UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper

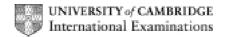# for the guidance of teachers

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 must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the October/November 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

UNIVERSITY *of* CAMBRIDGE
International Examinations

Section A

1 **(a)** **(i)** Wide tarred [1]

(ii) 1016 (m) [1]

(iii) Lake / pan [1]

(iv) Dam [1]

(v) Hill / knoll [1]

(b) **(i)** Track / Cut Line / Game Trail [1]

(ii) Line on Fig. 1 that does not cross through any streams [1]

(c)

Name of feature	Six-figure grid reference	Bearing from Masholomoshe	Distance from Masholomoshe (m)
Aerodrome Landing Area	085880	<u>256–262°</u>	6700
<u>Reservoir / River</u>	192868	122°	4600
<u>Track / Cut line / Game Trail</u>			
Silikwane Dip	204957	38°	<u>8200–8300</u>

[3]

(d) **(i)** Mine Name
Mining / prospecting trench
Mine Dumps
Quarry / excavation [3]

(ii) 0986 / 0987
1086 / 1087
1186
1291 if Quarry in **(d)(i)** [1]

(e) Mainly in the NE
Edge of cultivation
Along (gravel or earth / other) road
Along track / cut line / game trail
Along watersheds
Flat / fairly flat land
Single hut at 092873 / 151872 / 192874 / 112938 [4]

(f) Irrigation scheme in 1990, 1991, 1890, 1891
Reservoir at 190907 [2]

[Total: 20]

2 (a) (i) Correct plot on graph [1]

(ii) Positive relationship [1]

(iii) Singapore [1]

(iv) Russia and Singapore
USA and Australia [1]

(b) (i) Horizontal line within 30–34 age group [1]

(ii) Correct completion of Fig. 3 [1]

(iii) 10–14 [1]

(iv) Females as have greater % in 80+ group (or other appropriate age range) [1]

[Total: 8]

3 (a) (i) Secondary [1]

(ii) Bricks / blocks
Smoke / air pollution / waste [2]

(iii) Mud / clay / soil [1]

(iv) Supply of raw material
Large labour supply [1]

(b) Working by hand / manual
Simple / wooden / hand tools
Labour intensive
Basic construction of chimney
Drying bricks in sun [3]

[Total: 8]

© UCLES 2010

4 (a) Western edge of north / south America (plate)   }
Western edge of the Pacific plate   } Plate boundaries = 1
Northern edge of Indo-Australian plate / Indonesia   }
Two in west of Indian ocean / Madagascar
One in Europe / edge of Eurasian / African plate   [4]

  (b) (i) Constructive / divergent / parting   [1]

      (ii) Nazca and South American   [1]

     (iii) Converging / colliding plates / destructive boundary
Subduction / process described
Melting
Magma / lava rises   [2]

                                                      [Total: 8]

5 (a) (i) 1 for each division
Max 1 if shading wrong   [2]

     (ii) Primary decreases
Secondary increases
Tertiary increases   [3]

  (b) (i) Correct completion of graph   [1]

     (ii) Overall increase
More rapid increase 1992–1993
Stays same 1996–1997
Decrease in 1998   [2]

                                                      [Total: 8]

6 **(a)** Fig. 7A is Harare, Fig. 7B is Marrakesh [1]

(b) Correct temperature
Correct rainfall [2]

(c) 18°C [1]

(d) Cloud cover / lower sunshine hours
High rainfall [1]

(e) **(i)** 10 [1]

(ii) No cloud cover / clear skies
Summer / more daylight hours / sun overhead [2]

[Total: 8]

Section B

7 (a) (i) To ensure consistency of results.
River conditions may change from one day to next.
No variation in the river / to keep the river the same.
Weather conditions may change. [1]

(ii) Accessibility from road / school (Access must be qualified).
Safety – e.g.; strong current (Safety must be qualified).
Equally distant from other investigation sites.
Away from human impact which may affect results.
2 @1 = 2 [2]

(iii) Practise fieldwork techniques.
Test equipment.
Agree methodology to ensure consistency / get the right idea.
2 @ 1 = 2 [2]

(b) (i) <u>Max 2 for either width or depth</u>
Stretch measuring tape / rope across channel from one bank to the other.
Measure across the rope using the tape measure.
Use rule / ruler to measure depth of river.
Rest rule / ruler on river bed.
Measure at regular intervals across river (every 20cm).
Record measurement in metres.
3 @ 1 = 3 [3]

(ii) Completion of cross-section (2 marks) (2 at 0.46; 2.2 at 0.41).
Tolerance for 2 is 0.45 to 0.47; tolerance for 2.2 is 0.42 to below 0.4.
Shade in cross-sectional area (1 mark).
(2 @ 1) + 1 = 3

(iii) 4.4 x 0.23 Figures must be these as they are given (Can reverse)
= 1.01 / or 1.012 sq metres (must have sq. metres or m2).
1 mark for knowing method; 1 mark for correct answer. No other figures are acceptable for either mark.
1 + 1 = 2 [2]

(iv) <u>Must be clear which site/figure referring to; if not = 0. (Site 1 = Fig 2; Site 4 = Fig 3).</u>
<u>Differences must be comparative.</u>
Cross section at Site 1 is more uneven /irregular / Site 4 is smoother
Smaller cross-sectional area at Site 1 / larger at Site 4.
Cross-section is wider at Site 4 / narrower at Site 1
Cross-section is deeper at Site 4 / shallower at Site 1
2 @ 1 = 2 [2]

