GCE

Geology

H014/01: Geology

AS Level

Mark Scheme for June 2024

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It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

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.

MARKING INSTRUCTIONS

PREPARATION FOR MARKING

RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Online Training*; *OCR Essential Guide to Marking*.

2. Make sure that you have read and understood the mark scheme and the question paper for this unit.

3. Log-in to RM Assessor and mark the **required number** of practice responses ("scripts") and the **required number** of standardisation responses.

MARKING

1. Mark strictly to the mark scheme.

2. Marks awarded must relate directly to the marking criteria.

3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional 50% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.

4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone, email or via the RM Assessor messaging system.

5. **Crossed Out Responses**
   Where a candidate has crossed out a response and provided a clear alternative then the crossed out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed out response where legible.

   Rubric Error Responses – Optional Questions
   Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM assessor, which will select the highest mark from those awarded. *(The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)*

Multiple Choice Question Responses
When a multiple choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).
When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.

Contradictory Responses
When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only **one mark per response**)
Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

Short Answer Questions (requiring a more developed response, worth **two or more marks**)
If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

Longer Answer Questions (requiring a developed response)
Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there then add a tick to confirm that the work has been seen.

7. Award No Response (NR) if:
   - there is nothing written in the answer space

   Award Zero '0' if:

   - anything is written in the answer space and is not worthy of credit (this includes text and symbols).

   Team Leaders must confirm the correct use of the NR button with their markers before live marking commences and should check this when reviewing scripts.

8. The RM Assessor **comments box** is used by your team leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**

   If you have any questions or comments for your team leader, use the phone, the RM messaging system, or e-mail.

9. Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

10. For answers marked by levels of response:

Read through the whole answer from start to finish, using the Level descriptors to help you decide whether it is a strong or weak answer. The indicative scientific content in the Guidance column indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance. Using a 'best-fit' approach based on the skills and science content evidenced within the answer, first decide which set of level descriptors, Level 1, Level 2 or Level 3, best describes the overall quality of the answer.

Once the level is located, award the higher or lower mark:

The higher mark should be awarded where the level descriptor has been evidenced and all aspects of the communication statement (in italics) have been met.

The lower mark should be awarded where the level descriptor has been evidenced but aspects of the communication statement (in italics) are missing.

In summary:

The skills and science content determines the level.

The communication statement determines the mark within a level.

Levels of response questions on this paper are **22(c)(ii)** and **23(a)(iii)**.

11. **Annotations**

Annotation	Meaning
	Correct
	Incorrect
	Omission/missing information
	Benefit of doubt given
	Contradiction
	Rounding Error
	Error in number of significant figures
	Error carried forward
	Level 1 (in levels of response question)
	Level 2 (in levels of response question)
	Level 3 (in levels of response question)
	Benefit of doubt not given
	Seen (to show content on a page has been noted, but not credited)
	Ignore
	Blank page

12. Subject Specific Marking Instructions

Abbreviations, annotations and conventions used in the detailed Mark Scheme (to include abbreviations and subject-specific conventions).

Annotation	Meaning
/	alternative and acceptable answers for the same marking point
✓	Separates marking points
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

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

Question			Answer	Mark	AO Element	Guidance
1			**D** – Sheet ✓	**1**	AO2.1a	
2			**B** – 1 ✓	**1**	AO2.1a	
3			**A** – Calcite ✓	**1**	AO1.1a	
4			**A** – 1= deposition, 2 = lithification, 3 = recrystallisation ✓	**1**	AO1.1c	
5			**C** – Plate tectonics ✓	**1**	AO1.1a	
6			**A** – Clay ✓	**1**	AO1.1a	
7			**A** – Grainstone ✓	**1**	AO2.1b	
8			**A** – Cross bedding ✓	**1**	AO2.1a	
9			**C** – Desert sandstone ✓	**1**	AO2.1a	
10			**B** – Desert ✓	**1**	AO2.1a	
11			**D** – Wadi breccias ✓	**1**	AO1.1c	
12			**D** – To provide evidence on the precise numerical age of an organism ✓	**1**	AO1.1c	
13			**D** – To indicate the way up of a sequence of sedimentary rocks ✓	**1**	AO1.1c	
14			**B** – Rock unit **3** is younger than rock unit **4** ✓	**1**	AO2.1a	
15			**C** – Boundary between the mantle and outer core ✓	**1**	AO1.1a	
16			**D** – ≥ 5.5g cm^{-3} ✓	**1**	AO2.1b	
17			**C** – 4000 km ✓	**1**	AO2.1b	
18			**C** – Mantle plume ✓	**1**	AO2.1a	
19			**D** – A reduction in seismic P wave velocities ✓	**1**	AO1.1c	
20			**A** – Curve 1 ✓	**1**	AO2.1a	

