OCR
RECOGNISING ACHIEVEMENT

GCE

Geology

Advanced GCE **A2 7884**

Advanced Subsidiary GCE **AS 3884**

Mark Schemes for the Units

January 2007

3884/7884/MS/R/07J

Oxford Cambridge and RSA Examinations

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Advanced Subsidiary GCE Geology (3884)

MARK SCHEMES FOR THE UNITS

Mark Scheme 2831
January 2007

Abbreviations, annotations and conventions used in the Mark Scheme	/	= alternative and acceptable answers for the same marking point
	;	= separates marking points
	NOT	= answers which are not worthy of credit
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	ecf	= error carried forward
	AW	= alternative wording
	ora	= or reverse argument

Question **Expected Answers** **Marks**

1(a) (i) – (vi)

feature	appropriate letter **A - H**
Gutenberg discontinuity	**D**
Inner Core	**A**
Lower Mantle	**E**
Low Velocity Zone (Asthenosphere)	**F**
Mohorovicic discontinuity	**G**
The Crust	**H**

6

1(b) Changes in seismic wave velocities/changes in travel time/discussion of travel time
Reflection/refraction/of seismic waves
S waves stop at outer core (Taylor-Gutenberg)/P-waves slow down/seismic shadow zones
P wave velocity controlled by incompressibility/S waves by rigidity
Any 2 — 2

1 (c)

	Physical state	Composition (rock type or chemical composition)
Lower mantle		ultrabasic/silica and oxides/any suitable mineral/dense silicate/Fe, Mg silicate/perovskite/spinel/pericLase(peridotite)
Inner core	solid	Ni and Fe
Asthenosphere	(5%) partially melted/ rheid/plastic	

4

1(d) Iron meteorites density 10 – 15/iron meteorites very dense/Fe and Ni
Whole Earth 5.5 +/-0.5/gravity and earth volume allows av density to be calculated
surface 2.7 – 3.0/mantle 3.3/therefore material at depth is denser
core is more dense than any other layer max 1 — Any 2

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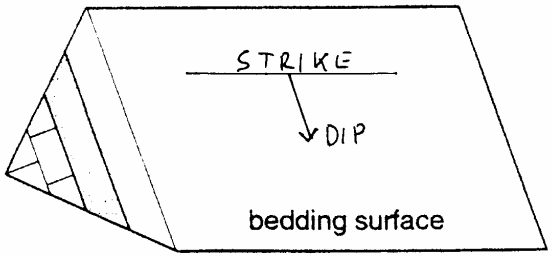
1 (e) (i)



2

1 mark for each correct label. No labels max 1

1(e) (ii) A horizontal line on a (planar) surface/line 90° to the dip 1

1 (e) (iii) The maximum angle of inclination on a (planar) surface/line at right angle to strike 1

Total: 18

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Question	Expected Answers	Marks
2 (a) (i)	Stress/pressure/energy builds up Energy is stored/ground strained/ground deforms elastically/plastically Rock cannot take the strain/stress and fractures/Fracture occurs to produce a fault/stress exceeds max strength of rock/elastic limit and fractures/faults/brittle deformation Stress/pressure/energy is released forming earthquake/Elastic rebound	Any 3
2 (a) (ii)	Seismometer/seismograph	1
2 (a) (iii)	seismogram	1
2 (b) (i)	Amplitude of the seismic waves Distance from focus/epicentre/distance travelled/lag time	1 1
2 (b) (ii)	Richter scale	1
2 (b) (iii)	Based on observations of damage/effects caused (allow alternative wording)/uses the Mercalli scale	1
2(b) (iv)	Solid or unconsolidated ground/nature of the ground/rock type/saturated v unsaturated/ground stability Type of the building construction/strength of building/depth of foundation/earthquake proofing	1 1
2 (c) (i)	Point where the fault actually occurs/point where seismic waves originate/energy released/point below surface where earthquake takes place	1

2(c) (ii)

	feature	shallow foci only	shallow to deep foci	aseismic	
	continental shields			✓	
	subduction zones		✓		
	Mid Ocean Ridges	✓			
	ocean basins			✓	

