## GCE

## Geology

Advanced GCE A2 7884
Advanced Subsidiary GCE AS 3884

## Mark Schemes for the Units

## January 2008

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by Examiners. It does not indicate the details of the discussions which took place at an Examiners' meeting before marking commenced.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the Report on the Examination.

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# Advanced GCE Geology (7884) <br> Advanced Subsidiary GCE Geology (3884) 

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## 2831 Global Tectonics and Global Structures1

## ADVICE TO EXAMINERS ON THE ANNOTATION OF SCRIPTS

1. Please ensure that you use the final version of the Mark Scheme. You are advised to destroy all draft versions.
2. Please mark all post-standardisation scripts in red ink. A tick $(\checkmark)$ should be used for each answer judged worthy of a mark. Ticks should be placed as close as possible to the point in the answer where the mark has been awarded. The number of ticks should be the same as the number of marks awarded. If two (or more) responses are required for one mark, use only one tick. Half marks ( $1 / 2$ ) should never be used.
3. The following annotations may be used when marking. No comments should be written on scripts unless they relate directly to the mark scheme. Remember that scripts may be returned to Centres.
$x \quad=$ incorrect response (errors may also be underlined)
$\wedge \quad=$ omission mark
bod = benefit of the doubt (where professional judgement has been used)
ecf = error carried forward (in consequential marking)
con = contradiction (in cases where candidates contradict themselves in the same response)
sf $\quad=$ error in the number of significant figures
4. The marks awarded for each part question should be indicated in the margin provided on the right hand side of the page. The mark total for each question should be ringed at the end of the question, on the right hand side. These totals should be added up to give the final total on the front of the paper.
5. In cases where candidates are required to give a specific number of answers, (e.g. 'give three reasons'), mark the first answer(s) given up to the total number required. Strike through the remainder. In specific cases where this rule cannot be applied, the exact procedure to be used is given in the mark scheme.
6. Correct answers to calculations should gain full credit even if no working is shown, unless otherwise indicated in the mark scheme. (An instruction on the paper to 'Show your working' is to help candidates, who may then gain partial credit even if their final answer is not correct.)
7. Strike through all blank spaces and / or pages in order to give a clear indication that the whole of the script has been considered.
8. An element of professional judgement is required in the marking of any written paper, and candidates may not use the exact words that appear in the mark scheme. If the science is correct and answers the question, then the mark(s) should normally be credited. If you are in doubt about the validity of any answer, contact your Team Leader / Principal Examiner for guidance.


Ocean trench parallel to west coast of S. America / to the East of West Indies
Shallow earthquakes just onshore parallel to west coast of S. America / to the East coast of West Indies

Mountains and volcanoes just inland of shallow earthquakes parallel to west coast of S. America

Volcanoes in W Indies
Island arc in West Indies

1 (a) (ii) 2 arrows correct ( $\mathrm{E}-\mathrm{W} / \mathrm{SW}-\mathrm{NE}$ )

1 (b) (i) Ocean trench
very deep / up to $11 \mathrm{~km} />5 \mathrm{~km} /$ low heat flow /negative gravity anomaly/v shaped and narrow width/top of subduction zone / shallow earthquakes / linear feature parallel to the coast
(ii) Mountain range
folded rocks / deformed rocks / folding reverse faults (thrusts)
regional metamorphism
volcanoes
1,000 ‘s of km long/linear
very high
contain batholiths
many shallow, medium and deep earthquakes
high heat flow / positive gravity anomaly
(iii) Craton

Aseismic / stable
Eroded
mainly metamorphic
Precambrian / very old (qualified) / > 1,000Ma
deformed rocks
intra plate / away from plate margins
Any 2

1(c) (i) From the core / core mantle boundary due to decay of radioactive isotopes remnant from Earth formation
forms as inner core crystallises
forms as earth rotation slows down
Any 1
1 (c) (ii)


12 correct margins
1 for both lithosphere and asthenosphere correct
2
2 correct convection currents in correct direction


1 mark for each correct label
Footwall must be downthrown
2 (a) (ii) 2 correct labels $=1 \quad 1$
2 (b) (i)


Synform shape = 1
asymmetrical = 1
2 (b) (ii) Youngest in core / Oldest on outside
1

