Investigating river environments- 2

Name: _____

Class: _____

Date:_____

Time:

Total Marks Available:

Total Marks Archived:

Level: IGCSE Mathematics A

Subject: Geography

Exam Board: Edexcel IGCSE Geography- it is however suitable for use by mathematics student of other boards

Topic: Investigating river environments -2

Type: Mark Scheme

To be used by all students preparing for Edexcel IGCSE Geography- Students of other Boards may also find this useful

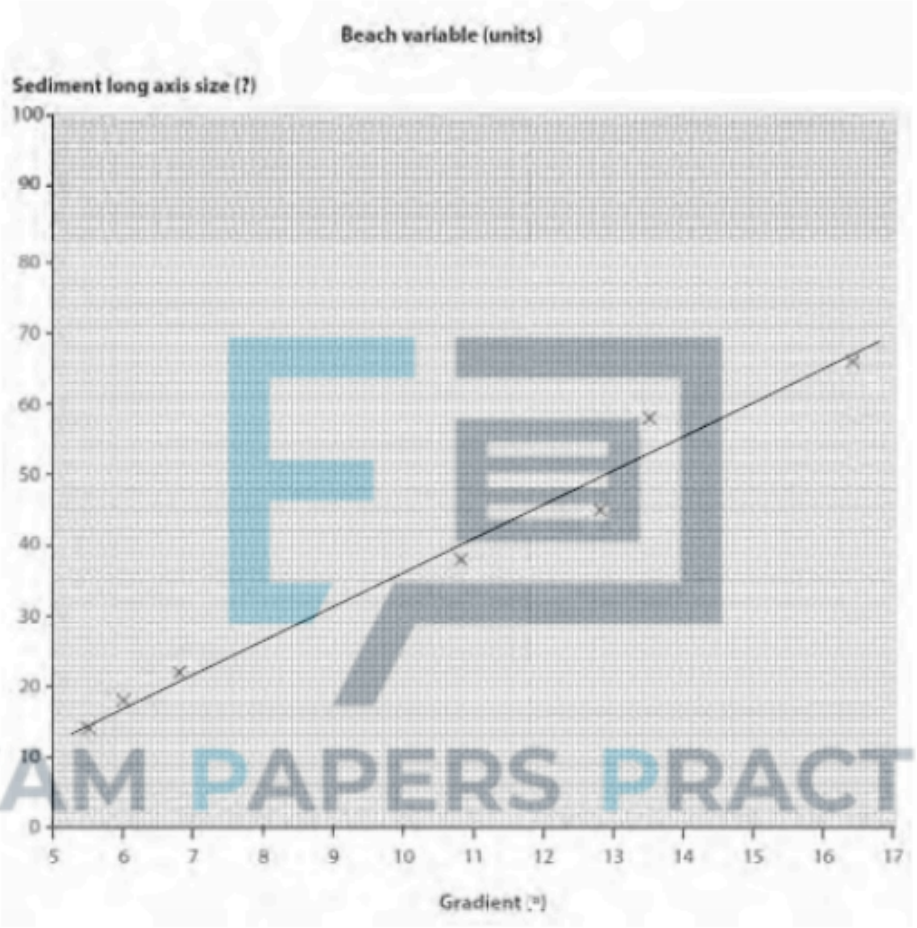
Mark Scheme

Q1.

Question number	Answer	Mark
(i)	**AO3 (1 mark)** A mm (1)	**(1)**

Question number	Answer	Mark
(ii)	**AO4 (2 marks)** Working to show the correct addition of the total width: 15.4 + 13.5 + 12.8 + 12.1 + 10.8 + 6.8 + 6.5 + 6.0 + 5.5 = 89.4 (1) The division of this number by 9, the total number of sampling sites, arriving at a mean, to one decimal place, of 9.9 (1) Maximum of 1 mark for correct answer but no working shown. Accept any other appropriate working.	**(2)**

