## MARK SCHEME for the May/June 2013 series

## 0460 GEOGRAPHY

0460/22 Paper 2, maximum raw mark 60

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 May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

| Page 2 | Mark Scheme | Syllabus |
| :---: | :---: | :---: |
|  | IGCSE - May/June 2013 | 0460 |

1 (a) (i) 10 m
(ii) $1 \mathrm{~km}^{2}$
more than one answer $=0$
(b) (i) $\mathrm{A} /$ Main $\mathrm{A} / \mathrm{A} 3$
(ii) embankment
(iii) cultivation/plantation
(iv) marsh/swamp
(v) water tank
(vi) bridge
(vii) district (boundary)
more than one answer $=0$
(c)

|  | Pte <br> Moyenne <br> $(8495)$ | La Mecque <br> $(8694)$ | Both these <br> areas | Neither of <br> these areas |
| :--- | :---: | :---: | :---: | :---: |
| coral | $\checkmark$ |  |  |  |
| a river or watercourse |  |  | $\checkmark$ |  |
| a populated area |  | $\checkmark$ |  |  |
| forest |  |  |  | $\checkmark$ |
| gentle slopes |  |  | $\checkmark$ |  |

more than one tick per row $=0$
(d) hilly/hill/high/mountain/upland (don't extract from place name)
steep
cliffs (steep cliffs = 1 )
any height between 400 m and 630 m (allow 446 m as highest point)
ridge/spur
col/saddle/pass
concave slope
V-shaped valley
flatter/gentle in south/in 8991/9091/9191/at poultry farm/at sugar plantation (As alternative to this line allow "steeper in the north".)
(e) (i) 2500-2650 (metres)
(ii) $\mathrm{N} / \mathrm{NNE} / \mathrm{NE}$

Don't allow other expression e.g. "2.3"

2 (a) (i) 8 middle order settlements plotted ignore position, width and shading of bar
(ii) 40
more than 1 tick $=0$
(b) (i) sphere of influence to include the nearby village but not touch any of the other towns (ignore other villages and other sphere of influence)
(ii) other nearby settlements/village/town (but not city) to provide services
low order services/few services/no high(er) order services
services have small range/people won't travel far for services
poor transport links
allow "goods" or "functions" for "services"
(c) (i) frequent use/everyday needs
no need to travel far/they are close/less than $1 \mathrm{~km} / \mathrm{little}$ travel time/cost
(ii) population is small/small settlement/not enough customers
these services have a large(r) threshold population/high(er) order services/ middle order services
(iii) furniture store
airport
(iv) easier transport to $\mathrm{Z} /$ poorer transport to A
better quality at $\mathrm{Z} /$ poorer quality at A
more choice/larger store at $Z /$ poorer choice/smaller store at $A$
cheaper prices at $\mathrm{Z} /$ more expensive prices at A
other services available at $Z$
better reputation at $\mathrm{Z} /$ poorer reputation at A
doesn't need to be comparative - could be solely on X or A
accept best point

| Page $\mathbf{4}$ |  | Mark Scheme | IGCSE - May/June 2013 |
| :--- | :--- | :--- | :--- |
| $\mathbf{3}$ | (a) $\quad$ Erosion: $\quad$waterfall <br> notch $/ V$ cut by stream/path cut by stream (allow other expressions) <br> plunge pool <br> undercut <br> stepped profile (allow terraced) <br> valley at top of photo <br> exposed rocks/lack of soil/lack of vegetation |  |  |

Weathering: harder layers stand out/bedding planes opened/cracks wide(ened)
vegetation growing in cracks/in rocks/on cliff (not just on rocks)/
vegetation shows biological/chemical weathering
fallen/disturbed/loose blocks/boulders/rocks/stones/slabs/layers
reserve one mark for each section no transfer between sections
(b) (i) boulders/large rocks/large stones
different sizes/large and small
rounded/smooth
red/orange/colour variation/coloured altered (but not black)
joints/cracks
layers peel/onion skin effect
don't allow points clearly linked to erosion
(iii) exfoliation
freeze-thaw/frost shattering
any chemical process spoils the answer

4 (a) (i) there are active volcanoes in Africa, Asia, Europe, North America and South America [1]
(ii) there are active volcanoes close to most coastlines of the Pacific Ocean
(iii) most active volcanoes are close to plate boundaries
(b) Laki: plates diverge/constructive margin
hotspot/hot area within mantle
melting/rising magma/magma escapes
All others: plates converge/destructive margin subduction (allow if it is the wrong plate)
melting/rising magma/magma escapes
If volcano chosen not from Fig. 6 MAX 1 - don't allow the first point

| Page 5 | Mark Scheme | Syllabus |
| :---: | :---: | :---: |
|  | IGCSE - May/June 2013 | $\mathbf{0 4 6 0}$ |
| (c) $\quad$eruption of Tambora/Laki/volcano 1/volcano 3/lceland/Indonesia <br> produced ash cloud <br> blocked sun/solar radiation <br> cooling/prevented heading of Earth/atmosphere/land (not just areas) <br>  <br>  <br> lorldwide/affected large area <br> long term/affected whole area |  |  |

worldwide/affected large area
long term/affected whole area

5 (a) Iron ore mines: in south
in east/north-east/near Bay of Bengal
Coal mines: in centre/inland
in east/north-east/near Bay of Bengal
Allow "near Jamshedpur/steel works" once for either section reserve one mark for each section
(b) (i) iron ore from East Singhbhum/Sundargarh/Keonjhar/Durg/1/2/3/4 coal from Jhana/Raniganj/Bokara/Talcher/Bisrampur/Korba 1/2/3/4/5/6 iron ore and coal nearby/within $250 \mathrm{~km} / \mathrm{in}$ north east of country/ surrounded by iron and coal mines
(ii) lake/river/Subamarekha River/Kharkai River
(iii) railway/train
(iv) vehicles/earth moving equipment/metal sheets/cables/pipes/
wire industries 1-5
other industries/local industries

6 (a) large sector $100-102^{\circ}=2$ (independent of key)
large sector $98-104^{\circ}=1$ (independent of key)
correct use of key = 1
(b) strong winds
(c) correct option and explanation required in each case
only one correct option in (i), (ii) and (iii) but either option possible in (iv) reference to wind action $=0$ answer could be by giving a positive reason for the choice or by stating why the alternative was rejected
(i) Leave strips of vegetation between the plots
vegetation will intercept/trap/absorb/protect from rain/water
vegetation will prevent water from flowing/runoff
vegetation will trap/bind/hold/stabilise/keep soil together
Page 6 Mark Scheme $\quad$ Syllabus
(ii) Plough horizontally across the slope of the hillside
prevent water from flowing/prevent runoff/allow water to sink in
(iii) Grow a different crop on each plot for the first three years
retain/replace soil nutrients/minerals different crops use minerals maintain soil structure/humus/organic content
(iv) Fence the land and keep animals away
will prevent animals grazing until soil is bare/prevent overgrazing prevent removal of protective vegetation animals trample/hooves/movement/damage roots old crop will maintain soil structure/minerals/humus/organic content
(v) Allow cattle to graze on the remains of the crop after harvest
dung will maintain the soil structure/humus/organic content dung will replace minerals/nutrients
(for "soil structure" allow phrases like "keeps soil together")