2 (c) (i) Strike slip / tear / wrench / dextral
2 (c) (ii) NW side to the left, SE to the right
2 (c) (iii) Slickensides / fault breccias / mylonite (allow cataclasite / fault gouge) / mineral veins / dykes

2 (d) (i)


Cleavage as on diagram parallel to axial plane only in shale Accept fan cleavage in shale

2 (d) (ii) Platy minerals / clays / micas
In incompetent rocks
Aligned
Parallel to fold axial plane $/ 90^{\circ}$ to pressure

2 (d) (iii) Joints as on the diagram only in the sandstone beds $\mathbf{1}$
2 (d) (iv) Tension / stretching at the crest or hinge Tension / stretching causes brittle / fractures in competent rocks

Any 1
Total: 16

| Question$3 \text { (a) (i) }$ | Expected Answers | Marks |
| :---: | :---: | :---: |
|  | Polar wandering curves / concept of either pole moving or continents moving over time |  |
|  | Different readings on different continents |  |
|  | Same readings when continents together / matching rocks with the same inclination in different places |  |
|  | Linked to (palaeo)latitude |  |
|  | Shallow at equator / Steep at poles |  |
|  | As plate moves new rocks gain a different inclination | Any 3 |
| 3 (a) (ii) | State |  |
|  | Liquid / molten / partially molten | 1 |
|  | Composition |  |
|  | Iron / $\mathrm{Ni}, \mathrm{Fe}$ | 1 |
| 3 (b) (i) | Basic rocks / Iron rich minerals / Magnetised when rock cools (below the Curie point) / aligned when rock cools |  |
|  | Sea floor spreading / normal and reverse magnetic stripes |  |
|  | Reversing / flipping magnetic poles / switches |  |
|  | Each pair formed at the MOR at the same time/symmetrical | Any 2 |
| 3 (b) (ii) | Basic / basalt / dolerite / gabbro / mafic / oozes / chert | 1 |
| 3 (c) | Composition: iron and nickel | 1 |
|  | Layer: core | 1 |
|  | Composition: peridotite / silicates | 1 |
|  | Layer: Mantle | 1 |
|  | Composition: Carbonaceous chondrite |  |
|  | Layer: Whole earth composition | 1 |
|  | 2 pairs | 1 |
|  | If mantle and core given as layers then max 1 if not linked to meteorite If 2 correct meteorite names given and not composition then 1 | Max |
| 3 (d) (i) | Mining |  |
|  | Geological mapping/observation of rocks at surface/exposed by erosion and uplift |  |
|  | Surface drilling / boreholes |  |
|  | Not just a single statement. If 2 points listed then max 1 | Any 2 |
| 3 (d) (ii) | A piece of obducted oceanic crust / slab broken off oceanic plate and pushed into continental crust | 1 |
| 3 (d) (iii) | Oozes / chert - sediments formed from plankton deposited |  |
|  | Basalt / pillow lavas - formed from volcanic activity on seafloor (sheeted) dolerite dykes - intrusions below seafloor |  |
|  | gabbro |  |
|  | (layered) gabbro - cooled deep below surface |  |
|  | Layered peridotite |  |
|  | Any 2 if described or list of $4=2$ |  |
|  | List of 2 or $3=1$ | Any 2 |
| 3 (d) (iv) | $7 \mathrm{~km}+/-3 \mathrm{~km}$ (single figure) | 1 |

Question Expected Answers ..... Marks
4 Radon gas levels ..... 1
Tend to increase (prior to earthquake) ..... 1
Released because of (micro)cracks ..... 1
Tilt meters / lasers / stress meters / strain gauges ..... 1
Shows deformation / indicate changes in ground level / changes in distances between two points ..... 1
Due to stress in the ground / strain in rocks ..... 1
Animals have been seen to behave in a strange way ..... 1
Hide / run away / howl ..... 1
Used particularly in China / Haicheng ..... 1
Changes in magnetism affects animals ..... 1
Max 3
Change in electrical conductivity / resistance ..... 1
Conductivity goes up / resistivity goes down ..... 1
(Micro)cracks allow influx of water ..... 1
Seismic gap / recurrence patterns ..... 1
Map earthquakes along a fault / measure timing of historical earthquakes ..... 1
Areas with no earthquakes will have stored stress / areas with a number of earthquakes prone to activity / see when an earthquake is overdue ..... 1
Water levels in wells change / ground water / water table ..... 1
Rises or falls ..... 1
Fractures opening ..... 1
Foreshocks / precursor earthquakes ..... 1
Pattern builds up prior to major earthquake ..... 1
Only gives a short notice ..... 1
None of the techniques are reliable / accurate ..... 1
Often use a combination of techniques ..... 1

Total: 8

## Quality of Written Communication

2 marks (technical terms) Answers are structured clearly and logically, so that the candidate communicates effectively, uses a wide range of specialist terms with precision and spelling, punctuation and grammar are accurate.

