CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge Ordinary Level

MARK SCHEME for the May/June 2015 series

2217 GEOGRAPHY

2217/23 Paper 2 (Investigation and Skills), maximum raw mark 90

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.

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CAMBRIDGE
International Examinations

1 **(a)** Health centre – Junction [3]
Mixed or scattered cultivation – All of them
Class A road – None of them

(b) **(i)** 818 378 [1]

(ii) 245 – 250° [1]

(iii) 4150 – 4450 [1]

(c) **(i)** Woodland [1]

(ii) Concave slope / gentle(r) in west / steep(er) in east [4]
Up to 680 / 700 metres
From 200 / 220 metres
Slope faces west
River valley
Stream flows NW
Steam disappears
About 1km long

(d) Near quarries [5]
Flat land
Workers from Nain
Light railway to transport to the coast
Airstrip for business activity
Areas to contain waste
(Good) road access from all directions

(ii) Jetty [4]
Bay
Sheltered by point
Road access
Rail access
Relatively flat
Needed to export bauxite

[Max 20]

2 **(a)** **(i)** Correct completion of Fig. 2 [2]

(ii) Manila [1]

(iii) Tertiary [1]

(b) **(i)** Correct completion of Fig. 2 [1]

(ii) Seoul [1]

(iii) Skyscrapers / office blocks [2]
Close buildings
Transport links into CBD

[Max 8]

3 **(a)** **(i)** B [2]
D

(ii) New plate material added in the middle of the ocean [2]
No subduction at edges
N American Plate & Eurasian Plate / S American Plate & African Plate moving apart

(b) **(i)** C / I [1]

(ii) C / G [1]

(c) Earthquakes [2]
Volcanoes

[Max 8]

4 **(a)** **(i)** Bulb is covered by material which is kept moist [1]

(ii) Keep the dry-bulb dry [2]
Stop wind causing excess evaporation
To avoid direct sunlight

(b) **(i)** 100% [1]

(ii) 12 – 9 = 3 [2]
67

(c) Barometer [2]
Max-min thermometer

[Max 8]

5 **(a)** Flat / gentle slope in foreground [3]
Hills / rock mounds
Steep slopes
Dissected

(b) Dry / brown grass [3]
Tussocks / clumps
Trees / bushes
Patches of bare ground

(c) Freeze-thaw [2]
Exfoliation
Biological (root expansion)

[Max 8]

6 **(a)** **(i)** Correct placement of line [2]
Correct key

(ii) 7% [1]

(b) **(i)** Restricts their income [1]
Limits their status
No way to improve their situation

(ii) Trees intercept water [4]
Drip is slower impact speed
Roots encourage infiltration
Roots bind soil together
Wind speed at ground level is reduced

[Max 8]

Section B

7 (a) (i) Dangers such as:
Swallowing polluted water
Rats in the water / insects / vermin
Infection in open wound / cut
Fumes / gases
Sharp objects
Chemicals in water

Protections such as: gloves / waterproof clothes / long sleeves / long trousers
Masks / goggles
Don't drink water / don't put fingers in water / wash when finished fieldwork
Wellingtons / waders / boots / shoes
Insect repellent
Cover up wound / plaster

Must be dangers of **pollution** not just river
Credit protection if appropriate to pollution, even if danger not credited.
No link needed

2 + 2 [4]

(ii) Foam on surface / water is not clear / murky / cloudy / can't see river bed
Discolouration / grey / green / brown / dark colour or any appropriate colour
Dead fish / animals
Rubbish / litter in water or on river bank
Oil film in water
Algae on the surface

2 @ 1 [2]

(b) (i) Take more than one reading at each sampling point (DON'T need average) / do test again / repeat investigation / other student does test
Get other students to check the reading on the meter
Use two or more meters at each sampling point
Make sure the meter is calibrated properly / working properly
Clear sensor after use / make sure sensor is clean
Leave sensor in water for period of time / until reading is stable

2 @ 1 [2]

(ii) Digital meter gives a precise / accurate reading / to 1 or 2 decimal points
Time for dye to disappear is measured in days
Measuring time depends on subjective decision of when water is clear of dye or foam / hard to decide when water is clear

2 @ 1 [2]

(iii) Plot results for 9 days for dye to disappear at site 1,
48 minutes for foam to disappear at site 4 2 @ 1 [2]

(iv) Hypothesis is **true** – 1 mark reserve

pH reading decreases / water becomes more acidic (from site 1 to site 5 / downstream)
Dye disappears more quickly or in less days / time / oxygen level decreases (from site 1 to site 5 / downstream)
Foam takes longer to disappear (from site 1 to site 5 / downstream)
Statements to **2 marks max**

Credit paired data (distance or site and measurement) for any 2 sites to **1 mark max**.
This is a **reserve mark**.
E.g. at 5km pH is 6.6 & at 25km pH is 5.0
At 5 km dye takes 9 days to disappear & at 25km dye takes 2 days
At site 1 foam disappears in 2 minutes & at site 5 it disappears in 55 minutes
No tolerance on stats. [4]

(v) Different sources of pollution along the course of river
OR Farms / sewage outfall / towns / factories in some parts of river and not others
OR Factories release waste into river / farms release slurry etc.
Water may be treated / cleaned at point along river
Input of clean or dirty water from a tributary
More water / wider or deeper river dilutes pollution
Faster flow means less pollution / slower flow means more pollution 2 @ 1 [2]

