

**MARK SCHEME for the May/June 2010 question paper**  
**for the guidance of teachers**

**2217 GEOGRAPHY**

**2217/23**

Paper 23 (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.

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**Section A**

- 1 (a)** 997866 [1]
- (b)** NE/ENE  
3000–3200 [2]
- (c)** Size of Block – F = small(er), C = large(r)  
Density of Building – F = low(er), C = high(er)  
Availability of services – F = None/No, C= Many/Yes [3]
- (d)** Sugar plantations  
Water tanks  
Lake/River  
Road Access  
Labour supply  
Flatter land  
Market in/via town [3]
- (e)** Rivers  
Flow to north  
Tributary  
Lake/Pond  
Gently sloping valley  
Conical hill...  
...with steep slopes  
...depression in centre  
Lower in east/slopes down to SE  
Heights 550–700 m  
Max 3 if only 1 of relief/drainage [4]
- (f) (i)** Sugar plantation  
Scattered trees/scrub  
Riverine trees  
Poultry Farm [3]
- (ii)** Road  
Bridge  
Buildings/mosque/settlement  
Cane Tracks  
Dam  
Water tank [3]
- (g)** NW/NNW [1]

**[Total: 20]**

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- 2 (a) Decreases to March  
 Rapid increase March to end of May/start of June  
 Rapid decrease in June and July  
 Levels out in August and September  
 Decreases to end of year [3]
- (b) Low precipitation  
 Frozen precipitation [2]
- (c) (i) February [1]
- (ii) Winter heating  
 Winter lighting [1]
- (iii) Water level falls [1]
- [Total: 8]**
- 3 (a) 10+ storey building  
 City Park  
 On-street parking [3]
- (b) Parkland with grass and trees  
 Grass and trees down middle of road  
 Trees interspersed with buildings [2]
- (c) Large buildings  
 Tall buildings  
 National Museum  
 Lots of pedestrians  
 Lots of traffic  
 High order services/offices and shops (high order)  
 Government buildings [3]
- [Total: 8]**

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- 4 (a) (i) Correct plot on graph [1]
- (ii) Kenya [1]
- (iii) Argentina  
Low [2]
- (b) (i) Correct plot for Japan [1]
- (ii) Sri Lanka primary higher  
Sri Lanka secondary lower  
Sri Lanka tertiary lower [2]
- (c) All live in urban areas [1]
- [Total: 8]**
- 5 (a) (i) Cocoa Beans [1]
- (ii) Indonesia [1]
- (iii) Central and South America [1]
- (iv) 61–62% [1]
- (v) Harvest may fail  
Harvest/supply may be disrupted by war/natural hazard  
Country may increase the price  
Country may sell crop elsewhere [2]
- (b) (i) Good harvest, large supply [1]
- (ii) Prices will increase [1]
- [Total: 8]**

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- 6 (a) (i) Apples, Rice, Tea, Tobacco, Wheat [1]
- (ii) Rice [1]
- (iii) Two of copper, gold, manganese, zinc [1]
- (iv) Forestry [1]
- (b) 600 km [1]
- (c) Towards the south  
 Mostly on the main island  
 Along the coast  
 Very small area in north  
 Around Tokyo [3]

