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91007



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Level 1 Geography, 2017

91007 Demonstrate geographic understanding of environments that have been shaped by extreme natural event(s)

9.30 a.m. Thursday 23 November 2017
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate geographic understanding of environments that have been shaped by extreme natural event(s).	Demonstrate in-depth geographic understanding of environments that have been shaped by extreme natural event(s).	Demonstrate comprehensive geographic understanding of environments that have been shaped by extreme natural event(s).

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–14 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Merit

TOTAL

17

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INSTRUCTIONS

In the box below, name ONE type of **extreme natural event**, and an **environment case study (studies)** in which it has occurred, that you will use to answer ALL of the questions in this booklet.

Extreme natural event: Hurricane //

Environment case study (studies): Hurricane Katrina 2005 US (New Orleans) //

QUESTION ONE: NATURAL PROCESSES

Read the geographic concept below and refer to it when answering this question.

Geographic Concept

Processes are a sequence of actions, natural and / or cultural, that shape and change environments, places, and societies. Processes vary in time and space, and in magnitude (size) and frequency.

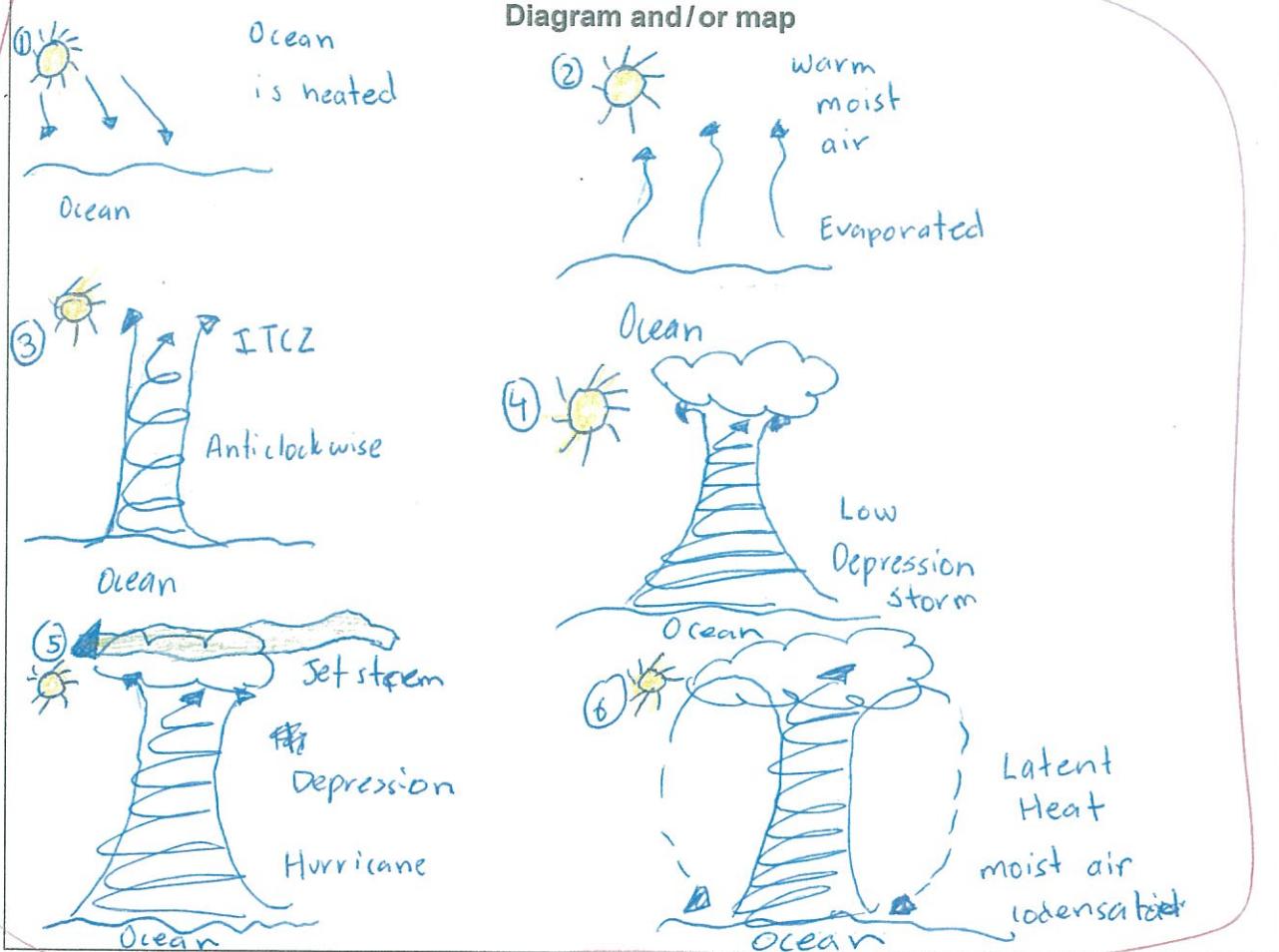
Processes are studied by geographers to help explain features of our world. These processes may cause extreme natural events that occur **above** the earth's surface, **on** the earth's surface, or **below** the earth's surface.