Question number	Answer	Mark
(iii)	**AO4 (2 marks)** Award 1 mark for each correct plot.	**(2)**

Question number	Answer	Mark
(iv)	**AO4 (1 mark)** Award 1 mark for an accurate line of best fit that shows that the beach sediment long axis size increases with gradient.  	(1)

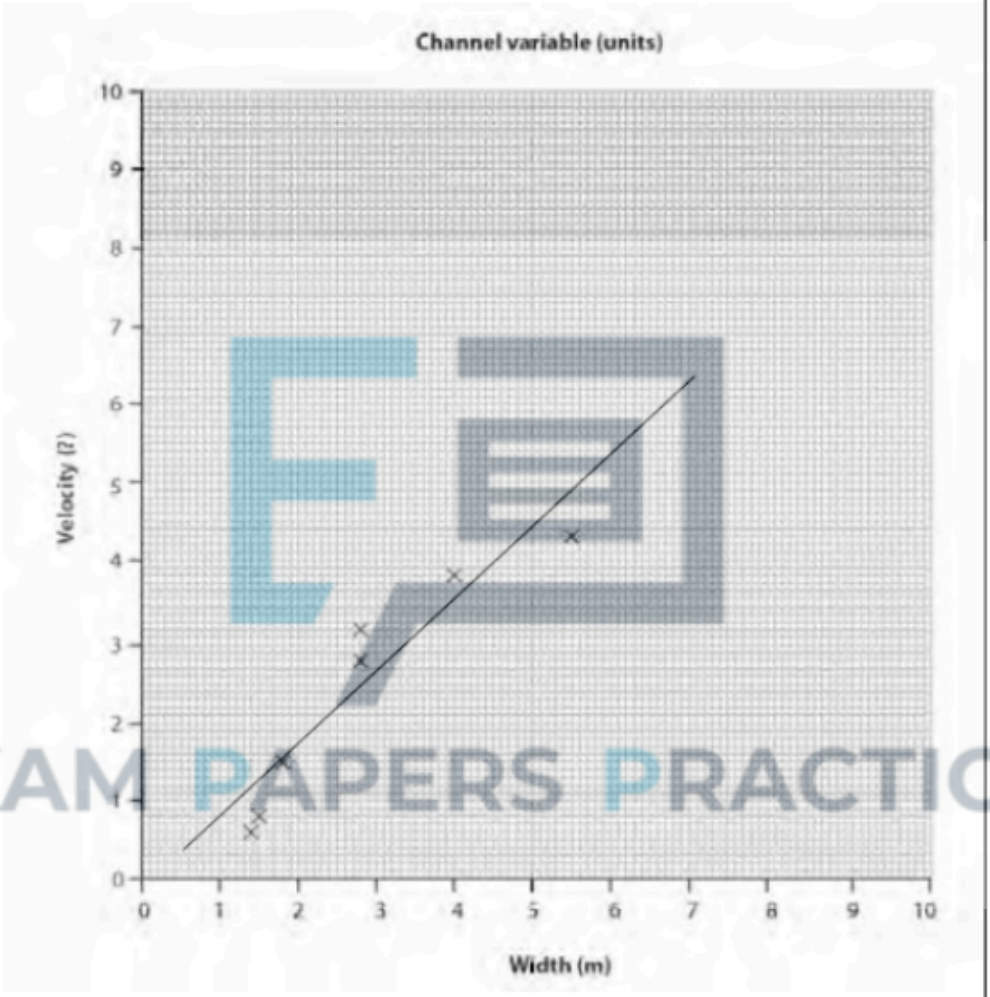
Question number	Answer	Mark
(v)	**AO3 (2 marks)** Award 1 mark for a reason for the relationship and a further 1 mark through description or explanation, up to a maximum of 2 marks. • Sites where beach particles are smaller are more easily compacted (1), which means the beach gradient will be smaller/more gently sloping (1). • There is less friction when waves are passing over smaller sediment (1) so more material will be carried back down the beach (1). • Areas of larger beach sediment allow more water to pass through (1), decreasing the effect of backwash erosion and increasing the formation of sediment into a steeply sloping beach (1). Accept any other appropriate response.	(2)

Q2.

