

MARK SCHEME for the May/June 2014 series

2217 GEOGRAPHY

2217/22

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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Section A

- 1 (a) (i) 5390
- (ii) 554888 [1]
- (b) Macheke [1]
- (c) Density of bush increases with height [1]
- (d) (i) 3400–3600 [1]
- (ii) Difference in height of 13.61 / 1667.12–1653.51 [2]
Gradient of 1: 250 to 1: 265
- (iii) NE or ENE [1]
- (e) Reservoir at SE edge (8.2–8.4 cm from NW) [5]
River (2.4–2.6 cm from NW)
Railway (6.5–6.7 cm from NW)
Cultivation from 0 to 2.4 cm from NW
Cultivation between road and railway (6.8–7.2 cm from NW)
- (f) (i) Gentle slopes [4]
Valley
River drains to SW
Tributaries/dendritic drainage
Meanders
Height 1500 m–1536 m
Sparse bush/vegetation
- (ii) Cultivation [3]
Huts
Buildings
Track/cut line/game trail
Dip Tank
Dams
- [Max 20]
- 2 (a) (i) Dotted shading in SW region [1]
- (ii) On west/north-west/south-west [3]
Along coast
One area in centre
One area at east
On the islands
Around Oban/Holyhead/Plymouth/Inverness

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- (b) (i) York
- (ii) 540 mm

- (c) The west is usually wetter than the east [2]
Rainfall in the east was closer to normal than in the west

[Max 8]

- 3 (a) (i) 2000 [1]
- (ii) Stable price [1]
Only small amount of uranium is needed
 - (iii) Expertise / experience [2]
Fuel / uranium supply
Money / finance
- (b) (i) 1150MW / 29.87 % [1]
- (ii) Air conditioning [1]
Fans
Refrigeration needs more power
 - (iii) Machines stop working [2]
Lights go off
Output is reduced
Sudden stop is dangerous for workers
When energy is used for heating everything cools down
Takes time to get everything up and running again
Still have to pay workers / costs but no income

[Max 8]

- 4 (a) (i) Correct rainfall [2]
Correct temperature
- (ii) April [1]
 - (iii) 100 mm [1]
 - (iv) 3 °C [1]
- (b) Drip tip leaves to shed excess water [3]
Thick buttress roots to provide stability in shallow soil
Thin bark as no need to limit moisture loss

[Max 8]

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- 5 (a) (i) Zone 4
- (ii) 6.7
- (iii) Zone 2 [1]
- (b) (i) General decrease from zone 1 to zone 6 [1]
- (ii) Lots of jobs in Zone 1 as CBD [2]
Other high percentages due to industrial zones
Zone 6 is on edge of city so more people have to travel elsewhere to work
Zone 6 may have better housing for high paid CBD workers
- (c) Work outside all of zones 1–6 / city [2]
Mobile job, e.g. taxi
Work in more than 1 location
- [Max 8]
- 6 (a) (i) Correct location of estuary [2]
Correct location of floodplain
- (ii) Line between point from which photograph taken and everything else [1]
- (b) Estuary / river – water supply [5]
Estuary / river – transport
Road / motorway
Railway
Housing for workers
Flat site
Greenfield site / room for expansion / large site
Away from major housing areas
Power supply
- [Max 8]

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Section B

7 (a) (i) Examples

- Keep together/stay as a group (1)
- Don't get lost/stick to paths/stay in designated area (1)
- Use a map/compass (1)
- Wear boots/appropriate clothes/suitable clothing (1)
- Don't climb trees (1)
- Take a mobile phone (1)
- Stay away from wild animals (1)
- Use insect repellent/sunblock etc. (1)

[1 + 1 + 1 = 3]

(ii) Similarities:

- Same length/400 metres long (1)
- Start at same place/height/380 metres (1)
- Go from grassland into woodland/both start in grassland (1)
- Both downhill/sloping (1)
- Both straight (1)
- Both cross a land-use boundary (1)

Differences:

- Go in different direction (1)
- Transect X is W-E/goes east, transect Y is S-N/goes north (1)
- Transect X is gentler (1)
- Transect X goes down to 321/339 m (in range), Y goes down to 300m/Y goes to lower height (1)
- Transect X is in coniferous wood, transect Y is in deciduous wood (1)

[2 + 2 = 4]

(b) (i) Systematic

[1]

(ii) Examples

- To get an equal distribution of sites/fair/consistent/no bias (1)
- To show how results change along transect (1)
- Gap between sites is not too big to miss change in results/get a good range (1)
- 25 metres is an easy length with a tape measure (1)
- If < 25 metres very time-consuming (1)
- By using 17 sites per transect can get a lot of data (1)

[1 + 1 = 2]

(c) (i) Examples

- Easy to read/use/less chance of error (1)
- Quick/saves time/instant measurement (1)
- Accurate/precise/sensitive/gives decimal point (1)

[1 + 1 = 2]

(ii) 35–37 % = 2 marks

32–34% or 38–40% = 1 mark

[2]

(iii) 8.4C

[1]

(iv) Completion of temperature line graph – 1 mark per plot

4.4°C at 275 m and 6.7°C at 300 m

[1 + 1 = 2]

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- (v) Completion of sky bar graph – 1 mark per bar
 70% at 150m and 62% at 300m [1 + 1 = 2]
- (vi) Sky percentage is higher in grassland than woodland/ lower in woodland than in grassland (1)
 Sky percentage is = > 95% in grassland but = < 92% in woodland (1) [1]

(d) (i) One mark reserved for decision on hypothesis.

