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Pearson Edexcel

Mark Scheme (Results)

November 2020

Pearson Edexcel International GCSE
In Geography (4GE1)
Paper 1: Physical Geography

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

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Question number	Answer	
1(a)	**AO1 (1 mark)** **B** the volume of water carried by a river at any one place is the correct response. A is incorrect as it is just talking about speed of water. C is incorrect as it only identifies depth. D is incorrect as it only identifies width.	**(1)**

Question number	Answer	Mark
1(b)(i)	**AO1 (1 mark)** **D** an area of land drained by a river is the correct response. A is incorrect as this is about storage. B is incorrect as this is about water levels rather than a land area. C is incorrect as the response is about flooding.	**(1)**

Question number	Answer	Mark
1(b)(ii)	**AO1 (1 mark)** Award 1 mark for any of the following. • Rainfall (1) • Vegetation (1) • Soil type (1) • Depth/width of river (1) • Drainage density/number or tributaries (1)	

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	• Channel gradient (1) • Geology (1) • Velocity / river speed (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
1(b)(iii)	**AO1 (1 mark)/AO2 (1 mark)** Award 1 mark for the idea of a time difference/delay (AO1) and a mark for further development (AO2) up to a maximum of 2 marks: • The lag time is the delay (1) between the peak rainfall and the peak discharge (1). • Rainwater is delayed in reaching the river (1) due to interception from trees (1). Accept any other appropriate response.	**(2)**

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Question number	Answer	M
1(c)	**AO2 (2 marks)/AO3 (2 marks)** Award 1 mark (AO3) for identification of any idea from Fig 1a and a further mark for explanation of the reason (AO2) up to a maximum of two marks each. • Urbanisation (1) high levels of urbanisation will increase the speed at which water is transferred into stores (1). • Deforestation/removal of woodland (1) will increase run off rates from slopes increasing water transfer speeds (1). Accept any other appropriate response.	**(4)**

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Question number	Answer	k
1(d)	**AO2 (3 marks)** Award 1 mark for the identification of a cause of pollution and 2 marks for further explanation up to a maximum of 3 marks. Candidates could identify: • Wastewater from agriculture (1) can cause increased eutrophication of the water (1) because of the high concentration of chemicals (1). • Plastics dumped in rivers (1) can cause a decrease in water quality (1) damaging river ecosystems / affects the food chain (1). • Discharge of sewage (1) lowers water quality/making water dirty (1) threatening human health (1). • Chemicals have been added to the water (1) downstream impact on wildlife (1) which could disrupt food chains (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
1(e)	**AO3 (1 mark)** Award 1 mark for the following: Spur/Interlocking Spur	**(1)**

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Question number	Answer	k
1(f)	**AO1 (1 mark) AO2 (3 marks)** Award 1 mark for initial point (AO1), and 3 further marks (AO2) for the extension of this point up to maximum of 4 marks. • A floodplain is the area directly adjacent to the river bank (1) and occurs in the lower course of the river (1) forms when the river discharge is high (1) and the river bursts its banks (1) water may infiltrate the soil it leaving behind a layer of material which builds up to form the flood plain (1). • Lateral erosion on the outside of meander bends (1) wears away valley sides / slopes (1) so that the valley floor becomes wider and flatter (1) and covered in alluvium when the river is in flood (1). • Erosion on the outside of the meander bend (1) results in meander migration across a flood plain (1). When river floods it deposits sediment on valley bottom (1) building up the floodplain (1). NB: Maximum of 1 mark for description. Accept any other appropriate response.	**(4)**

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Question number	Answer indicative content
1(g)	**AO3 (4 marks) AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. This question is about identifying and analysing why it is important to use flood prevention techniques on the river Thames. Candidates will need to be able to identify why it is important and what has been done through interrogation of the resources. **AO3** • There is a clear link between the impact of flooding and what has been done to reduce and manage the Thames. • By introducing several weirs, the Thames scheme is able to manage the flow of water more effectively reducing the possibility of flooding. • This was clearly a major issue as many people responded to the consultation on the subject, this was potentially to do with the large amounts of homes at risk. • It is likely that the scheme was invested in due to the high cost of flood damage. • The Thames management scheme also had several other benefits although it is unlikely that new wildlife habitats being formed was a high priority for the project. **AO4** • Fig 1c suggest that £850 million pounds' worth of damage could result from a flood. • Fig 1c 15000 properties at risk from flooding.