Question number	Answer	Mark
(i)	**AO3 (1 mark)** B m/s (1)	**(1)**

Question number	Answer	Mark
(ii)	**AO4 (2 marks)** Working to show the correct addition of the total width: 1.4 + 1.5 + 1.8 + 2.1 + 2.8 + 2.8 + 3.5 + 4.0 + 5.5 = 25.4 (1) The division of this number by 9, the total number of sampling sites, arriving at a mean, to one decimal place, of 2.8 (1). Maximum of 1 mark for correct answer but no working shown. Accept any other appropriate working.	**(2)**

Question number	Answer	Mark
(iii)	**AO4 (2 marks)** Award 1 mark for each correct plot.	**(2)**

Question number	Answer	Mark
(iv)	**AO4 (1 mark)** Award 1 mark for an accurate line of best fit that shows that width increases with velocity.  	(1)

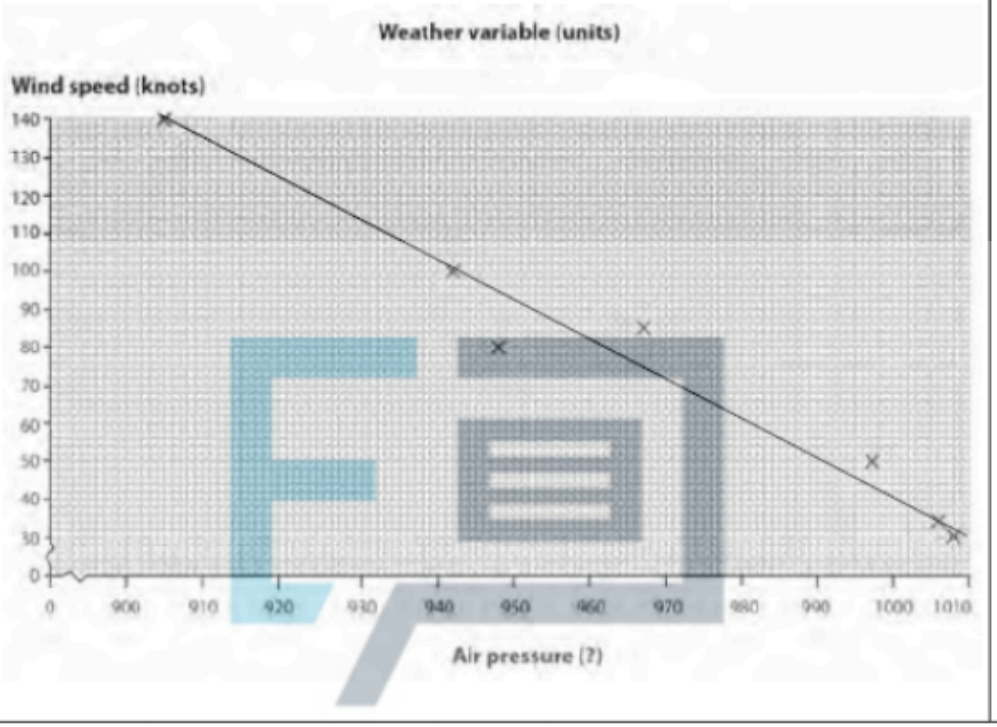
Question number	Answer	Mark
(v)	**AO3 (2 marks)** Award 1 mark for a reason for the relationship and a further 1 mark through description or explanation, up to a maximum of 2 marks. • An increase in velocity will cause more (hydraulic) erosion (1), which will cause the channel to widen (1). • Wider rivers could have a larger hydraulic radius (1), which means that there is less friction, increasing velocity (1). Accept any other appropriate response.	(2)

Q3.