Question			Answer	Mark	AO Element	Guidance
21	(a)	(i)	**A** Hornblende ✓ **B** Olivine ✓ **C** Microgranite ✓ **D** Gabbro ✓	4	AO1.1c	
21	(a)	(ii)	1-5 mm ✓	1	AO1.1a	Correct units are needed for the mark
21	(b)	(i)	Rock **Y** = (porphyritic) rhyolite ✓ Rock **Z** = (amygdaloidal) basalt ✓	2	AO2.1a	**DO NOT** accept microgranite
21	(b)	(ii)	Amygdaloidal ✓ Vesicles form as gas exsolves / escapes ✓ Mineral (E) precipitates / crystalises ✓	3	1 x AO1.1c 2 x AO2.1a	 **ACCEPT** crystals form **ACCEPT** mineral introduced through groundwater / percolating fluids **DO NOT ALLOW** infill
21	(b)	(iii)	<u>Compare - Max 2</u> Y and Z both have fine crystals / groundmass ✓ Y and Z both (finally) crystallised at the surface ✓ <u>Contrast - Max 3</u> Y porphyritic **AND** Z equicrystalline **OR** Y 2 sizes of crystals **AND** Z one size of crystals ✓ Y has <u>phenocrysts</u> ✓ Y phenocrysts / larger crystals form at depth✓ Z 1 stage of cooling **AND** Y 2 stages of cooling ✓ Z has been affected by fluids / water passing through the rock after crystallisation forming amygdales / mineral infilling ✓	**Max 4**	1 x AO3.1a 1 x AO3.1b 2 x AO3.1d	 **ACCEPT** both fine grained **ACCEPT** volcanic
21	(c)		<u>E from quartz – Max 1</u> E would show one cleavage (with a hand lens) **AND** quartz has none ✓ E would be scratched by a steel blade **AND** quartz would not scratch **OR** quartz scratches glass **AND** E does not ✓	2	AO2.1b	 **ACCEPT** converse argument for quartz Max 1 if 2 correct methods but not correctly linked to the minerals

Question			Answer	Mark	AO Element	Guidance
			<u>E from calcite – Max 1</u> E would not produce a streak on a streak plate **AND** calcite would (produce a white streak) ✓ E would only show 1 cleavage plane (with a hand lens) **AND** calcite would have 3 ✓ E would not be scratched by a copper coin **AND** calcite could be scratched ✓ E would not effervesce with (0.5 mol HCl) acid **AND** calcite would ✓			

Question			Answer	Mark	AO Element	Guidance
22	(a)	(i)	V_B = 39 ± 1 ✓ V_W = 11 ± 1 ✓	2	AO1.1b	**ACCEPT** value in range as indicated
22	(a)	(ii)	Porosity = 28 % (accept range 25 – 32 %) ✓	1	AO1.1d	Must be to 2 significant figures **ALLOW ECF** from **22(a)(i)** +/1 3%
22	(a)	(iii)	Axes correctly assigned and labelled ✓ All 5 points from table plotted correctly ✓ Smooth curve joining at least 4 points ✓	3	AO2.1b	**IGNORE** plotting of point for 50% 8mm glass spheres. Half a square tolerance
22	(a)	(iv)	Porosity decreases with decreasing sorting ✓ Smaller grains fill pore space / interlock / pack better between larger grains ✓	2	1 x AO3.1b 1 x AO3.1e	**ACCEPT** as the proportion of 8mm spheres increases the porosity decreases **ACCEPT** negative correlation **ORA** **AW**
22	(b)	(i)	(2 x 1.0) / candidates value for V_W x 100 ✓ 18 % ✓	2	AO2.1b	**EXPECT** V_W = 11 ± 1 ml **ALLOW ECF** from **22(a)(i)**
22	(b)	(ii)	Use a measuring cylinder with smaller graduation divisions / higher resolution / reduced 'instrumental error' e.g. 0.5 ml ✓ Use a larger measuring cylinder which has greater distances between graduations ✓	2	1 x AO3.1f	
22	(c)	(i)	Porosity reduces ✓ At a non-uniform rate / exponential rate / decreasing rate / non-linear / inversely proportional / negative correlation ✓ Use of exemplar values ✓	Max 2	1 x AO1.1b 1 x AO1.1d	 e.g 42% at 0 km and 22% at 2 km