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	• Fig 1c flood management results in better recreation facilities new habitats created. • Fig 1c suggest high level of importance as 800 people responded to consultation. • Fig 1c gives resident views of the scheme.

Question number	**Answer**	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

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Question 2

Question number	Answer	Mark
2(a)	**AO1 (1 mark)** **D** Marine plants (1) is the correct response A, B, D are all biotic abiotic factors	**(1)**

Question number	Answer	Mark
2(b)(i)	**AO1 (1 mark)** **A** The amount of living matter in an ecosystem (1) is the correct response. B, C and D are all have elements of non-living elements of the ecosystem.	**(1)**

Question number	Answer	Mark
2(b)(ii)	**AO1 (1 mark)** • Made of blown sand (1) • Range of vegetation/Marram Grass (1) • Undulating shape (1) • Slip face of dune (1) • Fragile / easily eroded (1)	

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	NB: Feature can be related to a stage in dune formation. Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
2(b)(iii)	**A01 (1 mark)/AO2 (1 mark)** Award 1 mark (AO1) for identifying a factor (AO2) for further explanation up to a maximum of 2 marks. • Need temps of 26-28 degrees (1) so only found in the tropics (1). • Light is needed for coral to grow (1) as hey only grow in areas of shallow water where the light can penetrate (1). • Global warming (1) leading to sea level rise (1). • Human impact (1) for example climate change causing temperature of water to change/coral bleaching (1). • Pollution from tourist activity (1) damages coral (1). Accept any other appropriate response.	**(2)**

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Question number	Answer	k
2(c)	**AO2 (2 mark)/AO3 (2 mark)** Award 1 mark (AO3) for identification of any idea from fig 2a and a further mark for explanation of the reason (AO2) up to a maximum of two marks each. • Hard engineering / sea walls (1) can limit the effect of coastal erosion (1). • Hard engineering / seawalls (1) can reduce damage to high value land (1). • Soft engineering / beach replenishment (1) can limit the effect of erosion at the coast (1). • Soft engineering / beach replenishment (1) is used as a more sustainable/aesthetically pleasing approach to coastal management (1). • Soft engineering / beach replenishment (1) creates a buffer zone in front of cliffs (1). Accept any other appropriate response.	**(4)**

Question	Answer	Mark

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number		
2(d)	**AO2 (3 mark)** Award 1 mark for the identification of a cause and 2 marks for development through further explanation up to a maximum of 3 marks. • Lack of sea defenses (1) due to poor levels of economic development (1) means that coastal areas are more susceptible to flooding (1). • Polar ice melts (1) this is caused by global warming (1) resulting in increased sea levels (1). • Extreme weather events such as storm surges (1) create large waves (1) which result in increased tidal range resulting in exceptional high tides (1). • Tectonic movement (1) causes a tsunami which reaches the coast (1) and particularly damages low lying areas (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
2(e)	**AO3 (1 mark)** Award 1 mark for the following: • Cave (1)	**(1)**

Question number	Answer	Mark

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2(f)	**AO1 (1 mark)/AO2 (3 mark)** Award 1 mark for initial point (AO1), and 3 further marks (AO2) for the extension of this point up to maximum of 4 marks. • Spits are created through a dominant longshore drift along a section of coastline (1) material is deposited and extends the coastline/beach (1) through constructive waves (1) the build-up of these materials over a long period of time results in spit formation (1). • Sediment moved along a coastline by longshore drift (1) in direction of prevailing wind (1). The coastline changes direction (1) but the deposition of sediment continues (1). Accept any other appropriate response.	**(4)**

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Question number	Answer indicative content
2(g)	**AO3 (4 marks) AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. This question is about analysing the positive impact of mangrove development of Coastal areas. The resource gives candidates an idea of a range of benefits. Candidates will be expected to make the link between the positive effects of coastal erosion reduction and the high amount of dependence that India has on coastal areas. For higher level response there is an expectation for both human and physical advantages to be identified. Candidates may make a statement of the idea of Mangroves being very important in the defence against flooding.

