OCR
Oxford Cambridge and RSA

GCE

Geology

Unit **F792:** Rocks – Processes and Products

Advanced Subsidiary GCE

Mark Scheme for June 2015

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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.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

Annotations

Annotation	Meaning
	Unclear
BOD	Benefit of doubt
CON	Contradiction
	Cross
ECF	Error carried forward
I	Ignore
NBOD	Benefit of doubt not given
PD	Poor diagram
R	Reject
SEEN	Noted but no credit given
	Tick
^	Omission mark
MR	Maximum response

Annotation	Meaning
DO NOT ALLOW	Answers which are not worthy of credit
IGNORE	Statements which are irrelevant
ALLOW	Answers that can be accepted
( )	Words which are not essential to gain credit
__	Underlined words must be present in answer to score a mark
ECF	Error carried forward
AW	Alternative wording
ORA	Or reverse argument

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>1</td><td>(a)</td><td>(i)</td><td>
<table>
<tr><th>Processes</th><th>Processes at the earth's surface</th><th>Processes below the earth's surface</th></tr>
<tr><td>diagenesis</td><td>(✓)</td><td>✓</td></tr>
<tr><td>erosion</td><td>✓</td><td></td></tr>
<tr><td>magma accumulation</td><td></td><td>✓</td></tr>
<tr><td>recrystallisation</td><td></td><td>✓</td></tr>
<tr><td>weathering</td><td>✓</td><td></td></tr>
</table>
</td><td>1

1</td><td>1 mark for each correct column

ALLOW diagenesis at the Earths surface as well as below

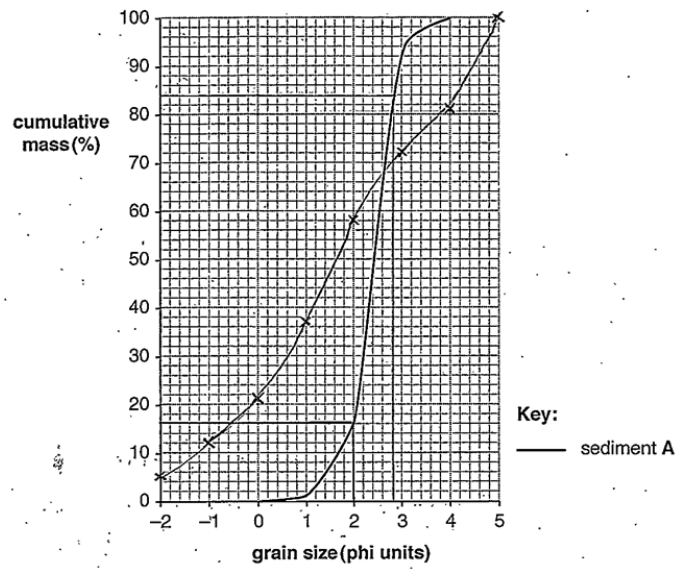
DO NOT ALLOW extra ticks in either column</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>
<table>
<tr><th>Processes</th><th>Rock group</th></tr>
<tr><td>diagenesis</td><td>sedimentary</td></tr>
<tr><td>erosion</td><td>X</td></tr>
<tr><td>magma accumulation</td><td>igneous</td></tr>
<tr><td>recrystallisation</td><td>metamorphic</td></tr>
<tr><td>weathering</td><td>X</td></tr>
</table>
</td><td>2</td><td>3 correct = 2 marks
1 or 2 correct = 1 mark</td></tr>
<tr><td></td><td>(b)</td><td>(i)</td><td>ANY 1 point from
where grains are thrown against the ground ;
where grains are thrown against rocks ;
where grains by thrown against cliffs ;
where grains are thrown against hard surfaces ;</td><td>1</td><td>ALLOW rocks / pebbles / particles / fragments as alternatives to grains

ALLOW rubbing / colliding / hitting / smashed / scrape as alternatives to thrown</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>ANY 1 point from
where grains thrown against each other ;
where grains are saltated against each other ;</td><td>1</td><td>ALLOW rocks / pebbles / particles / fragments as alternatives to grains
ALLOW rubbing / colliding / hitting / smashed / contact as alternatives to thrown</td></tr>
<tr><td></td><td></td><td>(iii)</td><td>grain becomes rounder / rounded OR grain changes shape from angular to round ;