1 mark (organisation) There are shortcomings in the structure of the answer, however, the candidate is able to communicate knowledge and ideas adequately, a limited range of specialist terms are used appropriately and spelling, punctuation and grammar are generally accurate with few errors.

0 marks There are severe shortcomings in the organisation and presentation of the answer, leading to a failure to communicate knowledge and ideas. There are significant errors in the use of language, spelling, punctuation and grammar, which makes the candidate's meaning uncertain.

Total: 10

## 2832 The Rock Cycle - Processes and Products

## Question Expected answers

## Marks

1 (a) (i) a deposit of sediments/ formed at the mouth of a river / where a river enters the sea / a lake /an open body of water / where there is a major loss of energy / sea with no currents.
(ii) topset label pointing to horizontal area above / at sea level (to -5 m ); foreset label pointing to sloping area below sea level; bottomset label pointing to horizontal area below sea level three correct= 2
one or two correct= 1
ALT
sequence correct= 1
detail of positions=1

(b) (i) bottomset= shale/ clay/mud/ limestone 1
foreset= fine sandstone 1
topset= coal and seat earth/ channel sandstone 1
(ii) cyclothem 1
(iii) subsidence alt isostatic readjustment due to weight of sediment / emergence of land due to sea level fall or rise of land / changes in sea level / water level / marine transgression / rise of sea level for start of new cycle when sea covers delta top/ regression as sea level falls delta any 2 builds out into sea / prograde / retrograde delta.
ecf if graded bedding in (i)
list $=\max 1$
(iv) equatorial / humid tropical / wet tropical 1
(c) (i) $A=$ sandstone 1
$\mathrm{B}=$ mudstone / clay 1
C= conglomerate 1
(ii) A= sandstone in shallow sea with current action / medium energy/
rapid deposition-poorly sorted and angular fragments;
$B=$ mudstone in sheltered area with no waves or currents / low energy / lagoon / salt marsh / continental shelf / abyssal plain / beach / bottomset / sabhka;
$\mathrm{C}=$ conglomerate on beach / back of beach / high energy / rounding of
grains;
Must be a description. Max 1 for a list. Allow ecf if incorrect rock in (i)

## Question Expected answers <br> Marks

2 (a) lava flows
EFHJLM
Any 4
If incorrect points listed, treat as negative
sills
DLHM Any 2
If incorrect points listed, treat as negative
(b) (i) igneous intrusion / large scale / major intrusion / >100km² / granitic / granite / acid /discordant/ coarse crystals/ plutonic
any 2
(ii) two stages of cooling / large crystals (phenocrysts) form first or form slowly / groundmass forms later or forms quickly
any 2
(iii) phenocryst(s) and finer groundmass drawn;

1
labelling phenocrysts / large crystals / groundmass / suitable scale
any 1

(iv) heat from an intrusion / recrystallises surrounding / alters country rocks / heat transfer by mineralising fluids
(v) size of the igneous body / size of intrusion / larger bodies cool more slowly / composition of magma / acid intrusions contain more volatiles maximum temperature at contact with surrounding rocks/ heat of intrusion
nature of country rock / jointing / dip of contact
list of 3 factors $=3$ or named factor $=1$ with detail $=1$

## Question Expected answers

## Marks

3 (a) (i) moderate risk=N or R
high risk=P
1
(ii) proximity to vent / downwind / larger particles deposited nearer to vent / ash blown from east to west. ecf
any 2
(iii) product= bombs / blocks / agglomerate / lapilli / volcanic breccia / lava dome / lava
explanation= larger fragments fall nearest to vent / large fragments fall vertically/ high viscosity lava found near the vent/ does not flow far
(iv) surveys to map pattern of earlier flows / topography / historical analysis of similar eruptions / monitoring prevailing wind strength / direction / viscosity of flows
(b) burial areas in the region of $>4 \mathrm{~kb}$ and $\angle 200^{\circ} \mathrm{C}$ thermal areas in the region of $<2 \mathrm{~kb}$ and $>150-200^{\circ} \mathrm{C}$ regional areas in the region of $>2 \mathrm{~kb}$ and $>150-200^{\circ} \mathrm{C}$