1 mark for each correct answer 4

Total: 16

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Question **Expected Answers** **Marks**

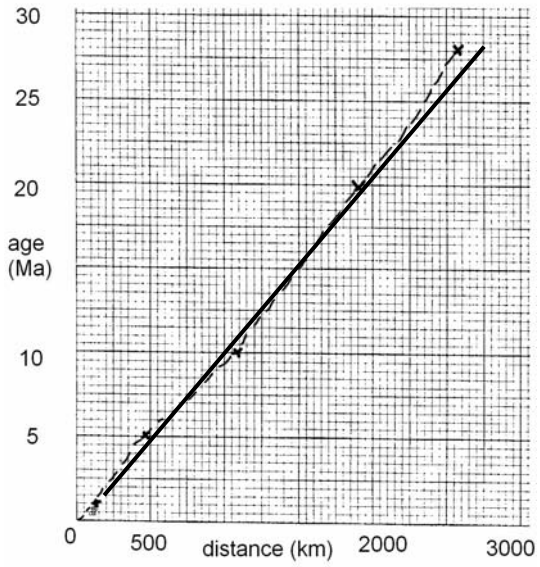
3(a) (i)

Location	Average age of the rocks/Ma	Distance from Hawaii (Km)
Hawaii	0	0
Maui	1	140
Kauai	5	470 - 510
Necker	10	1050 - 1110
Laysan	20	1860 - 1940
Midway	28	2530 - 2630

3 – 4 correct = 2
1 – 2 correct = 1

2

3(a) (ii)



ecf
axes = 1
all points correct = 1
line of best fit (straight line) correct = 1

3

3(a) (iii) 9.2 cm/year +/- 0.2 cm/year ecf 1
working shown 1
if answer incorrect but correct method = 1

3(b) (i) Area on the surface above a mantle/magma plume
Intraplate (alternative wording)
Hot spot stays in same geographical location/fixed point

Any 2

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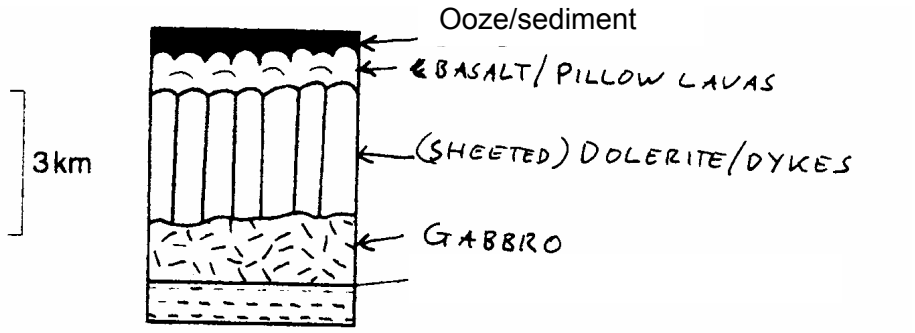
3(b) (ii) Hot spot stays in the same geographical location but the plate moves
Volcanoes form (islands)
Leaves a trail of increasingly old volcanic islands/Direction of plate movement is in direction of young to old islands/volcanoes become extinct and new ones form
Credit diagram
Any 2

3 (c) (i)



2 correct labels = 1
3 – 4 correct labels = 2
Diagram (must have at least 1 appropriate symbol) = 1
3

3 (c) (ii) Magnetic reversals
Igneous rocks are magnetised at the MOR/constructive plate boundary
Sea floor spreads equally in each direction/symmetrical
Magnetic minerals/iron aligns/fixed below Curie point
Any 2