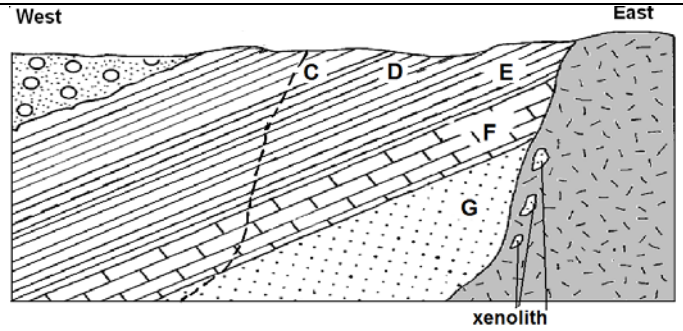
grain becomes smaller / finer OR grain becomes frosted ;</td><td>1

1</td><td>One mark max for two correct diagrams with no correct text
One mark max for two correct statements with no correct diagrams</td></tr>
</table>

Question			Answer	Marks	Guidance
		(iv)	Name saltation **;** Description sand grains bounce just above the surface / desert floor / beach **OR** sand grain picked up and dropped**;**	1 1	If suspension is stated then ecf **ALLOW** 1 mark for correct description of this term **ALLOW** alternative words to bounce such as skip
	(c)	(i)	matrix is sand / mud / sediment / rock fragments deposited between grains **OR** matrix is sand / mud / sediment / rock fragments that holds the grains together **OR** matrix is a mixture of minerals between the grains **OR** matrix is the primary feature of the rock **;** cement is minerals precipitated **OR** cement is crystalline between grains **OR** cement is minerals that holds the grains together **OR** cement is monomineralic **OR** cement is a secondary feature of the rock **;**	1 1	**ALLOW** 1 mark for general statement that describes both cement and matrix without materials eg matrix surrounds the grains and cement is a substance which holds grains together **ALLOW** specific correct named mineral cement (calcite, quartz, hematite)
		(ii)	**ANY** 1 point from quartz survives the rock cycle **;** quartz is chemically resistant **OR** is most resistant **OR** quartz is unreactive **;** quartz is chemically stable **OR** is most stable **OR** is stable at the surface **;** quartz is resistant to weathering **;** quartz is hard (7) **;** quartz has no cleavage **;**	1	Characteristic must be linked to an explanation

Question			Answer	Marks	Guidance
	(d)	(i)	-2 5 -1 12 0 21 1 37 2 58 3 72 4 81 5 100 all points plotted correctly cumulative frequency curve drawn  	1 1 1	All values calculated Ecf if values calculated are plotted correctly ALLOW 1 mark max if values plotted are from mass (%)
		(ii)	$\frac{2.9 - 2}{2} = \frac{0.9}{2} = \mathbf{0.45}$ **OR** $\frac{2.8 - 2}{2} = \frac{0.8}{2} = \mathbf{0.4}$	1	**ALLOW** any value between 0.45 and 0.4
		(iii)	<u>diagram</u> sediment **A** diagram to show well sorted grains **AND** sediment **B** diagram to show very poorly sorted grains **;** <u>description</u> sediment **A** describes well sorted grains as all the same size **AND** sediment **B** very poorly sorted grains of many different sizes **;**	1 1	**ALLOW** 1 mark for **A** drawn and described and 1 mark for **B** drawn and described Mark labels on the diagrams as text

Question			Answer	Marks	Guidance
		(iv)	<u>environment</u> glacial / wadi / alluvial fan **;** <u>**Any** 1 explanation point</u> curve is at low angle **OR** graph shows material is spread across all sieves **;** rapid deposition and close to source **OR** rapid deposition of all sediment sizes **OR** rapid deposition so no sorting **;** a glacier picks up / transports sediment of all sizes **;** as the glacier melts material of all sizes is deposited together **;** a wadi deposit is caused by a flash flood **OR** energy lost quickly **;**	1 1	**ALLOW** correct environment if written in explanation **ALLOW** sudden as alternative to rapid
			Total	**21**	

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td>2</td><td>(a)</td><td>(i)</td><td>line drawn parallel
to the edge of the granite
at 50m +/- 5m
 