ALT
broad areas correct (burial high pressure, thermal high temperature, regional area in between) $=1$ mark
(c) line 1= metaquartzite / quartzite
line 2= limestone / chalk; 1
calcite / calcium carbonate
line 3= regional; $\quad 1$
schist 1
water transport / river channel / steep gradients/ very high energy / transported short distance/ transport coarse grained fragments / conglomerates form in the streams
rapid deposition / flow that dried up / occasional flow / ephemeral / flash flood / grains may be sub rounded if transported on several occasions / grains briefly transported may be angular / red coating of oxidised iron
steep sided channel / box canyon / sediment deposited at foot of mountains / form alluvial fans
dune sandstones
wind blown / aeolian / wind transported / fine sand / $0.125 / 0.25 \mathrm{~mm}$ dia / affected by attrition / very well sorted / very well rounded / high sphericity / frosted surfaces of the grains are due to attrition/ red coating of oxidised iron allow once only
deposited on the lee side / downwind / sheltered area / where wind velocity reduced / sand grains avalanche down lee slope
barchan / seif/ transverse / longitudinal / sand sheet / migrating dune
any 2

## evaporites in playa lakes

stream water flowing into the lakes contains ions in solution / minerals precipitate in order of insolubility / reverse order of solubility
evaporation of water leads to saturation (of salts) / water evaporates in the hot sun / dissolved ions become more concentrated
calcite in outer zone, gypsum in middle zone and halite in centre diagrams marked as text diagrams (dune, playa lake, wadi, alluvial fan, sequence of salts) are generally accurate with few errors.
0 marks There are severe shortcomings in the organisation and presentation of the answer, leading to a failure to communicate knowledge and ideas. There are significant errors in the use of language, spelling, punctuation and grammar which makes the candidate's meaning uncertain.

## 2834 Palaeontology

## Question Expected answers

## Marks

1 (a) (i)

| fossil | fossil group |
| :--- | :--- |
| A | ammonite |
| B | ceratite |
| C | nautiloid / goniatite |
| D | coral |

1 mark per row
(ii) 1 protoconch

2 septum
3 dissepiments 1
3 dissepiments 1
4 columella / axial structure / axial column 1
(iii)

| temperature of water ${ }^{\circ} \mathrm{C}$ ) | 20 | 33 |  |
| :---: | :---: | :---: | :---: |
| salinity (parts per thousand) | 35 | 45 | 55 |
| water depth (m) | 15 | 75 | 150 |

1 mark per row
(iv) don't grow as well outside these parameters / ideas about adaptation; ideas about seasonal changes;
symbiotic relationship (coral and algae);
increase temperature kills algae;
corals bleached;
rate of carbonate precipitation dependent on water temperature;
increase in temperature causes the salinity to increase and coral death;
increase in temperature changes ocean current and affects food
Any 2
supplies;
general link between temperature and death of coral max 1
(v) $30^{\circ} \mathrm{N}$ or S of equator / tropical / equatorial
(b) $1.5 \times 100000=150000$

150000 divided by 1000
both parts needed for 1
150m
1 mark for correct answer, 1 mark for working
(c) organism buried in sediment;
original material dissolved by percolating groundwaters;
void may be filled;
fracture along weaknesses reveals external mould;
external mould is the shape of the original organism;
Any 3
max 2 if no diagrams and mark diagrams as text

Question Expected answers Marks
2 (a) (i) Echinoderm / Echinodermata 1
(ii) five fold symmetry; tube feet; composed of calcite; made up of plates; water vascular system;
(b)

| morphological <br> feature | description or function |
| ---: | ---: |
| tubercle | allows attachment of |
| spines |  |$|$| columnal | supports the animal |
| ---: | ---: |
| labrum | lip that protrudes <br> underneath the mouth |
| holdfast | allows attachment to <br> the substrate |

