1.7 Weather Hazards: Test Pack

AQA 8035 · Calculator allowed · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 This question is about the global atmospheric circulation.

(a) State what is meant by the global atmospheric circulation. **(1)**

(b) State whether air pressure at the Equator is typically high or low, and give one resulting weather effect. **(2)**

(Total for Question 1 is 3 marks)

2 Table 1 shows the estimated hourly rainfall recorded at a UK weather station during a six-hour period of a storm.

Hour	1	2	3	4	5	6
Rainfall (mm)	8	14	22	26	19	11

(a) Calculate the total rainfall recorded over the six hours. **(2)**

(b) Calculate the mean (average) hourly rainfall over the six-hour period. **(2)**

(Total for Question 2 is 4 marks)

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3 Explain how improved building design can reduce the risk to people from strong winds during a tropical storm.

(Total for Question 3 is 3 marks)

4 Suggest TWO reasons why the effects of Hurricane Katrina were so severe, even though the USA is a high-income country.

(Total for Question 4 is 4 marks)

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Mark scheme · 1.7 Weather Hazards: Test Pack

Question 1

(a) the worldwide system of air movement that transfers heat energy from the Equator towards the poles, oe — **B1**

(a) Answer: The worldwide system of air movement that transfers heat energy from the Equator towards the poles.

(b) low pressure — **B1**

(b) warm air rises, cools and condenses, causing high rainfall/frequent thunderstorms, oe — **B1**

(b) Answer: Low pressure; warm air rises, cools and condenses, causing high rainfall and frequent thunderstorms.

Question 2

(a) 8 + 14 + 22 + 26 + 19 + 11 seen, oe — **M1**

(a) 100 mm cao — **A1**

(a) Answer: 100 mm.

(b) 100 / 6 seen, oe — **M1**

(b) 16.7 mm (accept 16.6-16.7 mm) cao — **A1**

(b) Answer: 16.7 mm per hour.

Question 3

buildings can be designed with reinforced roofs and hurricane straps/shutters, which are less likely to be torn off or broken by strong winds, oe — **B1**

buildings can be raised on stilts/elevated foundations in flood-prone coastal areas, oe — **B1**

this reduces flood damage from a storm surge and reduces the chance of structural collapse, protecting the people inside, oe — **B1**

Answer: Buildings can be designed with reinforced roofs, hurricane straps or shutters, which are less likely to be torn off by strong winds, and can be raised on stilts in flood-prone coastal areas, reducing storm-surge damage and the chance of structural collapse.

Question 4

reason 1, e.g. New Orleans lies mostly below sea level, protected by levees, so when the levees failed, water could not drain away and flooding was prolonged, oe — **B1**

linked detail, e.g. this made the flooding far more severe and long-lasting than in a city on higher ground, oe — **B1**

reason 2, e.g. the evacuation and emergency response were widely criticised as too slow, leaving many, particularly poorer residents without cars, unable to leave in time, oe — **B1**

linked detail, e.g. showing that even a high-income country's disaster impact depends on local planning, infrastructure and response, not wealth alone, oe — **B1**

Answer: New Orleans lies mostly below sea level and relies on levees for protection, so when the levees failed the water could not drain away, prolonging the flooding; the evacuation and emergency response were also widely criticised as too slow, leaving many residents, particularly poorer people without cars, unable to leave in time, showing that impact depends on local planning and response, not wealth alone.

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