</td><td>1</td><td></td></tr>
<tr><td></td><td></td><td>(ii)</td><td>any of the 3 areas of sandstone within the granite</td><td>1</td><td>Label must be within 1mm or touching xenolith or in sandstone xenolith or xenolith circled</td></tr>
<tr><td></td><td>(b)</td><td></td><td><table><tr><th></th><th>rock type</th><th>index mineral</th></tr><tr><td>C</td><td>spotted rock</td><td>chlorite / biotite</td></tr><tr><td>D</td><td>andalusite rock</td><td>andalusite</td></tr><tr><td>E</td><td>hornfels</td><td>sillimanite</td></tr></table></td><td>5</td><td>ALLOW spotted slate for C and andalusite slate or andalusite hornfels for D
1 mark for each point apart from D andalusite where 1 mark for both rock and index mineral
ALLOW cordierite as alternative to chlorite/biotite
ALLOW chiastolite as alternative to andalusite index mineral</td></tr>
<tr><td></td><td>(c)</td><td>(i)</td><td>quartzite OR metaquartzite ;
quartz OR silica OR silicon dioxide ;
granoblastic OR interlocking mosaic of crystals ;</td><td>2</td><td>3 points 2 marks
1 or 2 points 1 mark

ALLOW sugary OR equigranular</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>marble ;
the fossils are recrystallised OR destroyed OR become relict fossils ;</td><td>2</td><td>DO NOT ALLOW fossils deformed OR melted</td></tr>
</table>

Question			Answer	Marks	Guidance
	(d)	(i)	Barrovian zones	1	**ALLOW** Dalradian zones **OR** Barrow's zones
		(ii)	garnet	1	
		(iii)	slate has fine crystals (<1mm) slatey cleavage composed of two of: clay minerals, muscovite, quartz, chlorite, biotite porphyroblasts of pyrite **;** schist has medium crystals (1-5mm) schistosity composed of two of: muscovite, quartz, garnet, biotite, kyanite porphyroblasts of garnet **;** gneiss has coarse crystals (>5mm) gneissose banding composed of two of: biotite, quartz, K feldspar, sillimanite, kyanite, hornblende**;**	3	Name of rock and any 2 descriptors for each rock **ALLOW** Phyllite as alternative to slate or schist **ALLOW** 1 mark for all 3 rocks identified with no description **ALLOW** 1 mark for 3 rocks identified with only 1 descriptor for each **ALLOW** migmatite as alternative to gneiss
			Total	**16**	

Question			Answer	Marks	Guidance
3	(a)	(i)	biotite, hornblende, pyroxene and olivine need to be ticked	1	**ALLOW** mark if 3 out of 4 mafic minerals are correct. No mark if any silicic minerals are ticked
		(ii)	**ANY** 2 points from K feldspar **OR** quartz are only found in silicic rocks (granite) **;** Ultramafic rocks contain only olivine and pyroxene **;** olivine is only found in mafic (basalt) **OR** ultramafic rocks (peridotite) **;** pyroxene is not found in silicic (granite) **;** biotite is found in silicic (granite) **OR** intermediate rocks (diorite) **;** hornblende is only found in intermediate rocks (diorite) **;** Ca rich plagioclase (feldspar) in mafic (basalt) rocks **OR** Na rich plagioclase (feldspar) in silicic (granite) rocks **;**	2	**ALLOW** statements for one mineral to compare one rock group with another **DO NOT ALLOW** answers that include any incorrect minerals
		(iii)	diorite is black and white **OR** grey in colour **AND** basalt is black **OR** dark coloured **;** diorite has 52-66 % silica **AND** basalt has 45-52% silica **;**	1 1	Must have a comparison statement for each **ALLOW** colour if diorite is lighter than basalt **ALLOW** correct use of terms melanocratic and mesocratic
		(iv)	**Any** 1 point from silicic rocks contain low density minerals **AND** ultramafic rocks contain dense minerals **;** ultramafic rocks contain more mafic minerals than silicic rocks **ORA ;** ultramafic rocks contain denser minerals and are therefore denser **ORA ;** silicic rocks have an average density of 2.7g/cm^3 **AND** ultramafic rocks have an average density of 3.3g/cm^3 **;**	1	Must have a comparison of rocks for statement that explains, not just gives data from table

