (1)

Credit 1 reserve/max mark for paired data from any one site
e.g. site 1: 9.1 mg/l and 9.8 mg/l in (1RD)/ 0.7 mg/l higher at site 1
e.g. Avge 8.36/8.4 but avge is 9.56/9.6 mg/l / higher avge +1.2 mg/l
e.g. highest in 2015 at 9.1 lowest in 2018 at 9.2

(1HA + 1 + 1RD)</td><td>3</td></tr>
</table>

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Question	Answer	Marks
2(c)(i)	Mark as 1 for definition and 1 for reason. <u>Definition</u> A fieldwork study done before the main study / a practice study / a sample study / a warm-up / a trial / a small-scale version / a test run (1 Reserve) <u>Reason</u> To practise/prepare for fieldwork techniques / the investigation (1) To find out any problems / avoid mistakes in real fieldwork / correct errors / improve reliability(1) To make sure that students understand instructions / know what to do / know what equipment to bring (1) To practise working as team / so everyone knows what to do (1) To test fieldwork equipment (1) To be more confident in real study (1) (1R + 1)	**2**
2(c)(ii)	<u>Examples</u> Indicator animals / species live or hide on river bed / beneath stones (1) Move animals into water / net (1) To find / discover animals / creatures / organisms (1)	**1**
2(c)(iii)	<u>Examples</u> The species/animals indicate quality of water / level of pollution (1) OR can quote 2nd line of passage in Fig 2.3	**1**
2(d)(i)	(Biotic group) 4 **TICK/CROSS**	**1**
2(d)(ii)	(Number of animals) 4 **TICK/CROSS**	**1**

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Question	Answer	Marks
2(d)(iii)	Number of animals circled in group 1 × group value = 3 × 4 = 12 Number of animals circled in group 2 × group value = 4 × 3 = 12 Number of animals circled in group 3 × group value = 1 × 2 = 2 Number of animals circled in group 4 × group value = 1 × 1 = 1 $total_number_of_animals = 9$ $total_value = 27$ $biotic\,index\,score = \frac{total_value}{total_number_of_animals} = \frac{27}{9} = 3$ 1 mark for correct equations/figures i.e. 3 × 4/4 × 3/1 × 2/1 × 1 OR 12/12/2/1 1 mark for correct equation or answer i.e. 27/9 or <u>3 using correct figs</u>. **TICKS/CROSSES** (1 + 1)	**2**
2(d)(iv)	Draw bars for site 3. Ignore shading **TICKS/CROSSES** 2.2 in 2015 and 3.3 in 2018 (1 + 1)	**2**
2(d)(v)	**Agree for some sites** – 1 mark reserve (✓HA) <u>Evidence</u> Agree for sites <u>1,3 and 4</u> OR disagree for <u>sites 2 and 5</u> (1) Credit <u>2 marks</u> max/reserve for data from one site which agrees and one site which disagree with hypothesis e.g. site 1 agrees – B.I. score = 2.0 and 3.0 (1RD) e.g. site 5 disagrees – B.I. score = 3.0 and 2.8 (1RD) e.g. site 2 disagrees – B.I score = 2.8 in both years (1RD) (1HA + 1 + 2RD)	**4**
2(d)(vi)	<u>Examples</u> Different sources of pollution along the course of river / pollution types vary along the river 1) Farms – pesticides/fertilisers flowing into river (1) Towns / tourist sites – sewage outfall / litter (1) Factories – industrial waste materials(1) Water may be treated / cleaned / conservation at points along river (1) Input of clean or dirty water from a tributary (1) More water / wider or deeper river dilutes pollution (1) Faster flow means less pollution / slower flow means more pollution (1) (1 + 1)	**2**

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Question	Answer	Marks
2(e)	<u>One reserve mark for an appropriate hypothesis relating to fieldwork on a river **but NOT water pollution.**</u> **<u>Hypotheses – must be question or statement (MAX 1 mark) such as:</u>** e.g. Channel width increases downstream (1HA) e.g. Does channel depth increase downstream? (1HA) e.g. River velocity increases downstream (1HA) e.g. Does river velocity vary across the channel? (1HA) e.g. Does river depth increase downstream? (1HA) e.g. Pebbles get larger and become more angular downstream. (1HA) **EXAMPLES OF INAPPROPRIATE HYPOTHESES** **Stating a topic or inappropriate statement = 0 BUT method marks OK as relate to river fieldwork.** e.g. River velocity. e.g. Pebble size. e.g. The students measured the river width e.g. The steepness of a river. If **hypothesis not relevant/practical for river fieldwork** then 0 marks for whole answer. e.g. Type of animals vary downstream in a river. e.g. The amount of algae varies in a river **If no hypothesis stated at all = 0 but credit the method if related to acceptable river fieldwork.** **<u>Fieldwork methods (MAX 4 marks)</u>** <u>Example 1 – method to measure channel width</u> Choose at least 2 sites along the river (1) One student/pole on each bank/side of river (1) Place measuring tape across channel / from one bank to the other (1) Keep tape taut/stretched (1) Poles must be directly across / at 90 degrees to banks (1) Repeat at different sites and calculate average width (1) Record results (1) <u>Example 2 – method of measuring velocity using floats</u> Choose at least 2 sites along the river (1) Put poles/sticks 10metres or fixed distance along river (1) Use tape measure to measure distance (1) Put float/orange in river at start of distance (1) Start stopwatch/timer when float released at start point (1) Measure time taken for float to travel between poles (1) Stop stopwatch/timer when float passes end point (1) Repeat at different points and calculate average speed (1) Record results (1) <u>No credit for using formulas</u>)	**5**

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Question	Answer	Marks
2(e)	Example 3 – method of measuring velocity using flowmeter Choose at least 2 sites along the river (1) Put meter/propeller/flowmeter below surface of water/into water (1) Propeller must face upstream (1) No obstacles in front of propeller (1) Read/look at digital reading/display to see speed (1) Take several/repeat readings and calculate average speed (1) Repeat at different points across channel and calculate average speed (1) Record results (1) No credit for using formulas Example 4 – method of measuring depth downstream Put tape measure across the stream (1) Measure from bank to bank / side to side (1) Decide on equal intervals across the stream (1) Put a stick/metre ruler into the water at each interval (1) Stick/ruler must be vertical (1) Stick/ruler must touch bed (1) Measure the wet part of the stick/ruler (1) Repeat at second site downstream and calculate the average (1) Record the results (1) Example 5 – method of measuring pebble roundness downstream Decide on sampling method – either random/systematic (1) Choose 10/20 pebbles from the river bed (1) Decide on the roundness of each pebble using scale (1) Repeat at second site downstream and calculate the average (1)) Record the results (1) (1HA + 1 + 1 + 1 + 1)	

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