Cambridge Assessment International Education

Cambridge IGCSE™

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **March 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.

Cambridge International is publishing the mark schemes for the March 2021 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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[Turn over

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
1(a)(i)	Central Business District	**1**
1(a)(ii)	Industrial estate	**1**
1(b)(i)	Shade President hotel = 6 storeys, Tswana house = 2 storeys (1 + 1)	**2**
1(b)(ii)	Draw bars 6 storeys at 2 km and 1 storey at 4 km. No credit for shading. (1 + 1)	**2**
1(b)(iii)	Hypothesis is **true / correct** – 1 mark reserve (✓HA) Buildings in the CBD are taller on all four transects / less at all other sites / taller than all other sites / in every direction (1) Credit 1 reserve mark for paired data on one transect comparing number of storeys in CBD and away from CBD. **Must state transect if use one. Should compare CBD with either 2 or 4 km; no need for both** e.g. North transect: In CBD = 7.5 storeys high but 4 km away = 1 storey. (1RD) e.g. CBD 6.3/10.3 storeys but away ranges from 1–6 storeys (1RD) e.g. CBD storeys at least 4.3 higher than any other transect (1RD) e.g. CBD min 6.3 but max 6 at other sites (1!RD) Hypothesis is false / partly true then no credit If no hypothesis conclusion then credit evidence (1HA + 1 + 1RD)	**3**
1(b)(iv)	Examples Demand for land can vary (1) Value of land / price of land / cost of land (1) Less space for building means they have to be high OR more space so buildings are lower (1) Government / planning rules limiting height / zoning laws (1) Different land uses / examples of **two** land uses requiring different heights (1) Nature of foundations/ground may vary (1) (1 + 1)	**2**
1(c)(i)	Examples Have a bigger range of scores / more scores (1) Have more precise / detailed descriptions / less subjective / more objective / less vague (1) Include more features / categories in survey / credit example e.g. water pollution (1) (1 + 1)	**2**

Question	Answer	Marks
1(c)(ii)	1 mark for two correct bottom lines 2–2/2–3 (1) 1 mark for joining the 3–3 plots up (1) NOTE ECF issue if above wrong (1 + 1)	**2**
1(c)(iii)	Hypothesis is **false / incorrect** – 1 mark reserve (✓HA) Quality is better/ greater score 2 km away from the CBD (1) Credit reserve data mark for paired data comparing **total scores** in CBD and away from CBD. Must refer to transect if used. e.g. 9 in CBD and 12 at 2 km away on **north** transect. (1 RD) e.g. Average total 9.5 in CBD but 12.5 at 2 km (1RD) Credit 1 reserve data mark for comparing scores of **one feature** in CBD and 2 km away from CBD on east transect.. e.g. Litter and vandalism = 2 in CBD and 3 at 2 km away (1 RD) e.g. Total scores 10 in CBD but 13 at 2 km (1RD) Hypothesis is false / partly true then no credit If no hypothesis conclusion then credit evidence (1 HA + 1 + 2RD)	**4**
1(d)(i)	Shading in bank (crosses) (1) and hotel (dashed horizontal lines) (1) (1 + 1)	**2**
1(d)(ii)	Examples Better access / more transport routes (1) Larger sphere of influence / people come from larger area (1) More customers in CBD / higher threshold population / demand (1) More chance to make money / profit / income(1) Shops / hotels / restaurants attract tourists (1) Centre of economic activity so banks (1) (1 + 1)	**2**
1(d)(iii)	Examples Building A is taller / has more storeys than building B / 2 storeys more (1) Building A has leisure / tourism / hotel and building B has workplace /offices (1) 1 MAX for specific comparisons just listing types. e.g. Building A has a hotel and building B has financial / insurance / education offices (1M) e.g. Building A has gift shop and building B has car showroom (1M) e.g. Building A has a gym and building B has finance offices.(1M) (1 + 1 + 1M)	**3**

Question	Answer	Marks
1(e)	Planning: When to do count / several times in a day (1) How long to do each count for (1) All start to count at same time (1) Count for same length of time (1) Decide where to count / location of counting points / along transects / choose sites (1) How many different counting points to have (1) Do it as a group / pairs (1) Count on more than one day / weekdays and weekends / different days(1) Use a recording sheet (1) Carrying out Timing of count / watch (1) Tally method / 'clicker' (1) Jobs of student in each group e.g. two students do each count / count people going in different directions (1) Credit either planning or carrying out – no reserve (1 + 1 + 1 + 1)	**4**