Question			Answer	Mark	AO Element	Guidance
22	(c)	(ii)	Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question. **Level 3: 5 – 6 marks** Gives thorough description and explanation of **at least two** of the four diagenetic processes of lithification. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2: 3 – 4 marks** Gives good description and explanation of **at least two** of the four diagenetic processes of lithification. *There is a line of reasoning with some structure. The information presented is relevant and supported by some evidence.* **Level 1: 1 – 2 marks** Attempts a description and/or explanation of **at least one** of the four diagenetic processes of lithification. *There is an attempt at a logical structure with a line of reasoning. The information is, in the most part, relevant.* **0 marks -** No response or no response worthy of credit.	**6**	2 x AO1.1c 4 x AO2.1a	**Indicative scientific points could include the following points and explanations:** As sediment accumulates this sediment mass produces pressure. This causes grains to become more closely packed (repack). This loading causes sediments to undergo mechanical **compaction** and leads to a loss of porosity. During deeper burial very high pressures occurs at grain point contacts. This leads to **pressure (dis)solution** at the grain contacts (and may form styolites) and leads to a loss of porosity. Dissolved minerals may **recrystallise** locally to further lead to a loss of porosity. Additionally flowing groundwater containing ions in solution may precipitate minerals when conditions are suitable. Minerals include quartz, calcite and hematite. This forms **cements** which fill pore space and bind grains together.

Question			Answer	Mark	AO Element	Guidance
23	(a)	(i)	Composite cone / strato ✓ (~) 9 - 21 ° ✓	2	1 x AO1.1a 1 x AO1.1b	**DO NOT ALLOW** Strata Must be a discrete value.
23	(a)	(ii)	Valid description of a direct method of measuring lava temperatures e.g. inserting a temperature / thermometer probe **OR** thermocouple ✓ **OR** Valid description of an indirect (remote sensing) method of measuring lava temperatures e.g. optical pyrometry- observing the wavelength of the light emitted by the lava / use of an **infrared** camera / thermometer / sensor ✓	**Max 1**	1 x AO1.1a	**DO NOT ALLOW** thermometer unqualified **ACCEPT** thermal imaging / thermal camera / thermal scanner
23	(a)	(iii)	Please refer to the marking instructions on page 4 of this mark scheme for guidance on how to mark this question. **Level 3: 5 – 6 marks** Has a **thorough** description and explanation of how the chemical and physical characteristics of **both lava types** determines the ease of gas escape and nature of volcanic activity and thus the predictability of the volcanic hazard and the risk to local populations. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated* **Level 2: 3 – 4 marks** Has a **good** description and explanation of how the chemical and/or physical characteristics of **one or both lava types** determines the ease of gas escape and nature of volcanic activity and/or predictability of the volcanic hazard. An understanding of differing risks may be present. *There is a line of reasoning with some structure. The*	6	1 x AO2.1a 2 x AO3.1a 3 x AO3.1b	**Indicative scientific points could include the following points and explanations:** Volcano's **W** lavas have a mafic (low silica) composition Which is erupted at relatively high temperatures And hence these lavas have a low viscosity Additionally mafic volcanoes have a relatively low gas content And such gases are able to escape the low viscosity rather easily Producing low gas pressures Producing effusive (low VEI) activity The main hazards of which are lava flows The timing and path of which are predictable Volcano's **X** lavas have a more silicic (mafic to silicic) composition Which is erupted at relatively low temperatures And hence these lavas have a high viscosity

Question			Answer	Mark	AO Element	Guidance
			information presented is relevant and supported by some evidence. **Level 1: 1 – 2 marks** Has **some** description of how the chemical and/or physical characteristics of **one or both lava types** controls the nature of volcanic activity/hazard/risk. *There is an attempt at a logical structure with a line of reasoning. The information is, in the most part, relevant.* *No response or no response worthy of credit* **0 marks.**			Additionally more silicic volcanoes have a relatively high gas content And such gases are not able to easily escape the high viscosity lava Producing high gas pressures And explosive (high VEI) activity The main hazards of which are pyroclastic flows The timing and path of which are unpredictable
23	**(b)**		Timer / stopwatch and ruler / measuring cylinder ✓ Measure the time it takes for the Skittle ™ to pass through a predetermined distance **OR** how long they travel in a prescribed time ✓ Change the viscosity / density of the sugar solutions ✓ Use the equation speed = distance ÷ time / take repeats and calculate the mean value after (removing any anomalous results) ✓	**4**	2 x AO1.1b 2 x AO1.1d	**IGNORE** use of other equipment **ACCEPT** time how long it takes the Skittles ™ to reach the bottom of the boiling tube