1 mark for each correct line
(c)(i) recognisable diagram 1
body chamber / siphonal canal / outer lip / inner lip / whorl /
columella / suture / ornament / apical angle / apex / spire / aperture / ribs / growth lines
Any 3
(ii) sinistral / dextral / helical / planispiral / conispiral dependent upon diagram in (i) above allow ecf
(iii) muscular foot / gills / calcium carbonate shell secreted by mantle / mantle extends into a siphon
Question Expected answers ..... Marks
3 (a) (i) J graptolite / graptolithina / graptoloidea ..... 1
K belemnite / coleoid
(ii) nektonic or AW / jet propulsion / squirting ink sac / predator / tentacles to catch prey / tentacles for swimming / jaws to eat prey
ecf from (i) for 1 mark
(b) terrestrial (non marine)assemblage

## describe

plants / trees / leaves / correct fossils eg insects in amber or tar/ land species / footprints / other trace fossil;
must give at least two organisms that could be found together

## explain

fragmented (during transport) in sediments / lived on land / washed into rivers / deltaic / tar pit / amber /any reasonable answer

## deep marine assemblage

describe
thin shells / unornamented / not ribbed / correct fossils / graptolites / planktonic trilobites / named organisms that lived in the water column I microfossils;
must give at least two organisms that could be found together

## explain

not high energy / no need for reinforcement of shells/ low diversity/ bottom anoxic / organisms may fall out of water column on death;
(c) (i) silicification
original material dissolved / removed;
silica (in ground water) permeates skeleton;
silica deposited out of solution;
atom by atom replacement of original material by silica
carbonisation
heat and / or pressure;
removal of volatiles / gases;
carbon imprint left / enrichment of carbon
(ii) soft parts may be preserved along with well known hard parts; soft parts in previously unknown animals preserved;
burial in fine sediment / clay;
increased detail of hard parts;
buried quickly / submarine avalanche / obrution deposit /
lagerstatten;
oxygen excluded / anaerobic;
Any 4
no bacterial decay;
no scavengers

Question Expected answers
4 (a) (i) arthropoda / arthropod 1
(ii) infaunal 1
(iii) micropygous
(iv) genal spine defence / protection; snowshoe effect; no sinking; surface area ideas; allows animal to live in soft sediment

Any 2
wide cephalon
snowshoe effect;
no sinking;
surface area ideas;
used as shovel to dig (shallow) burrows in soft sediment;
plough through sediment;
allows animal to live in soft sediment
housed sensory hairs / detect environment
Any 2
fat filled glabella
increased buoyancy / fat is low density;
flotation device;
allows to live in water column
Any 2
(b) at surface of sediment / on sea floor / reference to trace fossils / one pair of legs per segment / move appendages / jointed appendages / walk / crawl
(c) (i) changes in morphology or behaviour;
changes over time;
results of mutation;
survival of fittest; adaptation / changes to new environment; selection pressure / geographical isolation;

Any 3
suitable example = 1 mark;
explanation of example $=1$ mark
(ii) ammonite / Irregular echinoid / Micraster
(iii) easily extracted / numerous / often well preserved / widespread / small size and so found whole / rapidly evolving
Question Expected answers ..... Marks
5 (a) bivalves equal sized valves / left and right / equivalve ..... 1
brachiopods larger pedicle / ventral valve ..... 1
symmetry along hinge line in bivalves ..... 1
symmetry along median line in brachiopods / AW ..... 1
brachiopod pedicle valve has pedicle foramen ..... 1
dentition different ..... 1
detail of different dentition described ..... 1
muscle scars in different positions ..... 1
adductor and diductor muscle scars in brachiopods ..... 1
brachiopods may have a cardinal process ..... 1
adductor muscle scars only in bivalves ..... 1
brachiopods feed via a lophophore / sticky cilia ..... 1
brachidium in brachiopods ..... 1
bivalves feed via siphons ..... 1
bivalves have a pallial line ..... 1
bivalves have a pallial sinus ..... 1
bivalves can have a muscular foot ..... 1
bivalves have a ligament to open valve ..... 1
attachment to rocks via pedicle in brachiopods ..... 1
pedicle a muscle that can rotate position in water ..... 1
attachment to rocks via byssus / cement in bivalves ..... 1
bivalves may have a gape ..... 1
brachiopods may have a zigzag commisure ..... 1
brachiopods marine only / bivalves may be non marine ..... 1
planes of symmetry diagram ..... 1
differences in muscles diagram ..... 1
suitable diagrams to illustrate differences ..... Max 4no diagrams Max 8no credit for similarities described
Question Expected answers Marks5 (b) way up criteriasuitable example (eg desiccation cracks, rootlets, burrows, grading,sole structures, pillow lavas)1
explanation of how upper is distinguished from lower ..... 1
description of the age relationship ..... 1
suitable diagrams to illustrate ..... 1
diagram has labels showing younger and older rocks ..... 1
included fragments
suitable example (eg xenolith, inclusion, derived fossil, conglomerate) ..... 1
description of the age relationship ..... 1
explanation why fragment is older ..... 1
suitable diagram to illustrate ..... 1
diagram has labels showing younger and older rocks ..... 1Max 5
cross cutting relationships
suitable example (eg dyke, unconformity, cross bedding) ..... 1
description of the relationship ..... 1
explanation why cross cut rock is older ora ..... 1
suitable diagram to illustrate ..... 1
diagram has labels showing younger and older rocks ..... 1
Max 5
no diagramsMax 9no credit for similarities described