**[Total: 8]**

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### Section B

- 7 (a) (i) Introduction gives no context to questionnaire  
 Q1 is too vague – need town/city/country or is too personal  
 Qs 2 & 3 are irrelevant to hypotheses  
 Q4 repeats idea of Q1/answers won't be accurate  
 Q5 is a closed question and gives no extra information  
 Q6 is negative  
 Q7 is personal  
 Final comment is abrupt/no thanks/informal/impolite/unfriendly  
 No multiple choice alternatives/tick boxes  
 Will have to write down full answers/no space to write answers  
 Difficult to analyse/collate results  
 No question about activities which people did/key question for hypothesis 1  
 Illogical order of questions/age question is last  
 Answers don't need to refer to specific questions in questionnaire
- NOT question is unacceptable – must say why  
 NOT questionnaire is too short [3 @ 1 = 3]
- (ii) Introduction explains who is doing questionnaire & why/friendly  
 Positive introduction – won't take up much time  
 Qs 1, 2 & 3 ask for precise/quick responses/choices for people to tick  
 Qs 4 & 5 are open/positive/ask for opinions  
 Thanks at the end  
 Gender information is recorded without questioning  
 Questions are relevant to hypotheses  
 Answers are easy to collate/graph  
 Can credit opposites to (i)  
 Answers don't need to refer to specific questions in questionnaire
- NOT clear/easy to understand – must say why [2 @ 1 = 2]
- (iii) Simple to organise/clear rationale  
 Reduces bias in sample/fair test  
 Respondents cannot influence each other/discuss answers [2 @ 1 = 2]
- (iv) Lots of people to ask/many people park there  
 In middle of national park so more likely to be used by tourists  
 Accept negative comment about other locations [1]
- (v) Why: People would be better equipped to answer questions about time spent in park/  
 activities/what they liked  
 Waited until people had enjoyed the day's activities
- Disadvantage: People are tired at end of a busy day/cannot be bothered to answer  
 questions  
 People in a rush to set off for home  
 May not get enough answers and too late to do anything about it  
 Will only question people in cars/miss out people who don't come by car [1 + 1 = 2]

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- (b) (i) Bar graph completion – need dividing line & labels (Yes/No)  
Allow tolerance from 72–75 or 22–28 [1]
- (ii) Pie graph – completion 1 mark (4 or 5 days, longer than 5 days)  
Shading/labels in key 1 mark  
Allow 1% tolerance
- (iii) Insert figures for sightseeing:  
5 in 51–65 age group column  
11 in total column  
Both correct for 1 mark [1]
- (iv) Hypothesis is partially/generally true/Yes/age does influence activities – reserve mark  
Physical/lively/active activities are more popular with younger people  
Such as cycling/mountain biking/horse riding/running/jogging  
Less physical/leisurely/relaxed activities are more popular with older people  
Such as sightseeing/driving/visiting historic buildings/shopping/bird watching  
Walking is popular with all age groups, doesn't support hypothesis/exception  
Some activities are popular only with specific age groups – climbing: 21–50/walking  
(over 5 km) not with over 65  
Credit exception such as 2 people under 20 visit historic buildings  
  
No data mark  
NOT 'high risk' activities [4]
- (c) (i) 1 Easy to get to  
2 Scenery  
3 Opportunity to do my favourite activity/Peace & quiet [3 @ 1 = 3]
- (ii) Improvements:  
*New walking routes signposted:* visitors will not get lost/easier to explore  
*More car parks:* not waste time looking for a parking space/not have to walk as far/not need to use public transport/safe and secure  
NOT more visitors  
*Better toilet facilities:* improved visitor comfort/more hygienic/less distance to facilities  
*More cafes and refreshment facilities:* improved visitor comfort/will not go hungry/rest & drink/relax/don't have to bring own food/don't have to leave park to eat  
*More cycling horse riding routes:* planned route to follow/away from traffic  
*More information boards:* visitors can learn about the area  
  
NOT stop people getting lost  
*Improved footpath surfaces:* easier/safer to walk on/less muddy/cleaner [2 @ 1 = 2]
- (iii) Yes true/most visitors do have a positive opinion – reserve mark  
Because; visitors gave examples of activities (Table 3)/opportunity to do favourite activities  
Visitors said what they liked (Table 4) – e.g. peace & quiet  
Visitors gave positive ideas for improvements (Table 5) / no serious problem/complaint  
Most visitors had visited more than once and returned (Table 1)  
Many visitors were staying more than one day (Table 2)  
1 mark maximum on each Table  
Responses only based on one day in one national park/visitors not asked direct question: Do you like/have a positive view of national parks? [3]

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- (d) (i) Where do you live?/nationality  
Where do you come from?  
How far have you travelled to get to the national park?  
How long have you spent travelling to the park? [1]