Total: 16

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Question	Expected Answers	Marks
4	Joint is a fracture in a rock with no relative movement	1
	Tectonic joints	
	Labelled accurate diagram	1
	Fractures due to extension/extension around a fold hinge	1
	Cross-joints (90°) to fold axis/shear at (45°) to fold axis/oblique joints	1
	Occur in competent rocks/appropriate rock type (limestone/sandstone)	1
		max 2
	Cooling joints	
	Labelled accurate diagram	1
	Caused by contraction (inwards) of magma/lava as it cools	1
	Forms hexagons/polygons	1
	90° to cooling surface	1
		max 2
	Unloading joints/pressure release	
	Labelled accurate diagram	1
	Occur as erosion removes rocks/rocks uplifted	1
	Rock expands/dilates	1
	Joints parallel to the erosion surface	1
		max 2
	Angular unconformity	
	Accurate diagram	1
	Beds above and below the unconformity dipping at different angles	1
	Unconformity represents a time gap	1
	Explanation of development	max 3
	Max 6 if no diagrams	
		Total: 8

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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.

[quality of written communication max 2]

Total: 10

Mark Scheme 2832
January 2007

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Question	Expected answers	Marks
1 (a) (i)	A= basic/basalt/basaltic	
	B= intermediate/acid/andesitic/granitic/rhyolite	
	C= basic/basalt/basaltic/pillow	
	D= intermediate/acid/andesitic/granitic/rhyolite	
	one or two correct=	1
	three or four correct=	2
(ii)	C= the crust is thin/~5km thick mantle is close to surface/asthenosphere is nearer the surface/*magma chamber near surface/*rising convection currents/magma rising in axial rift in centre of MOR/temperature stays constant but pressure falls/ crust is fractured/tension causes fractures/*fissure/*plates diverging*/sea floor spreading/crust moves apart*	any 2
	D= subduction and melting of oceanic crust water lowers melting point of subducted rocks friction between plates generates heat causing melting/melting at base of continental crust/magmas rise due to low density/mixing of magmas.	any 2
(b)	from top to bottom on the diagram, the correct labels are sedimentary metamorphic igneous	
	three correct=	2
	one correct=	1
(c)	from top to bottom in the table, the correct terms are	
	igneous/ultrabasic/peridotite	1
	sedimentary	1
	metamorphic	1
(d) (i)	mineral = a naturally occurring chemical compound/ crystalline substance that occurs naturally/ Earth material with a definite chemical composition;	any 1
	rock = an aggregate of minerals/a mixture of minerals.	any 1
(ii)	igneous=vesicular texture/*gas bubbles/amygdaloidal/*glassy texture/random arrangement of crystals/porphyritic texture/xenoliths	any 1
	metamorphic= slaty cleavage/crystals have preferred alignment/ foliation/*banding/*appears to have a 'grain' like wood/sugary texture/ different minerals/correct minerals named.	any 1
(iii)	sedimentary= fragmental/bedding/layers/fossils/*clasts*	any 1
	igneous= crystalline/vesicular texture/glassy texture.	any 1
	ALT if two valid statements made for one class in parts (ii) or (iii) and statement 'not in other class' max 2 each	
		17

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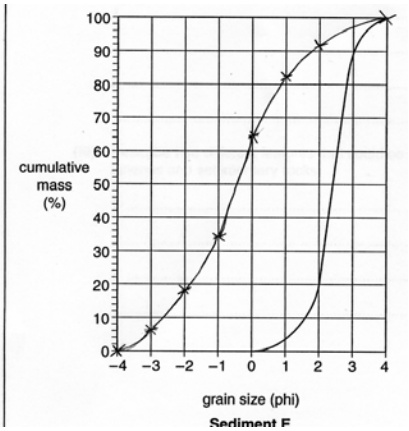
Question **Expected answers** **Marks**

2 (a) (i)



phi	mass %	cumulative
-4	0	0
-3	6	6
-2	12	18
-1	16	34
0	30	64
1	18	82
2	9	91
3	6	97
4	3	100

correct completion of cumulative mass 1
all points plotted correctly/ecf if calculation wrong and plotted those points 1
joined with a smooth *'s' shaped* curve 1

(ii) wind blown/aeolian/wind transported/because well sorted/ dune(any named type)/sand sheet/sand drift; on the lee side/downwind/sheltered area/where wind velocity reduced any 2

