Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

GEOGRAPHY **0460/41**

Paper 4 Alternative to Coursework **October/November 2016**

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 will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2016 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

1 (a) Evaporation: water is heated and turns into water vapour
Interception: leaves of trees stop rain from reaching the ground
Throughflow: Water moves through the soil
3 correct = 2 marks, 1 or 2 correct =1 mark

[2]

(b) (i) (Water) is poured into / added to / put in the cylinder
(Stopwatch) records / measures time / every minute / 5 minutes
(Measuring cylinder) is pushed into the ground / water to height of 10 cm / water up to 10 cm [3]

(ii) Completion of flower garden line graph
Plots at 3,4 and 5 mins = 1 mark (need triangle), line = 1 mark [2]

(iii) Infiltration / water soaking in takes **long** time on the floodplain
Infiltration / water soaking in takes **short** time in the woodland

Infiltration takes **more** time / **longer** on flood plain (than in woodland) = 2 marks

Credit 1 mark maximum for paired times to show difference e.g.
Water to soak into ground / go down to 0 takes 3 mins in woodland and 16 mins on floodplain
After 1 min = 5 cm in woodland and 9 cm on floodplain

Water to soak into ground / go down to 0 **only** takes 3 mins in woodland and 16 mins on floodplain = 2 marks

No need for units but NOT seconds / hours

No hypothesis mark [3]

(iv) Different (types of) soil or ground / clay or sandy
OR link one soil type to infiltration e.g. **infiltration increases** on sandy soil / **infiltration decreases** on clay soil

Different (types of) vegetation or land use / different amount of vegetation / trees or flowers or grass (any 2)

OR link one type of vegetation to infiltration e.g. people on grass compress soil **reducing infiltration**
e.g. in woodland roots **increase infiltration**

Nearer river / how near the sites are to the river / on flood plain / away from flood plain

OR one site linked to infiltration e.g. site in floodplain is already wet so **less infiltration**
^ type of soil / amount of vegetation / type of vegetation [3]

(c) (i) Put / place quadrat (on ground) / throw quadrat / drop quadrat
Count the number of squares with vegetation or grass or bare ground / estimate number of squares / estimate percentage
Do more than one measurement **and** calculate average
Do task in different areas of the park / different places [3]

(ii) Complete divided bar graph for flower garden – 45% vegetation cover, 55% bare ground
Need both dividing line at 45% and shading

No credit if dividing line at 55% and shading incorrect [1]

(iii) Faster or more infiltration with least vegetation cover / most bare ground
OR
Slower or less infiltration with most vegetation cover / least bare ground

1 mark maximum for comparing any two types of vegetation e.g.
faster infiltration in woodland than floodplain
faster infiltration in flower garden than playing field
fastest infiltration in the woodland

Credit paired contrasting data from different vegetation areas for 1 mark e.g.
90% vegetation cover (or 10% bare ground) on flood plain and
25% vegetation cover (or 75% bare ground) in woodland
OR
90% vegetation cover on floodplain and 75% bare ground in woodland
No hypothesis mark

[3]

(iv) Made from concrete
Impermeable surface / doesn't allow water to pass / not absorbed / not soak into / not get into / not permeable [2]

(d) (i) Hold the tape measure at the other side (of) / across the path
Measure 25 cm / equal intervals across tape
Measure from tape to ground / measure depth of path
Record / write down results / read results off ruler / read measurements / take notes of measurement [3]

(ii) 14 cm [1]

(iii) There is less infiltration where there is most footpath erosion OR
Footpath erosion / compaction / people walking may stop / slow / reduce / not allow infiltration OR
It will decrease rate of infiltration OR
Deeper the footpath the slower the rate of infiltration [1]

(iv) Ideas such as:
Permanent path / tarmac path / concrete path / artificial path / rocks in path / bricks / tiles / steps (to go uphill)
Restore eroded footpaths / fill in hole / replace soil
Alternative / signposted paths / more paths / new paths / build paths
Put fencing along edge of path
Improve drainage
Re-seeding around footpath / more grass around path
Prohibit use / allow treated paths time to recover / restrict access times / 'keep off' signs / don't let people walk on path
Small / low bridges / boardwalks / walkways / platforms
Education about / raise awareness of footpath erosion / park rangers [3]