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th>Guidance</th></tr>
<tr><td></td><td>(b)</td><td></td><td>
<table>
<tr><td>All silicic rocks are coarse grained.</td><td>F</td></tr>
<tr><td>Obsidian is a black, silicic rock.</td><td>T</td></tr>
<tr><td>There is a high percentage of felsic minerals in silicic rocks.</td><td>T</td></tr>
<tr><td>The plagioclase in silicic rocks is sodium rich.</td><td>F</td></tr>
<tr><td>Ultramafic rocks have the lowest percentage silica of all the igneous rocks.</td><td>T</td></tr>
</table>
</td><td>3</td><td>5 correct = 3
3/4 correct = 2
1/2 correct =1</td></tr>
<tr><td></td><td>(c)</td><td>(i)</td><td>
<table>
<tr><th></th><th>Igneous</th><th>Metamorphic</th><th>Sedimentary</th></tr>
<tr><td>rock 1</td><td></td><td>✓</td><td></td></tr>
<tr><td>rock 2</td><td>✓</td><td></td><td></td></tr>
<tr><td>rock 3</td><td></td><td></td><td>✓</td></tr>
</table>
</td><td>2</td><td>3 correct = 2
1 /2 correct =1</td></tr>
<tr><td></td><td></td><td>(ii)</td><td>igneous rocks contain augite OR igneous rocks have augite and plagioclase;</td><td>1</td><td></td></tr>
<tr><td></td><td></td><td>(iii)</td><td>conglomerate ;</td><td>1</td><td></td></tr>
<tr><td colspan="3"></td><td>Total</td><td>13</td><td></td></tr>
</table>

Question			Answer	Marks	Guidance
4	(a)	(i)	micrite **OR** micritic limestone **;**	1	**ALLOW** carbonate mud / calcite mud / lime mud
		(ii)	low energy because it is sheltered (from the open ocean) **OR** low energy because it is away from the wind (leeward side) **OR** low energy because it is protected by the reef **OR** low energy because waves are prevented from reaching the lagoon **OR** low energy because breaking waves do not affect the lagoon **;**	1	must have energy and explanation
		(iii)	rock bioclastic limestone **OR** fossiliferous limestone **;** description broken / fragmented fossils (in a calcite / sparite cement) **OR** formed from broken / fragmented organic material (from the reef) **;**	1 1	If rock name is incorrect eg reef talus but following description is correct allow 1 mark **DO NOT ALLOW** oolite due to repetition **ALLOW** crinoidal limestone / any correct named fossil as example of fossiliferous limestone
		(iv)	corals **;**	1	
		(v)	coral / reef grows upwards **OR** coral / reef forms solid mass **OR** coral **/** reef forms continuously over time **OR** not formed by sediments being laid down **OR** not deposited and it grows **;**	1	
	(b)		labelled on diagram: any 2 labels from: nucleus **OR** sand grain **OR** sand particle **OR** shell fragment **OR** pellet **OR** concentric layers **OR** current **OR** rolling action **OR** calcite mud **OR** oolith **;** **ANY** 2 points from: rolls (backwards and forwards) on sea floor due to wave action / tidal action / bidirectional current **OR** rolls (backwards and forwards) on sea floor due to (strong) currents **OR** rolls on sea floor due to rip currents **;** gains concentric layers of calcite / aragonite / calcium carbonate **;** precipitation of calcite / calcium carbonate from sea water to form cement **;**	1 2	Mark annotations on diagram as text Do not credit repetition between diagram and description

Question			Answer	Marks	Guidance
	(c)	(i)	**M** gypsum **;** **N** halite **;**	1 1	
		(ii)	**ANY** 2 points from: salts form due to evaporation in warm sea / barred basin / cut off from sea **;** the rate of evaporation is high so that the water becomes more saline/ saturated **OR** evaporation of water causes an increase in concentration of the ions **OR** evaporation causes the water to become saturated with salts **;** minerals are dense so sink **OR** dense brines sink **;** the most soluble minerals are precipitated out last **OR** the least soluble minerals are precipitated out first **;** sequence of minerals precipitated out is calcite first, gypsum, halite, K salts last **;**	2	**ALLOW** sabkhas as alternative environment
			Total	**13**	