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AO3

- Mangroves are a very beneficial ecosystem that can have a range of positive effects.
- India is very focused on development at the coast with 250 Million people living within 50miles – this means that there is a reliance of the coast to provide a way of life through fishing and tourism. This is supported by the high number of major and minor ports.
- Nursery areas for small fish and marine invertebrates – food source as well as sea defense.
- Many coastal communities depend on fish as a main food source.
- Coastal areas provide areas where trade can take place with other countries.

AO4

- Fig 2c shows that coastal areas in India are under threat from coastal erosion.
- Fig 2c demonstrates that a large amount of the (250 million) population lives near the coast working in the fishing industries.
- Fig 2c identifies that the mangrove acts as buffer to coastal erosion
- Fig 2c mangroves acts as a filter for pollutants.
- Fig 2c mangroves provide a range of habitats for different species and fodder for farm animals.
- Fig 2c mangroves can provide a managed source of timber if carefully controlled.
- Fig 2c mangroves benefit other coastal environments e.g. sea grass.

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Question number	Answer	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question 3

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Question number	Answer	M
3(a)	**AO1 (1 mark)** **A** Emergency aid (1) is a short term response B, C, and D are longer term responses so are incorrect	**(1)**

Question number	Answer	Mark
3(b)(i)	**AO1 (1 mark)** **C** Families separated (1) is the correct response A, B, And D are all physical impacts so are incorrect	**(1)**

Question number	Answer	Mark
3(b)(ii)	**AO1 (1 mark)** Award 1 mark for the following: • Richter scale (1) • Moment magnitude scale (1) • Magnitude scale (1) As the question is about natural hazards candidates may give examples relating to measuring other natural hazards or how to measure them. Accept any other appropriate response.	**(1)**

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Question number	Answer	k
3(b)(iii)	**AO1 (1 mark)/AO2 (1 mark)** Award 1 mark for the identification of the method of relief (AO1) and a further mark for further development (AO2) up to a maximum of 2 marks: • Long term planning such as storm shelter development (1) can provide the general population with somewhere safe to stay during a cyclone event (1). • Investment/foreign aid can be used to develop early warning systems (1) which means people can evacuate (1). As the question is about natural hazards candidates may give examples relating to cyclones or volcanoes. Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(c)	**AO2 (2 mark)/AO3 (2 mark)** Award 1 mark (AO3) for identification of any idea from Fig 3a and a further mark for explanation of the reason (AO2) up to a maximum of two marks each. • The climate is of a good quality (1) and gives people a good quality of life (1). • Tourism provides a source of income (1) few other job opportunities in the area (1). • People may have low income (1) and are therefore not able to move (1). • The city is very developed/provides jobs (1) so people don't want to move (1). Accept any other appropriate response.	

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Question number	Answer	Mark
3(d)	**AO2 (3 marks)** Award 1 mark for the identification of a way in which government can help prepare the population and 2 marks for development through further explanation up to a maximum of 3 marks. • Governments can prepare people for a hazardous event by carrying out emergency drills (1) which involves the population practicing what to do (1) and where they should go increasing the chances of them surviving (1). • Governments can prepare people for a hazardous event by investing money (1) in earthquake proof infrastructure/new technology (1) which means that people will have time to evacuate buildings more efficiently (1). • Governments can prepare people for hazardous events by creating evacuation plans (1) which can be shared with the population (1) so that the people know what to do in the event of an earthquake (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(e)	**AO3 (1 mark)** Award 1 mark for the following: • Smoke plume/Gas/Lava bombs/Dust Accept any other appropriate response.	**(1)**

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Question number	Answer	k
3(f)	**AO1 (1 mark)/AO2 (3 mark)** Award 1 mark for initial point (AO1), and 3 further marks (AO2) for the extension of this point up to maximum of 4 marks. • Earthquakes occur at plate margins (1) as the plates move together it is known as a destructive plate margin (1) one of the plates is destroyed as it gets pushed beneath the other plate (1) this process is called subduction (1). • Two plates moving in opposite directions (1) get stuck and pressure builds up (1) and when the plate slips (1) pressure is released and causes the ground to shake (1). Accept any other appropriate response.	**(4)**