Question	Answer	Marks
2(a)(i)	**Method 1:** Divide river in sections or 5–10 m / use a specific distance (1) Use poles to mark out each section / start + finish points (1) Measure the distance with a tape measure (1) Put orange / dog biscuit / float / into river at starting point / by first pole (1) Time float moving from start to finish (1) Repeat across the river channel / repeat **and** calculate average time (1) Calculate velocity by dividing distance by time (1) (1 + 1 + 1 +1)	**4**
2(a)(ii)	**Method 2:** Put velocity meter / propeller below surface of river / in river / submerge (1) Propeller must be facing upstream (1) Nothing in front of / blocking flow past the propeller / stand behind it (1) Read / look at digital / velocity reading / display / reading on screen (1) Take more readings across river channel / at different depths **and** calculate average (1) Repeat at same site and take average (1) (1 + 1 + 1)	**3**
2(b)(i)	Plot 1.2 m / sec at site 6 and 2.0 m/sec at site 7. Plots must be crosses. (1 + 1)	**2**

Question	Answer	Marks
2(b)(ii)	Should answer with positives of velocity meter but credit answers which do opposite and focus on negatives of floats. Avoid double credit though. Examples Simpler equipment to set up and use (1) Less errors in calculating / timing / measurement using a velocity meter (1) More accurate results / readings / more precise / exact (1) Meter is not affected by wind (unlike floats) (1) Meter measures velocity below surface / at different depths (1) Floats get stuck in channel / hit objects / vegetation in channel (1) Floats do not move in a straight line downstream (1) Measurements not easy to take at different points across river (1) Difficult to have accurate start / finish times (1) Floats affected by wind (1) (1 + 1 + 1)	**3**
2(b)(iii)	**NOTE : Question requires Method 2 data only.** Hypothesis is **true /** velocity does become faster downstream **–** 1 mark reserve (✓HA) 1 mark for **average** velocity data from **any** two sites showing increase. e.g. site 1 = 0.7 m/sec and site 7 = 2.1 m/sec (1) 1 mark for **other comparative** data from **any** two sites showing increase. e.g. right side at site 1 = 0.6 and at site 7 = 2.0 (1) Hypothesis is false / partly true then no credit If no hypothesis conclusion then credit evidence (1HA + 2RD)	**3**
2(c)(i)	Examples Use tape measure to measure certain distance / 10 m (5 m or more) (1) Students hold / put poles / rods at either end of measured distance (1) Put two poles / rods vertically/straight on river bed (1) Student holds clinometer next to top / at certain height on pole (1) Lines up identified position / top of other pole (1) Student uses clinometer to measure angle / read off angle / read off degrees (1) (1 + 1 + 1 + 1)	**4**
2(c)(ii)	Site 6	**1**
2(c)(iii)	Plot and draw angle of slope line (8^{o}) for site 5	**1**

Question	Answer	Marks
2(c)(iv)	Hypothesis is **false** – 1 mark reserve Angle of slope <u>varies</u> / fluctuates / is not uniform between different sites downstream / there is no relationship / is random / decreases + increases (1) Credit 1 reserve mark for paired **average** data for **three** sites to show the slope fluctuates e.g. 7° at site 1, 4° at site 2 and 9° at site 6 (1RD) Hypothesis is false / partly true then no credit If no hypothesis conclusion then credit evidence (1HA + 1 + 1RD)	**3**
2(d)	<u>No credit for data</u> Overall a positive relationship / velocity increases as slope is steeper / greater the angle of slope the higher the velocity (1) A few anomalies / outliers to the general pattern / site 1 **or** site 3 are anomalies (1) (1 + 1)	**2**
2(e)	<u>Examples</u> Choose same 7 sites / choose different sites / repeat at sites downstream (1) Put poles / students on each bank / either side of river (1) Put rope from one bank / pole to the other / across river (1) Put tape measure from one bank / pole to the other / across the river (1) Keep tape measure OR rope taut / horizontal / stretched / above water (1) Measure the rope with tape measure OR read off tape measure (1) Measure perpendicular / at right angles to banks (1) Record measurement of width (1) Repeat measurements at same site and calculate the average width (1) (1 + 1 + 1 + 1)	**4**