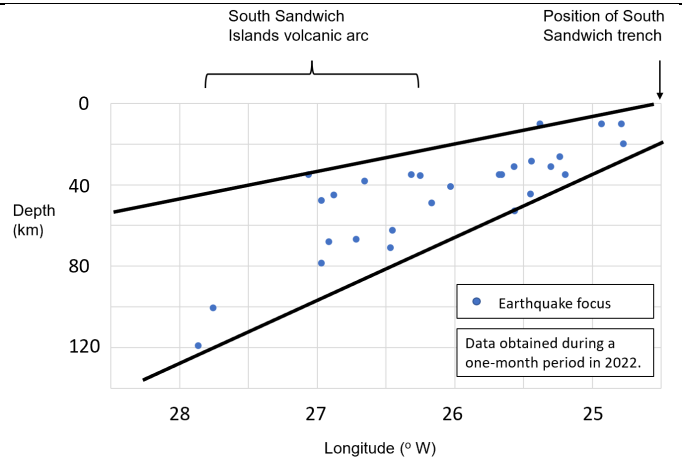
<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Mark</th><th>AO Element</th><th>Guidance</th></tr>
<tr><td>24</td><td>(a)</td><td></td><td>
<table>
<tr><th>Geological feature</th><th>F</th><th>G</th><th>H</th></tr>
<tr><td>Graben (rift)</td><td></td><td></td><td>✓</td></tr>
<tr><td>Fold mountains</td><td></td><td>✓</td><td></td></tr>
<tr><td>Shear dominated structures</td><td>✓</td><td></td><td></td></tr>
</table>
</td><td>Max 2</td><td>AO2.1a</td><td>3 correct = 2 marks; 1 or 2 correct = 1 mark.
DO NOT ACCEPT more than one tick per row.</td></tr>
<tr><td>24</td><td>(b)</td><td>(i)</td><td>GPS ✓</td><td>1</td><td>AO1.1a</td><td></td></tr>
<tr><td>24</td><td>(b)</td><td>(ii)</td><td>72 mm a^{-1} ✓</td><td>1</td><td>AO1.1d</td><td>Answer must have units.</td></tr>
<tr><td>24</td><td>(b)</td><td>(iii)</td><td>GPS data indicate plates are moving towards each other / Sandwich and South American plates moving towards each other ✓
Volcanic island arc ✓</td><td>2</td><td>AO2.1a</td><td>ACCEPT any reference to volcanism
ALLOW map symbol for a convergent plate boundary is shown at this location</td></tr>
<tr><td>24</td><td>(b)</td><td>(iv)</td><td>Relative speed = 6 mm a^{-1} ✓

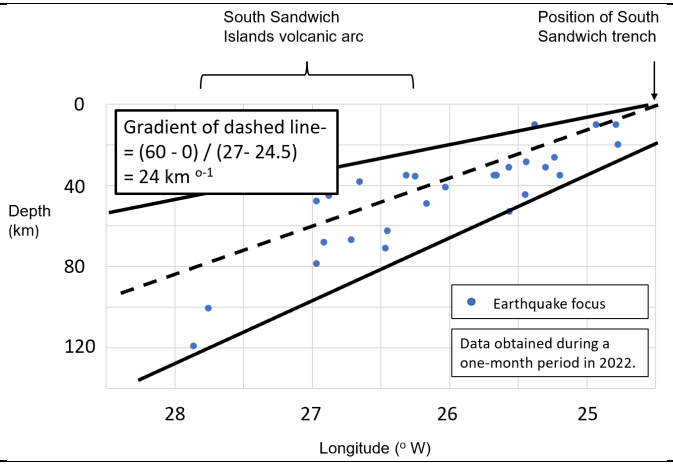
Direction of plate movement = Westward ✓

Fault type = Strike slip OR Sinistral ✓</td><td>3</td><td>1 x AO3.1a
2 x AO3.1e</td><td>Answer must have units.