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Question number	Answer indicative content
3(g)	**AO3 (4 marks) AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. This question is about analysis of the differences between tropical cyclones. Candidates will be expected to identify and compare differences between two examples. For higher level candidates there should be a link between the level of damage/location and strength of the cyclone. AO3 • The impact of tropical storms will vary depending on the level of development in an area. • The impact of the tropical storm will depend on the physical strength, duration and size of the storm • Countries that have effective warning systems should be better prepared for the event • More developed countries can often afford to spend more on prediction and emergency procedures limiting the amount of deaths. • Highly urbanised areas are likely to suffer a greater financial burden. AO4 • Fig 3c tells us that the level or preparedness has an impact on the number of deaths. • Fig 3c tells us that rural areas do not suffer the same level of damage as urban areas. • Fig 3c shows there are differing levels of damage between the two cyclones.

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	• Fig 3c Shows the impact of the cyclone in the USA was much higher. • Fig 3c shows the size of the storm is different 600/1500km and that the wind speed of the larger storm is slower.

Question number	**Answer**	
Level	**Mark**	**Descriptor**
	0	No rewardable material.

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Level 1	**1–3**	• Attempts to apply understanding to deconstruct infor on but understanding and connections are flawed. An unbalanc incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

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Question number	Answer	Mark
4(ai)	**AO3 (1 mark)** Students could use data from a previous study in the same area (1). Alternatives may include: • National rivers flow archive • (Geology) maps • Local water companies • (GIS) maps • Textbooks • Photos taken by someone else Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
4(aii)	**AO3 (1 mark)** Award one mark for a suitable disadvantage. • The data could be inaccurate/bias (1). • The data could be from a different location (1). • They may not have collected the data over the same time period (1). In this response candidates must relate the answer for 4aii to the response given in 4ai.	

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	If candidates do not put in a response for 4ai and then state a generic disadvantage allow mark. Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
4(aiii)	**AO4 (2 marks)** Award 1 mark for working and 1 mark for correct answer to one decimal place. Add up all the figures 85.8 /8 = 10.7	**(2)**

Question number	Answer	Mark
4(aiv)	**AO4 (2 marks)** Candidates will need to plot all points correctly • 1 mark for each correctly plotted point with lines complete. • 1 mark for accurately plotted points but no line. • If no points plotted, but accurate line, award 1 mark. Plot points 3.5 and 0.6	

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	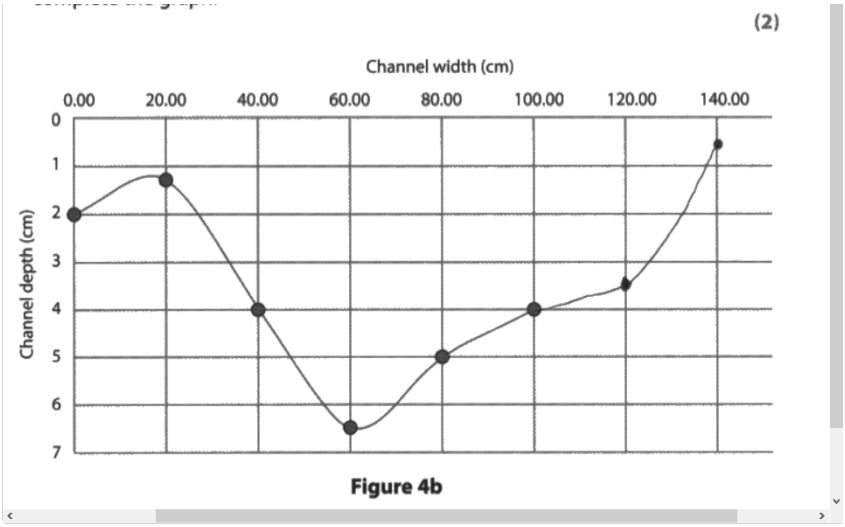 Figure 4b	**(2)**