(c) (i) To practice fieldwork techniques / find out any problems / won't make mistake in real fieldwork /correct errors / practice identifying species / get experience
To make sure that students understand instructions / know what to do / are confident / know what equipment to bring
To practise working as team / so everyone knows what to do
To test fieldwork equipment

2 @ 1 [2]

(ii) Indicator animals / species live on river bed
OR Move animals into water / net
OR To find animals / creatures / organisms

[1]

(iii) To get a biotic score for each animal / put animal into correct group
So they could be quickly returned to the river [1]

(d) (i) Completion of tally marks: scud = 2, dragonfly = 5
Both needed for 1 mark [1]

(ii) 30 [1]

(iii) Plot 6.7 at 18km,
Plot 5.7 at 25km 2 @ 1 [2]

(iv) Average Biotic Index / score decreases / negative correlation

Credit paired stats for any 2 sites for 1 mark
e.g. at 5km / site 1 B.I. = 8.5 & at 25km / site 5 B.I. = 5.7
BI decrease by 2.8 over 20km 2

(v) Group 1 / clean water species or example live at sites 1, 2 /
most group 1 species found at sites 1 / 2
Group 3 / polluted water species or example live at sites 4,5 / most group 3 species found at sites 4 / 5
No group 1 species or example found at sites 4 / 5
Number of group 1 species or example decreases from sites 1 to 5
Group 3 species or example increase from 0 at site 1 to 7 at site 5
Number of group 3 species or example increase from sites 1 to 5

Need reference to group or example and sites or distance downstream

[2]

[Total 30 marks]

8 (a) (i) 20 people:
Not enough for a reliable sample
Too few responses to reach a conclusion / to make study worthwhile
Not represent all people
Not full range of answers

500 people:
Take too long / long time to complete
Too many responses to produce the results from / analyse / process / put into data table
May not find 500 people
To many people for six students to deal with

1 + 1 [2]

(ii) Systematic sampling
Ask every tenth person / regular intervals
Avoid bias / fair test / quick method
OR
Random sampling
Use random numbers / ask next person they meet /ask anybody / any order / no specific order
Random numbers avoids bias / quick method / fair test
OR
Stratified sampling
Ask appropriate age / gender balance / in proportion to population / put into groups
Avoids bias / get proportionate sample / questionnaire contains different age groups & gender /fair test

1 mark for name, 1 mark for description, 1 mark for explanation
If method is wrong or blank credit appropriate description & explanation of one sampling method 3 @ 1 [3]

(iii) Where did you move from?
How long have you lived in the squatter settlement? / When did you move here?
How many members of your family came to the squatter settlement with you?

2 @ 1 [2]

(b) (i) Completion of pie chart
This is the only house I could afford = 10%, to join other members of the family 18%
1 mark for dividing line at 82%, 1 mark for shading [2]

(ii) Results **do** support hypothesis – 1 mark reserve

More than half / more than 50% / most / majority moved to look for work / get a job / for employment
Less than half / less than 50% moved for other reasons

Credit data to **2 marks max**
54 moved for employment / 46 moved for reasons other than employment
31 moved to look for work **&** 23 moved to earn money to look after family (NEED BOTH)
[4]

(c) (i) Completion of bar graphs
New schools built for older children = 40
House is too small with too few rooms = 57 2 @ 1 [2]

(ii) Fire:
Houses are built of wood / scrap materials / easily burn / flammable
Houses are very cramped / close together
Fire can easily spread
Difficult for fire service to access community / no local fire service
Electrical cables / wires may not be safe / exposed
Gas leaks due to poor pipes
Open fires for cooking
Lack of regulations to prevent fire

Flooding:
Houses often built on floodplain / lowland / near river / on flat land
No flood protection barriers
Poor drainage / no pipes so water cannot drain away
Often in areas of heavy / intense / monsoon rainfall

2 + 2 [4]

(iii) No / results do **not** support hypothesis – 1 mark reserve
There are more problems (than benefits) / there are more types of problems
The main problem has a higher score than the main benefit

Credit paired data to **2 marks max**
e.g. 270 benefits and 311 problems (NOT people)
6 (named) benefits & 7 (named) problems
64 replies for highest scoring problem & 58 replies for highest scoring benefit

[4]

(d) Safety of students / mugging / theft / crime / dangerous place
Hassle from residents / children
People being reluctant to answer questions / won't answer truthfully / may lie / rude / embarrassed to give correct answer / busy doing something / will not cooperate
Getting lost / difficult to get to / poor transport links to squatter settlement
Not finding enough people to make the survey accurate / people working away from squatter settlement
Language difficulties for people to understand the survey / people cannot understand questionnaire / do not speak English
Polluted water / air / rubbish / unhygienic conditions / student illness / disease / open drains or sewers / rats
Busy / crowded / noisy streets make it difficult to use questionnaire with people

3 @ 1 [3]

(e) Talk to people who live in squatter settlement / interview them **about ….** (not questionnaire)
Take photos (of different houses to show varying conditions)
Collect secondary data from internet / local government records / census
Make a blog to get peoples' opinions about conditions
Make a podcast / video to show housing conditions
Draw field sketches (of houses) and label them to show conditions
Do a housing quality survey / bi-polar survey
Count / tally different types of building materials / number of brick-built houses
Observe / look at / make notes on / write a description of / walk round **something** e.g. housing conditions

Credit development of ideas related to various methods [4]

[Total 30 marks]