(iii) water transport/*stream*/river channel/because poorly sorted/ rapid deposition/channel that dried up/flash flood/occasional flow/wadi/box canyon/alluvial fan. any 2

(b)(i) calcite in outer zone, gypsum in middle zone and halite in centre/ 2
only gives one correct location. 1

(ii) outer (calcite) zone shaded 1

(c)(i) chemical weathering/carbonation/solution/hydrolysis 1

(ii) solution 1

(iii) clay/<0.0039mm/silt/0.0039-0.0625mm/fine sediment/mud/windblown loess. any 1

(d) diagram to show desiccation cracks; 1
as lake dries up sediment exposed to the atmosphere/surface loses water due to evaporation/surface dries up/contraction of surface causes polygonal cracks/in section cracks narrow downwards/sand infills cracks.
diagram marked as text any 3
accept discussion of salt pseudomorphs.

17

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Question	Expected answers	Marks
3 (a) (i)	lava/lava flow/*named lava/pahoehoe/*pyroclastic flow/ignimbrite	1
(ii)	crater/vent	1
(iii)	solid particle/fragment/bomb/lapilli/ash;	1
	blasted/ejected/erupted from a volcano/from volcanic explosion	1
(iv)	bombs/blocks/grain size coarser/larger/bigger near to X;	1
	lapilli/finer/smaller/ash/tuff/finest nearer to Y	1
	ALT larger at X than at Y max 1	
(v)	larger (bomb, block, agglomerate) pyroclasts fall nearest crater due to their greater mass intermediate size (lapilli) blasted further due to lower mass smallest (ash, tuff) carried by escaping gases/transported by wind so travel further	any 2
(b)	volcano is supported by magma in chamber beneath/ violent eruption/magma level in the chamber drops/ magma chamber not full/partly empty/there is a cavity/void/space/ unsupported volcano collapses into void left by magma cone/top/falls into space below.	any 2
(c) (i)	dated by radiometric methods/historic records/word of mouth/ time interval between events can be deduced/extrapolation/estimate of time before next event possible	any 2
(ii)	detected by surveying equipment/levels/tiltmeters/aerial photographs/ satellites/lasers and computers/ magma rises towards surface/rises due to lower density/ ground level affected by rising magma/indicates eruption imminent	any 2
(iii)	detected using seismographs/seismometers/many small scale earthquakes <3 Richter/ magma rising/moving up/in pipe/vent the liquid vibrates/ harmonic tremor/eruption about to occur/prior to eruption	any 2
		16

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Question	Expected answers	Marks
4	high temperature intrusions produce large crystals in surrounding metamorphic rocks/recrystallisation	1
	country rocks near to contact with igneous rocks have coarser/larger crystal grain size	1
	minor intrusions/dykes/sills have narrow zones of metamorphic rocks/baked zones/bleached zones adjacent to them	1
	large intrusions may metamorphose several km of surrounding/country rock/metamorphic aureole	1
	different intensities of metamorphism result in a different metamorphic grade/different index minerals	1
	shale	
	shales showing first signs of alteration become spotted	1
	minerals in the spots include chlorite, mica, quartz, hematite	1
	nearer to the intrusion andalusite/chiastolite form/porphyroblastic	1
	new minerals include biotite/andalusite/cordierite	1
	next to the intrusion hornfels forms	1
	conchoidal fracture in hornfels/medium to fine grained hornfels/*granoblastic texture*	1
	limestone	
	limestone recrystallizes to form marble/marble has sugary/saccharoidal texture	1
	crystals are interlocking	1
	impurities in limestones metamorphose to form new minerals	1
	fossils may be destroyed	1
	fossils may be visible as ‘ghosts’	1
	diagrams marked as text	1
	clear labelled diagram	1
	If only shale or only limestone considered max 7	
		8

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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 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.

quality of written communication max 2

Question total **10**

Mark Scheme 2834
January 2007

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	___	=	(underlining) key words which **must** be used to gain
	ecf	=	credit
	AW	=	error carried forward
	ora	=	alternative wording
	wwr	=	or reverse argument
	bod	=	wrong way round
	^	=	benefit of doubt
			essential detail missing