ACCEPT West / to the West

ACCEPT transform fault / tear fault
ACCEPT left-handed</td></tr>
<tr><td>24</td><td>(c)</td><td>(i)</td><td>Benioff zone ✓</td><td>1</td><td>AO1.1c</td><td></td></tr>
</table>

Question			Answer	Mark	AO Element	Guidance
24	(c)	(ii)		1	AO2.1b	**ACCEPT** any straight line between the two show lines If the line reaches the surface it must be to the east of 25°W
24	(c)	(iii)	Only a limited number of data points ✓ Data collected over a short period of time ✓ Uncertainty over where the earthquakes originate ✓ Rising magma may cause earthquakes ✓ Earthquakes could occur within the plate ✓	Max 2	AO3.1c	
24	(c)	(iv)	Δy/Δx seen for their straight line ✓ Expect a range 20 – 35 ✓ km $^{o-1}$ or km degrees^{-1} ✓	3	AO2.1b	**ACCEPT** a negative gradient Correct answer for their working

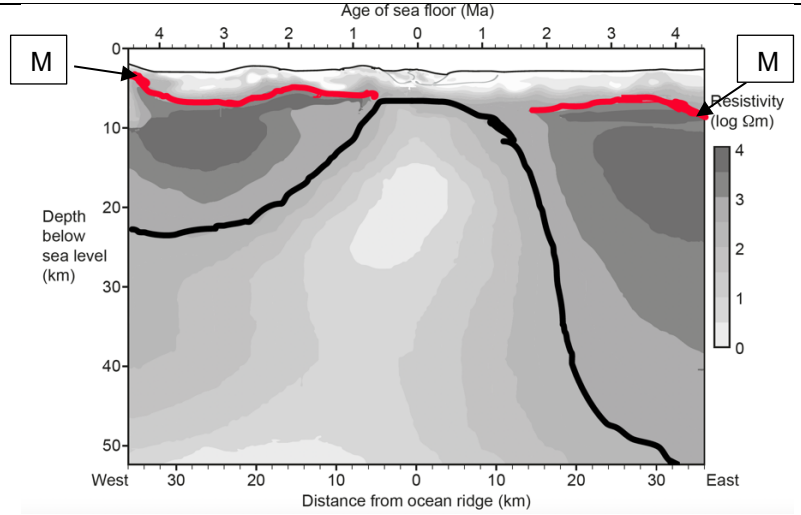
Question			Answer	Mark	AO Element	Guidance
						
24	**(c)**	**(v)**	The release of water / dehydration from the subducted oceanic crust / plate ✓ Reduces the melting point / flux melting ✓ Partial melting of the subducted oceanic crust / overlying mantle ✓ Sandwich plate may also melt as magma intrudes ✓	**Max 3**	1 xAO3.1a 2 xAO3.1b	**ACCEPT** lithosphere
24	**(d)**		<u>Active Mantle Convection - Max 2</u> Heat originating in Earth's core rises through mantle ✓ Mantle (despite being solid) is able to <u>flow</u> ✓ Rising convecting mantle forced to move laterally on meeting the lithosphere ✓ Convecting mantle drags overlying lithosphere / plate with it ✓ <u>Ridge push - Max 2</u> Originates at ocean ridges ✓ Where the elevated topography ✓ Results in gravity pushing the (oceanic) lithosphere / plate down and away from the ridge ✓ <u>Slab pull - Max 2</u> Originates in subduction zones ✓ Where sinking cold / dense (oceanic) lithosphere / plate ✓	**Max 4**	AO2.1a	

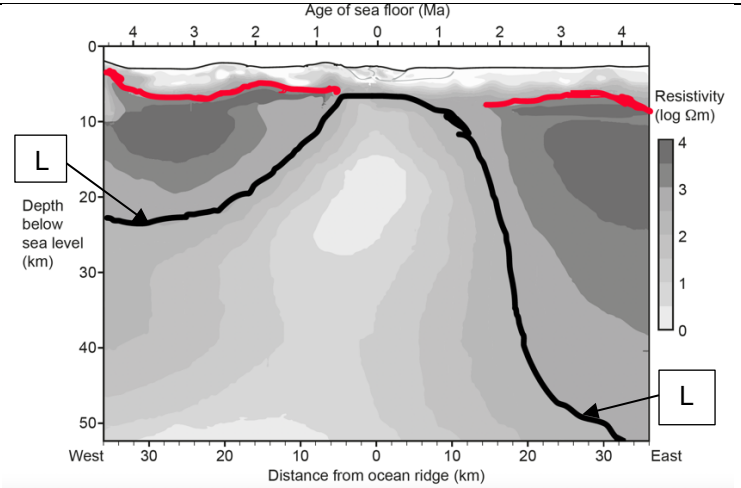
Question			Answer	Mark	AO Element	Guidance
			Pulls the rest of the oceanic lithosphere / plate with it under the influence of gravity ✓			