Question number	Answer	Mark
4(av)	**AO3 (2 marks)** Award 1 mark for describing an alternative sampling method (1) and 1 mark for further development (1). • Stratified – students could use a stratified sampling technique where a proportionate number of observations are taken from each part of an area (1) is more likely reflective of the total population (1). • Systematic - students could pick the first site at random then pick subsequent sites at a set defined distance (1) this would help ensure that the sampling covered a whole range of changes along the river channel (1). Accept any other appropriate response.	**(2)**

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Question number	Answer	k
4(b)	**AO3 (4 marks)** Award 1 mark for the initial point (1) and a further mark for further development (1). • Advantage: By using field sketches students can get a quick view of the areas they are working recording key features (1) to support recall later (1). • Advantage: By using field sketches students can highlight features (1) that they want to focus on as part of their study (1). • Disadvantage: Because students are often making sketches quickly, they may not record key features correctly (1) leading to inaccuracies later on (1). • Disadvantage: Because students have different perceptions (1) they may over-exaggerate features (1). Accept any other appropriate response.	**(4)**
Question number	**Answer indicative content**	

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4(c)	**AO3 (4 marks) AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. This question is about the candidates making a judgement of the value of their data presentation techniques in achieving the overall aims of their study. This will depend on what data presentation techniques they used. Candidates are expected to make a judgement on more than one technique. Candidates should identify strengths, weaknesses, and alternative resources which would support them in planning the enquiry. For level 2 responses candidates will need to link the evaluation to the purpose of the study directly. For level 3 responses there should be a greater depth of evaluation.

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Question number	Answer	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

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Question number	Answer	k
5(ai)	**AO3 (1 mark)** Students could use data from a previous study in the same area (1). Alternatives may include: • (Geology) maps • (GIS) maps • Archive photographs/sketches • Old maps • Historical records • Photos taken by others • Collecting data from the internet Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
5(aii)	**AO3 (1 mark)** Award one mark for a suitable disadvantage. • The data could be inaccurate/bias (1). • The data could be from a different location (1). • They may not have collected the data over the same time period (1). In this response candidates must relate the answer for 5aii to the response given in 5ai. If candidates do not put in a response for 5ai and then state a generic disadvantage allow mark.	

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	Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
5(aiii)	**AO4 (2 marks)** Award 1 mark for each correct value to 1 decimal place Award 1 mark for correct method 0+44+40+51 = 135/4 = 33.75 cm Correct to 1 decimal place 33.8cm	**(2)**

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Question number	Answer	k
5(aiv)	**AO4 (2 marks)** Candidates will need to plot bars correctly. 1 mark for each correctly plotted bar. There is no requirement for width or shading. Plot points are 81.5 and 30.3	**(2)**