Question	Expected answers	Marks
1 (a) (i)	A = Gastropod/Gastropoda;	1
	B = Crinoid/Echinoderm;	1
	C = Bivalve;	1
	D = Coral/Cnidaria/Anthozoa/Rugose/Scleractinian Do not accept Tabulate;	1
	E = Irregular echinoid	1
(ii)	recognisable diagram;	1
	two relevant labels from apex, apical angle, spire, whorl, growth lines, siphonal canal, rib, suture, inner lip, outer lip, aperture, body chamber, columella, sinistral or dextral coiling	any 2
	ecf from (i) = 2 max	
(iii)	Similarities both are Echinoderms (do not accept if Echinoderm named for (a) (i) B)/composed of plates/calcite skeletons/tests/endoskeleton/have cilia generating currents/pore pairs/tube feet/mouth and anus/water vascular system/ accept any correct named morphological feature they both have	any 1
	Differences B has arms (brachia), E does not/E has a plastron, B does not/B has a stem/roots/holdfast, E does not/E has spines, B does not/B has radial symmetry, E has bilateral symmetry/ accept any correct named morphological feature that one has and the other doesn't must compare B and E	any 1
(iv)	B = sessile	1
	C = burrower	1
	D = sessile	1
	E = burrower/vagrant	1
	allow ecf from (i)	
(b) (i)	1.25 x 500,000 = (625000mm)	1
	625m	1
	If correct answer given award 2 marks	
(ii)	erosion/change of environment/change of sea level/isostatic changes/eustatic changes/environmental factors affect growth/tectonic movement/subsidence/requires rate of growth to equal rate of subsidence/growth is limited by depth of wave base	any 1
		17

Question	Expected answers	Marks
2 (a) (i)	scleroprotein/protein/carbon	1
(ii)	planktonic/pelagic/(possibly) nektonic (may use cilia to swim); lived as colony; filter feeders; some attached to external float in water column (eg seaweed); may have had own floatation device/may have been fat filled/may have adjusted buoyancy by secreting oil and gas in tissues; may have been able to move downwards in spiral/corkscrew motion	any 3
(iii)	rapid evolution/short (stratigraphic) time range (for each genus)/lots of different forms throughout Ordovician and Silurian; easy to identify/easily identifiable morphological changes; geographically widespread as planktonic/pelagic/nektonic; abundant so more likely to be preserved/more likely to be found; found in deep water/not facies dependant so more likely to be preserved/more likely to be found; resistant to alteration so more likely to be preserved list of 2 = max 1 list of 3 = max 2	any 3
(iv)	goniatites/trilobites/corals do not accept scleractinian coral	1
(b) (i)	recognisable drawing of typical Ordovician type such as <u>Tetragraptus</u>, <u>Didymograptus</u>, <u>Dicellograptus</u>, or <u>Dicranograptus</u>; do not accept dendroid	1
	correctly named Ordovician genus for diagram/ any three correct labels from rhabdosome/sicula/virgella/nema/common canal/theca/aperture/stipe/attitude of stipes correctly named if <u>Monograptus</u> drawn max 2 for labels	any 3
(ii)	had fewer stipes; change from pendant to scandent; thecal variation/more complex thecae/change to isolated thecae; change from uniserial to biserial (back to uniserial)	any 2
(c) (i)	eroded out of original rock; redeposited in a younger rock	1 1
(ii)	graptolites are fragile/break easily on death; may be scavenged; often fossilised by carbonisation; may be eroded/transported and be destroyed; burial or metamorphism destroys graptolite	any 2
		18