## QWC

2 marks | Answers are structured clearly and logically, so that the candidate |
| :--- |
| communicates effectively, uses a wide range of specialist terms with precision |
| and spelling, punctuation and grammar are accurate. |

1 mark $\quad$| There are shortcomings in the structure of the answer, however, the candidate |
| :--- |
| is able to communicate knowledge and ideas adequately, a limited range of |
| specialist terms are used appropriately and spelling, punctuation and grammar |
| are generally accurate with few errors. |
| There are severe shortcomings in the organisation and presentation of the |
| answer, leading to a failure to communicate knowledge and ideas. There are |
| significant errors in the use of language, spelling, punctuation and grammar |
| which makes the candidate's meaning uncertain. |

quality of written communication

## Grade Thresholds

Advanced GCE (Geology) $(3884,7884)$
January 2008 Examination Series
Unit Threshold Marks

| Unit |  | Maximum <br> Mark | A | B | C | D | E | U |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{2 8 3 1}$ | Raw | 60 | 43 | 38 | 33 | 28 | 23 | 0 |
|  | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |
| $\mathbf{2 8 3 2}$ | Raw | 60 | 44 | 38 | 32 | 27 | 22 | 0 |
|  | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |
| $\mathbf{2 8 3 4}$ | Raw | 90 | 72 | 65 | 58 | 51 | 44 | 0 |
|  | UMS | 90 | 72 | 63 | 54 | 45 | 36 | 0 |

## Specification Aggregation Results

Overall threshold marks in UMS (i.e. after conversion of raw marks to uniform marks)

|  | Maximum <br> Mark | A | B | C | D | E | U |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 8 8 4}$ | 300 | 240 | 210 | 180 | 150 | 120 | 0 |
| $\mathbf{7 8 8 4}$ | 600 | 480 | 420 | 360 | 300 | 240 | 0 |

The cumulative percentage of candidates awarded each grade was as follows:

|  | A | B | C | D | E | $\mathbf{U}$ | Total Number of <br> Candidates |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{3 8 8 4}$ | 6.7 | 26.7 | 53.3 | 73.3 | 93.3 | 100.0 | 15 |
| $\mathbf{7 8 8 4}$ | 0.0 | 50.0 | 100.0 | 100.0 | 100.0 | 100.0 | 4 |

## 19 candidates aggregated this series

For a description of how UMS marks are calculated see:
http://www.ocr.org.uk/learners/ums results.html
Statistics are correct at the time of publication.

## INSET events for new GCE Geology

## - for first teaching from September 2008

Get Started - towards successful delivery of the new specification.
These new full day courses will give guidance and support to those planning to deliver the new AS/A level Geology (H087/H487) specification from September 2008.

## Course dates and codes -

Friday 16 May London GCLE301
Wed 21 May Birmingham CGLE 302
Thurs 5 June Bristol CGLE 303
MON 23 June Leeds CGLE 304
Fee - $£ 130$ including refreshments, lunch and course materials. $£ 160$ if you book within 7 days of the course date.

There will be some similarity to the half day Get Ready course already held but this full day course will look at the new specification in more depth, with emphasis on first delivery.

Places may be booked on these courses using the booking form available on-line (http://www.ocr.org.uk/training/alevel_inset_training.html). Please quote the course code in any correspondence.

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