(v) <u>Can be given the anomaly mark here even if disagree with hypothesis</u>
<u>True/agree</u> for width and cross-sectional area (1) <u>Tick HA Reserve mark</u>
Site 5 or 6 is an anomaly for depth / does not fit general pattern (1)
Width stays same between Sites 4/5 (1)
1 + 1 = 2 [2]

(c) (i) <u>Flow meter</u>: put flow meter below surface/in river (Not on river)
Propeller must be facing upstream
Record / read / take reading
Calculate average

OR

<u>Floats & stopwatch</u>: measure set distance between two points along river.
Float orange / dog biscuit and time over distance.
Repeat several times across river and calculate average.
Calculate velocity by dividing distance by average time.
3 @ 1 = 3   [3]

(ii) <u>If method chosen is same as **(i)** NO MARKS – be careful to check!</u>
<u>Flow meter:</u>
Advantage – accuracy of reading / digital reading / quicker
Disadvantage – expensive / less accurate in low flow conditions / battery may go flat / less easy to buy

OR

<u>Floats & stopwatch</u>:
Advantage – cheap / no specialised equipment needed
Disadvantage – less accurate / takes longer / need to do calculation of velocity / floats affected by wind or vegetation / only measures surface velocity
1 + 1 = 2   [2]

(iii) Plotting points on scatter graph; no tolerance
Site 5 = 0.27 at 1.2
Site 6 = 0.25 at 1.3 - must be in the square
2 @ 1 = 2   [2]

(iv) <u>Hypothesis 2 is true/mostly or partially true/agree = Tick HA (1).</u>
<u>No marks at all if say it is untrue/disagree = X HA. Give 1 for evidence to support Hypothesis and 1 for anomaly.</u>
Agree / Velocity does increase with depth (1) at Sites 1-4 / overall (1) or data evidence (1).
<u>Anomaly mark (1 max)</u>
But velocity at sites 5 & 6 is much greater than would be suggested by graph (1)
But river is deeper at site 5 than site 6 but velocity is greater at site 6 (1)
1 + 1 + 1 = 3   [3]

(d) Sketches of six sites
Photographs of six sites
Annotations to show changing landscape of valley
Measure and record gradient of the bed
Measure cross-profile at the six sites
Describe changes in vegetation <u>DO NOT CREDIT refs to rocks/soil</u>
Describe differences in human activity in the valley
Record dimensions on paper / in a table / make notes (NOT draw graphs during fieldwork).
3 @ 1= 3   [3]

[Total: 30]

8 **(a)** **(i)** Lake / pond (Accept trees due to location of arrow end) [1]

(ii) 332 [1]

(b) <u>Landscape</u>: open / spacious; grass / greenery/vegetation/lawn; water / lake; trees / bushes / hedges / forestry; flat
<u>Buildings</u>: modern; glass / many windows; >1storey; light coloured; low rise.
NOT to accept bridges, roads, blue skies, green as landscape features.
<u>Reserve 1 for each i.e. 3 max on either</u>
(1+3 or 2 + 2 or 3 + 1) = 4 [4]

(c) **(i)** Privacy for company / infringement of copyright
Name not required [1]

(ii) <u>Ignore references to number of employees / size must relate to buildings</u>
Two groups of companies (1)
1 group near an entrance / 1 group away from entrances (1)
1 group north of site / 1 group south of site (1)
1 group near centre of site / 1 group near outskirts (1)
Smaller companies near entrance / Larger companies away from entrances (1)
3 @ 1 = 3 [3]

(iii) Computer / telecommunications sector companies = 7
Total number of companies = 93
<u>No other figures must be credited for either mark</u>
2 @ 1 = 2 [2]

(iv) <u>Pie graph completion (Allow reverse plotting if shading matches it)</u>
1 mark for accurately plotting line at 89 (or 94 if reverse)
1 mark for shading sectors using key in right order
1 + 1 = 2 [2]

(v) Most / 89% / 83/93 of the companies on the industrial estate are in high technology
OR Only 11% other industries (1)
Lots of / 28 or 30% bio-medical OR many / 26 or 28% environmental (1)
2 @ 1 = 2 [2]

(vi) Companies can share information / ideas
Can share research facilities / laboratories / resources / materials **NOT** employees or raw materials
Possible location near to universities
Desire for similar influences e.g. green site, grants, attractive scenery, near road / rail links, cheap land (Transport too vague) (1 max)
3 @ 1 = 3 [3]

(vii) General factors for locating here e.g. cheap land, space for parking (1 max)
Nearby restaurants convenient for meals
High disposable income of local workers
Use gym before / after work
Drop children off at nursery
2 @ 1 = 2 [2]

(d) (i) 2 marks for accurate bars at 30 and 53
2 @ 1 = 2 [2]

(ii) <u>Do not accept questions that have been answered by the table results or questions that might be asked of individuals. Must relate to Hypothesis 2.</u>

Companies in high technology industries need highly skilled or trained employees

<u>**Examples:**</u>
What qualifications do your employees have?
How many of your employees have university degrees?
How much training do your employees undertake?
What particular skills do your employees have?
Why do you need skilled or trained workers?
Do you employ any unskilled workers?
What do your unskilled workers do?
How often does training take place?
3 @ 1 = 3 [3]

(e) Credit fieldwork/practical techniques that are feasible; do not credit references to transport links involving workers and traffic counts

<u>**Good transport links**</u>:
Survey companies – how important are transport links
which types of transport link are most used
location of raw materials / components / markets
Map local / national / international transport links used by companies

OR

<u>**Small quantities of raw materials**</u>:
Survey companies – how important are raw materials / components
which types of raw materials / components are most used
location of raw materials / components
Map of location of raw materials
4 @ 1 = 4 [4]

[Total: 30]