Question			Answer	Mark	AO Element	Guidance
25	**(a)**	**(i)**	Fault plane drawn dipping at ~ 65 º to the east ✓ Bedding planes dipping at ~ 10 º to the west ✓ At least 9 bedding planes drawn ✓ Additional subtle observations ✓	**4**	AO1.1d	To include kinking of fault plane, buckling of top bed on western side of fault, laminations within the shales, small-scale faulting of sandstones on western side of fault, possible small antiform at bottom right.
25	**(a)**	**(ii)**	<table><tr><th>Geological structure</th><th>Dip angle and dip direction</th></tr><tr><td>Fault plane</td><td>62-70 º to the east ✓</td></tr><tr><td>Bedding plane</td><td>8-16 º to the west ✓</td></tr></table>	**2**	AO2.1b	If both dip angles correct but directions incorrect then **Max 1**
25	**(a)**	**(iii)**	Throw measured from photograph seen = 2.8 – 4.0 cm ✓ (2.8 – 4.0) ÷ 0.25 = 11.2 – 16.0 cm ✓	**2**	AO2.1b	If first mark out of range, credit second mark if correct scale conversion

25	**(a)**	**(iv)**	Normal fault ✓ Footwall has been upthrown **OR** hanging wall is downthrown ✓	**2**	AO1.1c	
25	**(a)**	**(v)**	<u>Statement correct as –</u> East-west direction is perpendicular to fault plane / extended in East -West direction / hanging wall downthrown to the East / footwall upthrown to the West ✓ Normal faults form under tensile stresses ✓ <u>Statement incorrect as -</u> Normal faults generally form at divergent plate boundary not convergent ✓ Rocks are too young to be involved in the Caledonian orogeny / an orogeny occurs at a convergent plate boundary where reverse faults form ✓	**4**	2 xAO3.1b 2 xAO3.1c	**ORA** **AW**
25	**(b)**		Rocks under stress due to opposing forces ✓ Stress causes rocks to deform / strain ✓ Elastic strain energy stored in the rocks ✓ At a critical value, rocks will fracture / fault / rupture ✓ Releasing seismic energy / seismic waves ✓	**Max 3**	AO1.1c	**ACCEPT** tension, compression, shear forces **ACCEPT** release of P / S / L waves

Question			Answer	Mark	AO Element	Guidance
26	(a)		60 km ÷ 7.6 Ma ✓ 6,000,000 cm ÷ 3,800,000 a ✓ 1.6 +/- 0.2 cm a^{-1} ✓	3	AO2.1b	**ACCEPT** similar correct values from diagram Can award second mark if first stage of working is shown and correct answer obtained Award two marks if correct steps followed but half-spreading rate calculated

Question			Answer	Mark	AO Element	Guidance
26	(b)	(i)	 Correct line labelled M ✓	1	AO2.1a	Must be on both sides of ridge stretching at least 2km (on RHS) and 3 km (on LHS) **ALLOW** gap from 0 – 20 km to east of ridge **ACCEPT** a continuous line across from East to West
26	(b)	(ii)	<table><tr><td>Passing from solid silicic rocks to solid mafic rocks</td><td>Passing from solid silicic rocks to partially molten mafic rocks</td><td>Passing from solid intermediate rocks to solid mafic rocks</td><td>Passing from solid mafic rocks to partially molten ultramafic rocks</td><td>Passing from solid mafic rocks to solid ultramafic rocks ✓</td></tr></table>	1	AO2.1a	

Question			Answer	Mark	AO Element	Guidance
26	(b)	(iii)	 Correct line labelled L ✓	1	AO1.1c	Must be on both sides of ridge stretching at least 2km (on RHS) and 3 km (on LHS)
26	(b)	(iv)	Asthenosphere is partially molten ✓ Partial melts better conductors (of electricity) / partial melts have a lower resistivity ✓	2	AO3.1b	**ACCEPT** rheid
26	(c)		Partial melting / decompression melting ✓ Due to reduction in pressure / decompression ✓ Of mantle rock / peridotite / ultramafic rocks ✓	3	AO3.1b	**ACCEPT** discussion of adiabatic changes. **ACCEPT** upwelling mantle / mantle rising up

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