TRUE / AGREE with Hypothesis.
 OR Temperatures are lower in coniferous woodland / higher in deciduous woodland

Evidence from Fig 3:

Coniferous temperatures 4.4–7 °C but deciduous temperatures 6.3–8.2 °C (1)
 Highest 8.2 °C in deciduous but only 7 °C in coniferous (1)
 Coniferous has figures below 6.3 °C but deciduous all = > 6.3C (1)
 Average temperature in coniferous 5.7 °C but higher average 7.1 °C in deciduous (1)
 [(1R + 1 + 1) = 3]

(ii) Examples of evidence

Sky results are lower in coniferous woodland or X / higher in deciduous woodland or Y (1)
 Coniferous percentage / X 32–92 % but deciduous / Y percentage 55–90 % (1)
 Average percentage lower / 53.9 / 54 % in coniferous / X OR higher / 66.6 / 67 % in deciduous / Y (1)
 Percentage of sky in deciduous / Y not below 55 % but in coniferous / X lowest is 32 % (1)
 [1 + 1 = 2]

(iii) Examples (Answers can be from deciduous point of view)

Can refer to A = Coniferous and B = Deciduous

Trees are closer together in coniferous woodland / A (1)
 Leaf / canopy cover is denser in coniferous woodland / A (1)
 Less sunlight can penetrate coniferous woodland / A (1)
 Less sunlight / higher shade in coniferous woodland / A (1) [1 + 1 = 2]

(e) Examples

Extend transects (1)
 Take more measurements / sites into woodland / smaller distance between measuring sites (1)
 Two / more people take same readings and check results (1)
 Use two thermometers (1)
 Take measurements at same time / not morning and afternoon (1)
 Better to do study over several days to get more reliable / average results (1)
 Use a mirror / light meter to measure sky / light (1) [1 + 1 + 1 = 3]

[Total: 30 marks]

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- 8 (a) (i) Examples
 Opportunity to test descriptions are appropriate (1)
 Opportunity to test that all features are covered in survey (1)
 Practise/improve methodology/know what to do (1)
 Check consistency of applying scoring criteria (1) [1 + 1 = 2]
- (ii) Examples
 Filled in/circled the location (1)
 Look at/observe each feature (1)
 Made a decision/give opinion about the score for each category (1)
 Put a tick/record/give score/mark in the appropriate row/box (1)
 Add up/work out total in column (1) [1 + 1 = 2]
- (iii) Examples: 1 for each suggestion and 1 for each reason
 Work in groups (1)
 So other students check scores (1)
 Makes results less subjective/biased/consistent/can take an average (1)
 Go to different areas (1)
 So they survey as many roads as possible in each area (1)
 Gives a larger sample (1)
 Makes efficient use of time (1)
 Do surveys on same day/at same time/under same conditions (1)
 So comparisons between areas more consistent (1) [2 × (1 + 1) = 4]
- (b) (i) Total = +11 + sign not essential [1]
- (ii) Completion of graphs for areas A (+1) and B (−3). [1 + 1 = 2]
- (iii) Examples: Need 4 references to data/the table.
 Area C/newest has highest score/+ 11 (1) compared to +6/−14 (1)
 Area C/newest has 7 positive scores/only 1 negative/mostly positive/vandalism and graffiti only negative (1)
 Area A/oldest does not have lowest score (1) is +6 compared to −14 (1)
 Area A/oldest has positive total score/6 positive scores (1)
 Area B/middle age has lowest/negative score (1) of −14 compared to +6/+ 11 (1)
 Area B has negative score in all 8 categories (1) [1 + 1 + 1 + 1 = 4]
- (c) (i) Stratified only acceptable
Examples of reasons for Stratified
 Will get people from different age groups (1)
 Will get people from different genders (1)
 Will get people from different socio-economic groups (1) [1R + (1 + 1) = 3]

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(ii) Hypothesis is partly true/false/untrue/incorrect

Evidence

True for parking and traffic in areas A & B (1) with 3.8 and 3.3 (1) or with 3.8 higher than the other two for parking (1) or with 3.7 higher than others for traffic (1)
Parking not true for area C (1) with 1.8 being lowest (1)
Traffic not true for area C (1) with 1.5 being lowest (1)

Scores in areas A and B = agree/strongly agree (1) as more above 3 (1)
Scores in area C = disagree/strongly disagree (1) as more below 2 (1)

If no decision given credit evidence for correct hypothesis to max 3

$$[(1R + 1 + 1 + 1) = 4]$$

(iii) Completion of divided bar graph

1 mark for both dividing lines at correct values from the left (20 and 39)

1 mark for shading in correct order and direction from the left.

$$[1 + 1 = 2]$$

(iv) Parking examples

Create more off-road parking areas/car parks/multi-storey parking/underground parking or garaging (1)

Create permit parking system/residents reserved spaces (1).

ALSO Park and ride schemes (Max 1 if in both)

Traffic examples

Build by-pass/ring road/one way system/flyover (1)

Exclude heavy vehicles from residential areas (1)

Congestion level charging at peak times of day (1)

Better public transport/bus lanes (1)

Odd/even number plates on different days (1)

Cycle lanes (1)

Car sharing (1)

$$[1 + 1 = 2]$$

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- (d) Must be plausible NEW investigations that could be carried out in the three houses, not those already done in the Question, i.e. NOT any of those listed in Table 2 and Parking/Traffic from Table 4.

Examples of new ideas that are deemed implausible/inappropriate but can get max 2 for how they would carry them out.

Income, employment, health, population structure, type of housing.

Examples of possible ideas OK for max marks = 4.

- Price of houses (1)
- Access for services/shopping (1)
- Safety of an area (1)
- Litter (1)
- Height of buildings (1)

Appropriate methods such as:

- Questionnaire (1)
- House price survey (1)
- Convenience index (1)
- Mark on maps (1)

Credit details of how such a study would be done inc. recording.

[1R + 3 = 4]

[Total: 30 marks]