Question	Expected answers	Marks
3 (a) (i)	Cephalopod/Cephalopoda	1
(ii)	1 = protoconch/umbilicus; 2 = guard; 3 = ribs/ornament/growth lines/accept septa 4 = suture/lobe	1 1 1 1
(iii)	adjusting buoyancy allows vertical movement; chambers filled with gas/fluid/water (for buoyancy)/gas/fluid/water levels in chambers adjusted via siphuncle; jet propulsion/backwards movement/squirting of water; use of funnel/hyponome; swimming/walking using tentacles; heteromorphs adapted for bottom dwelling	any 3
(b)	J = nautiloid/goniatite; L = ammonite recognisable internal drawing of J; recognisable internal drawing of L; septal necks retrosiphonate/pointing to protoconch in J; septal necks prosiphonate/pointing to body chamber/aperture in L; siphuncle central in J and eccentric/near to venter in L; both J and L have chambers/septa/septal necks/siphuncle	any 4
	diagrams/descriptions of simple suture line in J and complex suture line in L = max 1 labelled diagrams of correct internal morphological features = max 1 mark labels as text	
(c) (i)	N = bivalve O = ammonite P = brachiopod Q = trilobite 4 correct = 3 marks, 3 correct = 2 marks, 2 correct = 1 mark	max 3
		15

Question	Expected answers	Marks
4 (a) (i)	1 solid line joining from top to top and 1 solid line joining from bottom to bottom of one identical fossil horizon/ accept 2 solid lines joining identical fossil horizons (lines may be from borehole to borehole or from index species to index species) do not accept less than or more than 2 solid lines	1
(ii)	biostratigraphy is correlation using (zone) fossils; correlation is done by first appearance/last appearance/range of individual fossils; identical fossils should be found in rocks of the same age; there are identical rootlets/gastropods in the two boreholes so can be used; there is more than one species of ammonite so not a good choice; only one borehole contains brachiopods/bivalves so not a good choice; fossils may inhabit different environments/may be found in different rocks of the same age	any 2
(iii)	2 dashed lines joining top and bottom of ash band/ accept 1 dashed line joining ash band, ignore other dashed lines do not accept more than 2 dashed lines	1
(iv)	chronostratigraphy is correlation by an event; gives absolute age/age in millions of years/rocks are datable/contain minerals that can be used for radiometric dating; ash horizons are suitable/ash fall is an instantaneous/short-lived event; ash coming from one eruption covers a large area; ash from one eruption has the same composition (so can be identified)	any 2
(b) (i)	a varve is an annual/seasonal lake/(peri-)glacial fringe deposit; formed when water carries sediment; forms coarser/silt/lighter coloured layers in spring (and summer) (as higher energy); forms finer/clay/darker coloured/organic/carbon-rich layers during rest of year (as lower energy)	any 2
(ii)	layers alternate - silt in spring and clay in rest of year/coarser and finer/light and dark (do not accept if given in (b) (i)); each varve/pair of bands represent one year/form annual deposits; varves/pairs of bands can be counted to give age; can be dated using other methods such as C^{14}; gives an age in years/thousands of years; individual varves can be recognised by relative thickness	any 2
(c) (i)	suitable <u>labelled</u> diagram of included fragments (eg xenolith/pebble); included fragments older than the rock surrounding them mark labels as text; no diagram = 1 max	1 1
(ii)	suitable <u>labelled</u> diagram of cross cutting relationship; cross cutting feature is younger than the feature cut; suitable example explained, eg dyke/fault cross cutting beds; mark labels as text; no diagram = 2 max	1 1 1
		15

5(a) **Benthonic trilobite morphology**

1	exoskeleton (made of chitin)	1
2	has cephalon, thorax and pygidium	1
3	detailed description of cephalon/pygidium	1
4	has glabella, cheeks and facial suture (for ecdysis) on cephalon	1
5	detailed description of glabella/cheeks/facial suture	1
6	genal angle may extend into a genal spine (for protection/support)	1
7	pairs of jointed limbs on underside of thorax/one pair of limbs per segment	1
8	branched limbs for walking and respiration/walking and gill-bearing branch	1
9	thorax separated into central axis and two pleurae	1
10	many thoracic segments/pleurae/flexible/articulated thorax (for enrolment)	1
11	mouth on underside	1
12	compound eyes/eyes high on cephalon	1
13	for good all round upwards vision	1
14	flattened form/description of morphological adaptation for burrowing	1
15	suitable diagram of benthonic trilobite such as Calymene, Dalmanites	1