[Total: 30 marks]

2 (a) (i) Secondary [1]

(ii) Modern estate: B
Linear arrangement: A
Houses built on floodplain: D
3 correct = 2 marks, 1 or 2 correct = 1 mark [2]

(iii) People moving from the city / urban-rural movement
Increase in car ownership
Growth of commuting to work
Attraction of living (in countryside) / peaceful / less polluted / better living conditions / attractive scenery OR problem of city e.g. dangerous / expensive housing / noisy traffic
New housing / new industry / growth of housing or industry
Near to main road / motorway
Growth in population / people move to city / people move for work / move closer to work
Cheaper land
Rural to urban migration
More jobs [2]

(b) (i) Advantage:
Not stopping people who are going somewhere / more time to answer / can talk directly to people
Covers all or different areas of the settlement / evenly distributed
Daylight

Disadvantages:
People out at work / not at home
Disturbing people at home / having a sleep / people angry because they have come to the house / people are busy
Unbalanced number of residents from different areas
No control over sample of residents / mainly old people [3]

(ii) Completion of histogram: 21–35 years = 4 and more than 35 years = 16
2 @ 1 [2]

(iii) **Yes** / hypothesis is **correct** / **majority** or **more than half** have lived there for more than 10 years – 1 mark reserve
22 out of 35 people have lived there for more than 10 years
OR

22 have lived there for more than 10 years and 13 have lived there for less than 10 years

OR
63% have lived there for more than 10 years [2]

(iv) People in area B lived there less time than people in area C

Comparisons such as:
In area B (all) people lived there for less than 10 years and in area C (all) people lived there for more than 10 years
In area B most people lived there for less than 5 years and in area C most people lived there for more than 35 years
More people have lived in settlement C for more than 35 years

1 mark maximum for simple statistical comparisons between two areas e.g.
Less than 5 years: 8 people in area B, 0 in area C
Less than 10 years: 10 people in area B, 0 in area C
More than 10 years: 0 people in area B, 15 in area C
More than 35 years: 0 people in area B, 10 in area C
21–35 years: 0 people in area B, 4 in area C
8 people have lived in area B for less than 5 years and 15 people have lived in area C for more than 10 years

No credit for comparison of 5–10 years, 11–20 years, total populations [3]

(c) (i) Plotting on scattergraph
(Resident 34): 37 years and 4 km
(Resident 35): 8 years and 48 km 2 @ 1 [2]

(ii) Hypothesis is **incorrect** – 1 mark reserve
People who have lived in the settlement longest / long time travel less / shorter distance to work
OR
People who have lived in the settlement shortest/ short time travel more / greater distance to work
OR
Negative correlation between distance to journey to work and number of years lived in settlement

2 marks maximum for general trend statements such as:
People who have lived in the settlement less than 10 years travel over 20 km to work
People who have lived in the settlement more than 30 years travel less than 20 km to work

Anomaly of 1 person / resident 12 has lived in the settlement 1 year and travels 7 km to work

1 mark maximum for two contrasting individual residents e.g.
4 years resident = 55 km travelled and 40 years resident = 1 km travelled [4]

(iii) Newer residents commute to / work in town / city / CBD
People who have lived longer / born in the settlement work in farm / industry / village / market [2]

(d) (i) Born in the settlement = 6
Attractive scenery = 5
Peaceful location =3 [1]

(ii) Pie graph [1]

(iii) More people have moved into the settlement than were born in it [1]

(e) Mark on map different shops / services
Map land use in local villages / do land use survey / create own map
Use a key to show different shops and services
Classify shops and services / create categories / e.g. of classification
Tally number of shops and services in different categories / count different shops / count shops
Record results of fieldwork in table
Sketch / photo of different shops
Different groups of students go to different villages
Compare different sized villages or different functions of villages [4]

[Total: 30 marks]