Question			Answer	Marks	Guidance
5	(a)	(i)	at a convergent plate boundary **OR** oceanic-continental plate margin **;** **ANY** 1 point from: where the Nazca plate subducts under the American plate **;** where oceanic plate subducts under continental plate **;** where the subducting plate (partially) melts to form magma (and the volcano) **;**	1 1	**ALLOW** destructive plate boundary **ALLOW** Pacific plate as alternative to Nazca
		(ii)	andesite **;**	1	
		(iii)	description there is an increase in SiO_2 content **OR** the lavas became more silicic **;** **ANY** 1 explanation point from: differentiation / fractional crystallisation of the magma produces silicic minerals **OR** differentiation / fractional crystallisation of the magma makes it richer in quartz and feldspar **OR** differentiation / fractional crystallisation of the magma produces silica rich magma **;** silicic minerals are found at top of the magma chamber **;** differentiation / fractional crystallisation of the magma as mafic minerals form / erupted first **OR** differentiation / fractional crystallisation of the magma depletes mafic minerals **;** assimilation of the continental crust with magma **OR** contamination of the magma with continental crust **OR** mixing of the magma with continental crust **;**	1 1	**DO NOT ALLOW** a list of data points from graph **ALLOW** silicic material or country rock or any correct crustal rock e.g. granite as alternatives to continental crust **ALLOW** melt as alternative to magma
	(b)	(i)	description the ash is thickest closest to the volcano **OR** the ash gets thinner away from the volcano **OR** the ash forms a circular pattern around the volcano **;** explanation the ash is denser than air so most is dropped close to the volcano **OR** the circular pattern suggests that there was no strong wind **OR** ash loses energy with distance **;**	1 1	**ALLOW** elliptical as alternative to describe shape of ash pattern **DO NOT ALLOW** ash to the west **ALLOW** wind from the SE causing ash to spread to NW

Question			Answer	Marks	Guidance
		(ii)	steep sides of conical shape angle between 30^{o} and 60^{o} ; layers of ash and lava alternating (drawn parallel to sides) ; any correctly labelled and drawn vent and crater ;	3	
	(c)		**ANY** 2 points from: ash enters atmosphere and <u>reflects</u> / <u>blocks</u> sunlight ; ash particles cause global cooling **OR** ash particles stops sun's heat from reaching the surface causing cooling ; sulfur dioxide gas released enters atmosphere and forms sulfate particles ; sulfate aerosols reflect heat energy causing cooling for several years **OR** worldwide effect of no summers ; carbon dioxide may cause global warming if <u>very large amounts</u> are produced ;	2	**DO NOT ALLOW** ash blocking the sun making it dark for short term weather **ALLOW** max 1 mark for general statement of blocking / reflecting sunlight and cooling **ALLOW** sulphuric acid as alternative to sulphate aerosols
	(d)		water enters the ground and is heated **OR** groundwater is heated by magma ; (gas) <u>pressure</u> builds up until water is erupted explosively / suddenly / periodically / regularly / water is shot up / due to flash boiling ;	2	**ALLOW** max 1 mark for general statement of hot water erupted explosively
	(e)		**ANY** 2 points for one mark from: fertile soils **OR** mineral enriched soil ; geothermal energy ; tourist industry to watch activity ; building materials **OR** cave houses in tuff ; formation of mineral deposits **OR** sulphur mining ;	1	

Question			Answer	Marks	Guidance
	(f)		**ANY** 2 points from: plotting depth lava / ash / pyroclastics deposits from previous eruptions **;** plotting extent of lava / ash / pyroclastics deposits from previous eruptions **;** plotting route for lahars **;** plotting route for pyroclastic flows / ignimbrites **;** valleys as route for pyroclastic flows / lahars **;** plotting route for lava flows **;** look at historic records for the type / nature / frequency of old eruptions **;**	2	Max 1 for a list (min 2) of correct points without concept of plotting **ALLOW** mapping or previous route or historic routes as alternative to plotting
			Total	**17**	

Question			Answer	Marks	Guidance
6			<u>crystal size</u> intrusive rocks will have medium / coarse crystals **AND** extrusive rocks will have fine / glassy crystals **;** intrusive (plutonic) rocks will have cooled very slowly / millions of years / at depth / be found in batholiths **AND** extrusive rocks will have cooled quickly / at the surface / be found in lava flows **;** intrusive (hypabyssal) rocks will have cooled slowly / thousands of years / at (shallower) depth / be found in dykes / sills **AND** extrusive rocks will have cooled quickly / at the surface / be found in lava flows **;** Only extrusive rocks have glassy texture as this requires very rapid cooling / in water **;** suitable named rocks eg intrusive rocks granite / gabbro / dolerite **AND** extrusive rocks basalt / andesite / obsidian / rhyolite **;**		At least one point must be from this section for full marks Comparative statements do not need to be repeated **ALLOW** longer / deeper as comparative statements **ALLOW** very coarse crystal size in pegmatites / pegmatite veins **AND** not in extrusive
			<u>textures</u> intrusive rocks can show porphyritic texture with two stages of cooling **OR** extrusive rocks could be porphyritic texture but with smaller crystals / smaller phenocrysts **;** intrusive rocks rarely have vesicular / amygdaloidal textures **AND** extrusive rocks commonly have vesicular / amygdaloidal texture **;** intrusive rocks rarely have vesicular textures **OR** extrusive rocks commonly have vesicular texture due to presence of trapped gas bubbles **;** intrusive rocks may have amygdaloidal textures **OR** extrusive rocks commonly have amygdaloidal texture where vesicles are filled by minerals **;** intrusive rocks never have flow banding **OR** extrusive rocks could show flow banding **;** extrusive rocks could have pillow lavas / aa / blocky / pahoehoe / ropey **;** intrusive rocks are not bedded **OR** extrusive rocks can have bedded pyroclasts **;** intrusive rocks may show cumulate layers **;**		At least one point must be from this section for full marks