max 6

Changes for planktonic mode of life

16	small size so easily carried by currents	1
17	inflated glabella/gas or fat filled acts as a float/buoyancy aid	1
18	no eyes or small eyes as not needed as not a predator/lived in deeper water	1
19	few pleurae/thoracic segments as limited ability to move/no need for swimming/walking/enrolment	1
20	suitable diagram of planktonic trilobite such as Agnostus	1

max 5

Changes for nektonic mode of life

21	small size so easily carried by currents	1
22	inflated glabella/gas or fat filled acts as a float/buoyancy aid	1
23	eyes on stalks/protruding/facing forwards/large eyes so able to see for hunting/allowed sight above and below the animal/allowed good all round vision	1
24	spiky or separated pleurae giving a large surface area (to volume ratio)/aiding buoyancy	1
25	spines for protection	1
26	suitable diagram of nektonic trilobite such as Deiphon	1

max 5

mark labels as text

max **12**

5(b) **Low Energy Continental Shelf**

1	descriptions of common trace fossils/delicate molluscs/brachiopods/echinoderms/corals/trilobites list = 1 max	max 3
2	(shallow water assemblages so) abundant life forms	1
3	mainly thin shelled/less ornamented fauna (as no need to withstand high energy)	1
4	no special adaptations needed for life on substrate/epifaunal	1
5	abundant life in substrate/infaunal	1
6	many trace fossils	1
7	life in the water column/fall to bottom on death/nektonic/planktonic/pelagic forms (eg ammonite, belemnite)	1
8	fossils likely to be whole/intact/life assemblage	1
		max 5

High Energy Continental Shelf

9	descriptions of robust molluscs/brachiopods/echinoderms/corals/trilobites do not credit descriptions already given in 1 list = 1 max	max 3
10	near shore deposits may have plant material/named plant	1
11	mainly thick shelled/highly ornamented/robust fauna (so more able to withstand high energy/don't get broken)	1
12	adaptations to life on the substrate/epifaunal include streamlined shape/attachment	1
13	(thin shelled) life in the substrate/infaunal for protection	1
14	topographic highs may form reefs/algal mats	1
15	corals indicate warm/shallow/high energy conditions/clear water/normal salinity	1
16	fossils may be broken/fragmental/death assemblage	1
		max 5

Deep Ocean Basin

17	descriptions of pelagic microfossils, graptolites and some trilobites to indicate deeper water environment list = 1 max	max 3
18	not much benthonic life/nothing alive on the substrate if anoxic	1
19	limited light penetration/below photic zone	1
20	low energy environment/calm/still water/lack of currents	1
21	pelagic/planktonic/nektonic forms/organisms living in water column fall on death/fallout preserved on sea floor	1
22	mainly deep marine micro-organisms/oozes/cherts	1
23	above CCD may get calcareous micro-organisms/oozes/foraminifera/Globigerina	1
24	below CCD only get siliceous micro-organisms/oozes/radiolaria	1
25	death assemblage	1
26	trace fossils give evidence of some dwelling on substrate	1
		max 5

mark diagrams as text

max **11**

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	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.

Quality of written communication max 2

Question total 25

Advanced GCE (Geology) (3884/7884)
January 2007 Assessment Series

Unit Threshold Marks

Unit		Maximum Mark	a	b	c	d	e	u
2831	Raw	60	44	39	34	29	25	0
	UMS	90	72	63	54	45	36	0
2832	Raw	60	45	39	34	29	24	0
	UMS	90	72	63	54	45	36	0
2834	Raw	90	68	60	53	46	39	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 Mark	A	B	C	D	E	U
3884	300	240	210	180	150	120	0
7884	600	480	420	360	300	240	0

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

	A	B	C	D	E	U	Total Number of Candidates
3884	0.0	28.6	57.1	78.6	85.7	100	14
7884	0.0	50.0	100	100	100	100	4

18 candidates aggregated this series.

For a description of how UMS marks are calculated see:
http://www.ocr.org.uk/exam_system/understand_ums.html

Statistics are correct at the time of publication.

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