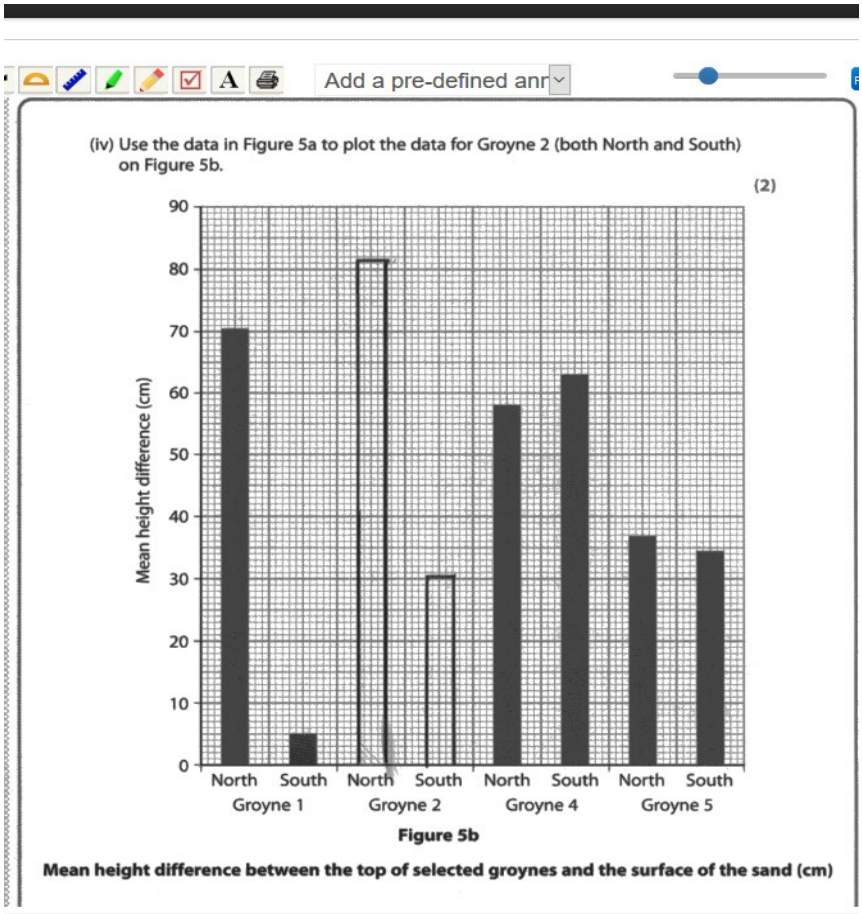

Figure 5b

Mean height difference between the top of selected groynes and the surface of the sand (cm)

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Question number	Answer	k
5(av)	**AO3 (2 marks)** Award 1 mark for describing an alternative sampling method (1) and 1 mark for further development (1). • Stratified – students could use a stratified sampling technique where a proportionate number of observations are taken from each part of an area (1) to reduce the amount of samples needed (1) more likely reflective of the total population (1). • Systematic - students could pick the first site at random then pick subsequent sites at a set defined distance (1) this would help ensure that the sampling covered a whole range of sediment changes along coast (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
5(b)	**AO3 (4 marks)** Award 1 mark for the initial point (1) and a further mark for further development (1). • Advantage: By using field sketches students can get a quick view of the areas they are working recording key features (1) to support recall later (1). • Advantage: By using field sketches students can highlight features (1) that they want to focus on as part of their study (1). • Disadvantage: Because students are often making sketches quickly, they may not record key features correctly (1) leading to inaccuracies later on (1). • Disadvantage: Because students have different perceptions (1) they may over-exaggerate features (1).	

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	Accept any other appropriate response.	**(4)**

Question number	Answer indicative content
5(c)	**AO3 (4 marks) AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. This question is about the candidates making a judgement of the value of their data presentation techniques in achieving the overall aims of their study. This will depend on what data presentation techniques they used. Candidates are expected to make a judgement on more than one technique. Candidates should identify strengths, weaknesses, and alternative resources which would support them in planning the enquiry.

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	For level 2 responses candidates will need to link the evaluation to th purpose of the study directly. For level 3 responses there should be a greater depth of evaluation.

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Question number	Answer	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

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Question number	Answer	k
6(ai)	**AO3 (1 mark)** Students could use data from a previous study in the same area (1). Alternatives could include: • (GIS) maps • Archive materials from previous studies • Historical data • Data collected from the internet • Met office data • Archive video footage Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(aii)	**AO3 (1 mark)** Award one mark for a suitable disadvantage. • The data could be inaccurate/bias (1). • The data could be from a different location (1). • They may not have collected the data over the same time period (1). In this response candidates must relate the answer for 6aii to the response given in 6ai. If candidates don't put in a response for 5ai and then state a generic disadvantage allow mark. Accept any other appropriate response.	**(1)**

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Question number	Answer	M
6(aiii)	**AO4 (2 marks)** Award 1 mark for working and 1 mark for correct answer to one decimal place 28.2+27.1+34.8=39.5+26.8=156.4/5 31.3	**(2)**