Question number	Answer	Mark
(i)	**AO3 (1 mark)** c mb (1)	(1)

Question number	Answer	Mark
(ii)	**AO4 (2 marks)** Working to show the correct addition of the total width: 30 + 35 + 50 + 70 + 85 + 100 + 125 + 140 + 80 = 715 (1). The division of this number by 9, the total number of days, arriving at a mean, to one decimal place, of 79.4 (1) Maximum of 1 mark for correct answer but no working shown. Accept any other appropriate working.	(2)

Question number	Answer	Mark
(iii)	**AO4 (2 marks)** Award 1 mark for each correct plot.	(2)

Question number	Answer	Mark
(iv)	**AO4 (1 mark)** Award 1 mark for an accurate line of best fit that shows wind speed increases with air pressure.  	(1)

Question number	Answer	Mark
(v)	**AO3 (2 marks)** Award 1 mark for a reason for the relationship and a further 1 mark through description or explanation, up to a maximum of 2 marks. • When air pressure is lower, warm air will rise (1) and cooler air will often move in to replace it more quickly, leading to stronger winds (1). • When air pressure is higher air is descending (1), which reduces the formation of cloud and leads to lighter winds (1). Accept any other appropriate response.	(2)

Q4.

Question number	Answer	Mark
	AO3 (4 marks) Expect 2 points with development. A geology map may be used to identify areas of soft and hard rock (1) and as a result this will enable us to construct hypothesis as to where the most erosion will take place (1) A geology map has helped us identify rock types and their level of porosity (1) this will help us identify areas prone to mass movement and therefore a safety risk (1). Accept any other appropriate response.	(4)

Q5.

Question number	Answer	Mark
	AO3 (4 marks) Expect 2 points with development Live stream data can be used to identify historical trends in data (1) this can be used to prove or disprove hypotheses' (1) Live stream data can help us track the path of an extreme weather event (1) and predict the type of weather data we would expect to get in a certain area (1) Accept any other appropriate response.	(4)

Q6.

Question number	Answer	Mark
	AO3 (4 marks) The topographic map shows a range of features: The river area studied can be identified on the map (1) this helps us to identify where we are going to carry out sampling activities (1) The contour lines on the map (1) help us to identify steep section on the river which may allow us to estimate where the river will be flowing more quickly (1) Natural and Human features can be identified on the map (1) which enables us to identify features that may limit or increase river run off (1) Accept any other appropriate response.	(4)

Q7.

Question number	Answer	Mark
(i)	**AO3 (1 mark)** B Field sketch (1) It cannot be A, C or D as these are all secondary data sources.	(1)

Question number	Answer	Mark
(ii)	**AO3 (1 mark)** Award one mark for suitable piece of equipment. • Tape measure (1) • Stopwatch (1) • Flow meter (1) • Metre rule (1) • Camera (1) • Phone / tablet (1) **Do not credit pen / paper.** Accept any other appropriate response.	**(1)**

Q8.

Question number	Answer	Mark
(i)	**AO3 (1 mark)** B field sketch (1) It cannot be A, C or D as these are all secondary data sources.	(1)

Question number	Answer	Mark
(ii)	**AO3 (1 mark)** Award one mark for suitable piece of equipment. • Tape measure (1) • Clinometer (1) • Ranging pole / measuring pole (1) • Ruler (1) • Camera (1) • Phone / tablet (1) **Do not credit pen / paper.** Accept any other appropriate response.	**(1)**

Q9.

Question number	Answer	Mark
(i)	**AO3 (1 mark)** B field sketch (1) It cannot be A, C or D as these are all secondary data sources.	**(1)**

Question number	Answer	Mark
(ii)	**AO3 (1 mark)** Award one mark for suitable piece of equipment. • Rain gauge (1) • Thermometer (1) • Hygrometer (1) • Anemometer (1) • Camera (1) • Phone / tablet (1) **Do not credit pen / paper.** Accept any other appropriate response.	**(1)**