- (ii) Grouping data/categorise/results table tally chart  
Map / type of graph – bar/pie/divided rectangle/pictogram  
Type of map – choropleth/dot distribution/flow lines/desire lines  
1 mark for each of above ideas if appropriate to question in (i)  
Accept presentation ideas, even if question in (i) is wrong  
  
NOT questionnaire/tick boxes [3]

**[Total: 30]**

- 8 (a) Don't do fieldwork/check conditions if river is in flood/deep/fast-flowing  
Wear strong shoes/wellingtons to protect feet  
Don't do fieldwork alone – at least two preferably three people/group  
Wear waterproofs to keep warm/protective clothing/light clothes which will dry  
Keep a look out for dangerous animals  
Don't do fieldwork if river is badly polluted/don't drink water/Veil's disease  
Tell someone where you are going/take a mobile phone for emergency  
Complete in daylight/before it gets dark  
May be slippery rocks/bank  
  
NOT don't run around/push each other in/swim in river [3 @ 1 = 3]

- (b) (i) Measure section along river  
Time floats over measured section  
Repeat timing exercise at points 1, 2 and 3 across river  
Calculate surface velocity:  $\frac{\text{distance}}{\text{time}}$  [3]

- (ii) Rest rule/ruler on river bed - NOT 'in river'  
Ensure rule is upright/vertical  
Take reading of water surface on rule/measure part of stick which is wet  
  
May suggest string & weigh & tape measure  
Lower string to river bed  
Mark / observe water level on string  
Measure wet section  
  
NOT repetition of measuring across river  
No credit for equipment – must describe its use [3]

- (iii) Velocity is greater near the outer bank of the meander/sample point 3  
Velocity decreases towards the inner bank/sample point 1  
Alternative to above ideas: velocity varies at different points/there are variations in velocity across river/velocity increases from sample point 1 to point 3 – NOT wording of hypothesis  
Velocity is greater where river is deeper/least where river is shallow  
Credit 1 mark (not reserve) for two comparative figures from 18, 41, 72 or difference between them  
No hypothesis mark [2]



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- (c) Only measuring surface velocity  
Measurements could be affected by external influences such as  
– floats get stuck on vegetation  
– strong wind may interfere with movement of float  
Route taken by floats is unpredictable  
Floats all move into main current of river, so not really testing velocity across a meander  
Too few sampling points  
Only taking one measurement at each sampling point/need to do more  
Random positioning of sample points/not equal distances apart
- NOT human error weaknesses such as inaccurate timing/distance measurement [3 @ 1 = 3]
- (d) (i) Put flow meter on the bed of river/into river  
Must be held vertically  
Stand downstream or to the side of the flowmeter  
Propeller must be facing upstream  
Propeller spins/moves  
Record digital reading/display shows velocity  
Take several readings and calculate average
- NOT take measurements at different points in river [3]
- (ii) Completion of 20cm per second isoline  
Minus 1 mark for each error [2]
- (iii) Shading on diagram the area where velocity is greater than 40cm per second [1]
- (iv) Agree/partly agree with hypothesis – reserve mark  
Supporting data – two current measurements: e.g. 40-37-19 cm per second  
But where current is strongest there is exception/hypothesis doesn't apply everywhere across meander  
Here the greatest velocity is at about 1/3 of depth/just under water surface  
Supporting data – two current measurements: e.g. 60-68-70 cm per second  
Then velocity does decrease below 1/3 of depth  
Allow two marks for comparative figures (not reserve) [4]
- (v) Surface velocity is affected by friction with atmosphere  
Velocity near bed/banks of channel reduced by friction with channel  
Greatest velocity is where current is strongest/river is deeper/has most energy
- NOT 'velocity is greater on outside' [2]
- (e) Similarities:  
Greater velocity slightly beneath surface/at surface  
Greater velocity where river is deeper  
Velocity reduces near bed/banks
- Differences:  
Velocity faster in middle of channel on a straight section  
Velocity decreases more evenly towards bed/banks on straight section
- 1 mark reserve for similarity/difference [4]

**[Total: 30]**