Question			Answer	Marks	Guidance
			<u>margins of the igneous features</u> intrusive rocks will have baked margins in the country rock at both sides **AND** extrusive rocks will have one baked margin in the country rock below only **;** intrusive rocks will have chilled margins at both sides **AND** extrusive rocks may have one chilled margin only **;** intrusive rocks on a large scale / in a batholith will have a metamorphic aureole around them **;** intrusive rocks on a large scale / in a batholith will form contact metamorphic rocks around them **;** intrusive rocks may have vesicles distributed throughout **AND** extrusive rocks may have vesicles at the top **;** extrusive rocks may have an uneven / weathered / reddened top **;** intrusive rocks can be discordant e.g. dyke or batholith **AND** extrusive rocks will generally be concordant **;** intrusive rocks can have xenoliths from rocks above, below or to the side **AND** extrusive rocks can only have xenoliths from the rocks below **;**		At least one point must be from this section for full marks Mark labelled diagram of intrusive sill and extrusive lava flow as text
			Total	**10**	

Question			Answer	Marks	Guidance
7			<u>alluvial fan arkoses and breccias</u> <u>characteristics</u> breccia - 2 points from poorly sorted, coarse grained (>2mm) / rudaceous, angular grain shape, polymict, rock fragments, has a matrix, red colour **;** arkose - 2 points from poorly sorted, coarse/medium grained (1-2mm) / arenaceous, angular/sub-angular grain shape, contains K feldspar, rock fragments, quartz, has a matrix, red colour / pink colour **;** rocks all texturally and mineralogically immature **;** <u>bed features</u> massive beds / crude beds / lenticular beds / lateral variation **;** <u>sedimentary structures</u> no / rare sedimentary structures **OR** imbricate structure **OR** cross bedding **OR** graded bedding**;** <u>deposition</u> breccias form on scree slopes due to frost shattering / freeze-thaw weathering **;** arkoses are deposited rapidly as a result of flash floods / loss of energy / decrease in velocity / change in slope at base of mountains / suitable labelled diagram **;** arkose has K feldspar from granite upstream **;**		**max 4** For each of the rock types at least 2 characteristics are required Mark labelled diagrams as text Sedimentary structures must be described or two named

Question			Answer	Marks	Guidance
			<u>channel sandstones</u> <u>characteristics</u> sand - 2 points from moderately / poorly sorted, medium grained (0.0625 to 2mm) / arenaceous, rounded/sub rounded, contains quartz, may contain mica**,** sand may be mixed with gravel, sand with pebbles at the base **;** <u>bed features</u> erosional base / fining up sequence **;** lens shape of channel deposit / channel sand is cross cutting /suitable labelled diagram **;** <u>sedimentary structures</u> point bar sand shows cross bedding **OR** <u>asymmetrical</u> ripple marks in sands **;** <u>deposition</u> form on inside of meander bends **OR** in slip off slopes **OR** in point bar deposits **;** forms where the current is lower **;** forms in sand bars within the channel **;**		**max 4** For the rock types at least 2 characteristics are required Mark labelled diagrams as text **ALLOW** imbricate structure if pebbles are described Sedimentary structures must be described or two named

Question			Answer	Marks	Guidance
			<u>flood plain clays</u> <u>characteristics</u> fine grained / <0.0625mm / silt / argillaceous **OR** clay minerals form silt / clay / mudstone / shale **;** may contain plant <u>fossils</u> / <u>fossil</u> roots / seat earth / black organic clays **;** <u>bed features</u> laminated / finely bedded **;** <u>sedimentary structures</u> desiccation cracks form where flood deposits dry out **;** <u>deposition</u> form when the river floods and when the water retreats a thin layer of silt / clay is left behind **;** deposited due to loss of energy when flood spreads out **OR** deposited over a large flat area **;**		**max 4** Mark labelled diagrams as text Sedimentary structures must be described or two named
			Total	**10**	

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