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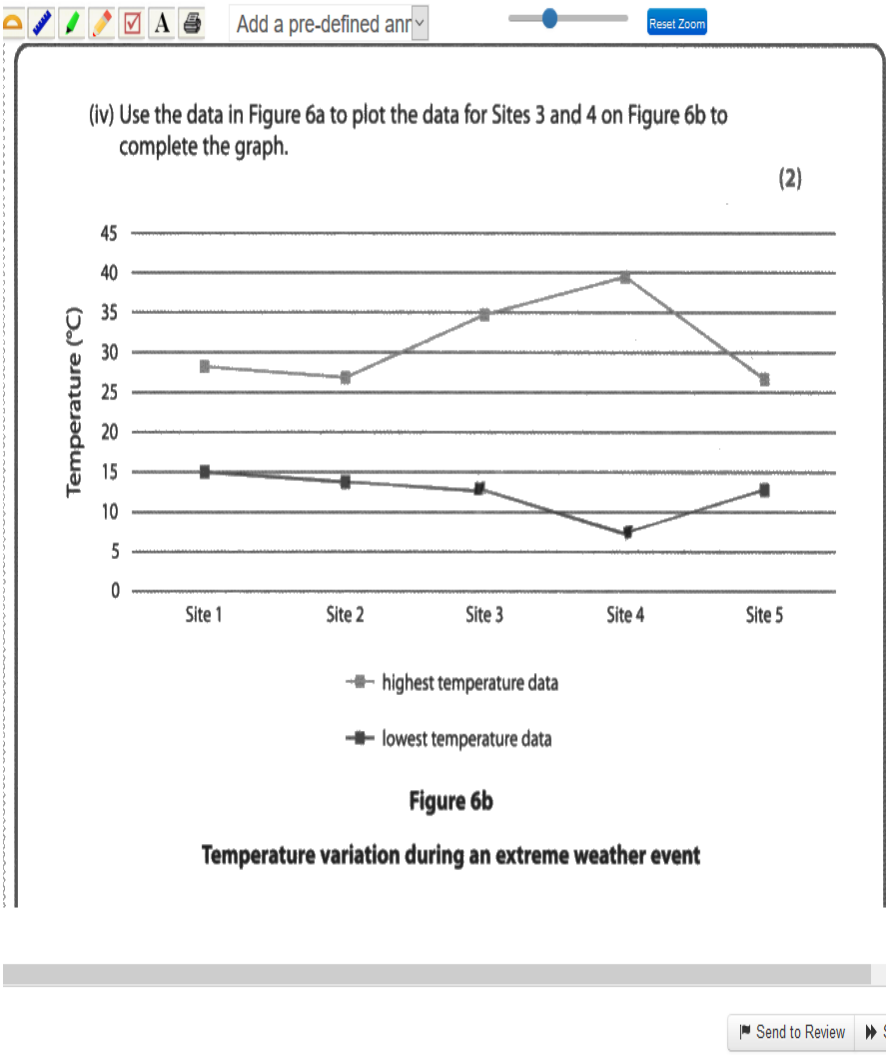
Question number	Answer	k
6(aiv)	**AO4 (2 marks)** Candidates will need to plot all points correctly. 1 mark for correctly plotted points. 1 mark for connecting the points correctly. Plot points are 13.3 and 7.2  	**(2)**

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Question number	Answer	M
6(av)	**AO3 (2 marks)** Award 1 mark for describing an alternative sampling method (1) and 1 mark for further development (1). Stratified – students could use a stratified sampling technique where a proportionate number of observations are taken from each part of an area (1) to reduce the amount of samples needed (1) more likely reflective of the total population (1). Systematic - students could pick the first site at random then pick subsequent sites at a set defined distance (1) this would help ensure that the sampling covered a whole range of temperature changes. (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)	**AO3 (4 marks)** Award 1 mark for the initial point (1) and a further mark for further development (1) • Advantage: By using field sketches students can get a quick view of the areas they are working recording key features (1) to support recall later (1). • Advantage: By using field sketches students can highlight features (1) that they want to focus on as part of their study (1). • Disadvantage: Because students are often making sketches quickly, they may not record key features correctly (1) leading to inaccuracies later on (1). • Disadvantage: Because students have different perceptions (1) they may over-exaggerate features (1).	

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	Accept any other appropriate response.	**(4)**

Question number	Answer indicative content
6(c)	**AO3 (4 marks) AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the level-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. This question is about the candidates making a judgement of the value of their data presentation techniques in achieving the overall aims of their study. This will depend on what data presentation techniques they used. Candidates are expected to make a judgement on more than one technique. Candidates should identify strengths, weaknesses, and alternative resources which would support them in planning the enquiry.

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	For level 2 responses candidates will need to link the evaluation to th purpose of the study directly. For level 3 responses there should be a greater depth of evaluation.

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Question number	Answer	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

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