Fully explain the **natural** processes that operated to produce the extreme natural event in your environment case study (studies).

In your answer, include geographic terminology, the geographic concept of processes, with integrated detailed supporting evidence from your environment case study (studies), and a relevant supporting diagram and/or map.

PLANNING (OPTIONAL)

Process of Hurricane



The process for Hurricane Katrina starts off with the ocean being heated like shown in diagram 1. The ocean is heated up with the minimum temperature of 26.5°C but whereas for Hurricane Katrina it was over 30°C . ~~The next step is that the water~~ Hurricanes usually generate around the equator because it is most warmest part of the ocean. The next step is that the warm moist air is evaporated causing the Intertropical convergence zone to happen. Which is the bit where the northern and the southern air meets. This process causes the coriolis to happen this is when rotation of the air. This happens according to the earth's rotation. Because the hurricane Katrina was in the northern hemisphere the air would go anticlockwise but if it was in the southern it would go clockwise.

would go clockwise. The both northern and southern air repel against each other. This process is shown in both diagram 2 and 3. After the coriolos occurs this when it starts to form a storm. The moist air has been sucked out and this causes a low depression tropical storm. This is when it goes cloud and starts to rain more. Hurricane Katrina originally started in the Atlantic Ocean near the African coast line then it moved west to Gulf of Mexico. Jet streams are high currents rotating around the earth's equator and when it hits a low depression it sucks out all the air and putting more pressure onto it making it form a hurricane. Like shown in diagram 5 it hits a low depression and sucks out all the air. Hurricane Katrina started 23rd August 2005 within the south Bahamas with 20ft deep and 644km and with the wind speed of 209kph. In order for an hurricane to survive it needs heat. Hurricane creates latent heat which is when the moist air condensates making it have heat. It goes round and round until it eventually dies out like shown in diagram 6. These are the processes which cause a Hurricane and caused the Hurricane Katrina.

QUESTION TWO: ENVIRONMENTS

Read the geographic concept below and refer to it when answering this question.

Geographic Concept

Environments may be natural and / or cultural. They have particular characteristics and features which can be the result of natural and / or cultural processes. The particular characteristics of an environment may be similar to or different from another. A cultural environment includes people and the built environment.

Fully explain how ONE cultural characteristic (feature) OR ONE natural characteristic (feature) has made your environment case study (studies) more vulnerable to your extreme natural event.

Cultural or natural characteristic: Natural - (location of New Orleans)

In your answer, include geographic terminology, the geographic concept of environments, with integrated detailed supporting evidence from your environment case study (studies).

PLANNING (OPTIONAL)

Location of New Orleans

- carribean sea
- Gulf of Mexico
- Mississippi river
- Lake pontachtrain
- Levees / pumps

One ~~way~~ natural characteristic that has made New Orleans more vulnerable to Hurricane Katrina is that the location of New Orleans.

The warm moist subtropical climate of ~~New Orleans~~ ~~USA~~ ~~23.5°C~~ near the tropic of cancer making it warm. ~~Now~~ New Orleans is located between Caribbean sea and the Gulf of Mexico. Due to the fact that it is located near warm bodies of water it makes it vulnerable to generate an hurricane because hurricanes need warmth. Also New Orleans is surrounded by the Mississippi river which is the 4th largest river in the whole world and the lake Pontchartrain. This makes storm surges and easy to flood up the area. Lastly because the fact that it is located between all these bodies of water, New Orleans has been built below sea level.

This means they have levees (538k) and pumps (158). This means it makes it hard for water ~~area~~ to escape the city and to drain the city if the levees don't work. The location of New Orleans had made it vulnerable to the hurricane and made it a bit more into an natural disaster. The environment was surrounded by lots of warm water and it was built below sealevel. //

ASSESSOR'S
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M6

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The examination continues on the following page.

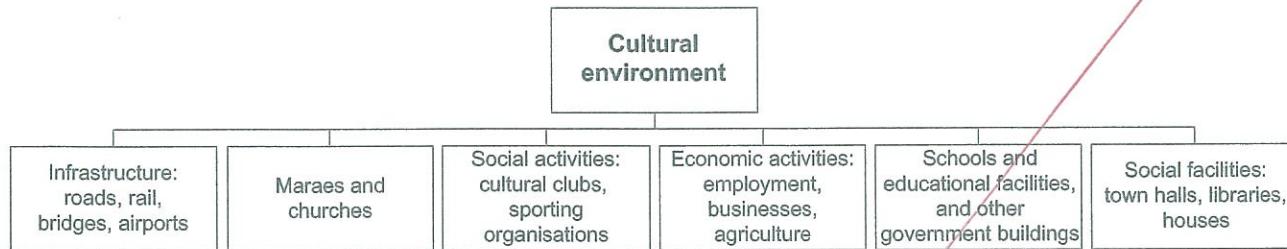
QUESTION THREE: CHANGE

Read the geographic concept below and refer to it, as well as the diagram, when answering this question.

Geographic Concept

Change involves any alteration to the natural or cultural environment. Change can be spatial and/or temporal. Change is a normal process in both natural and cultural environments. It occurs at varying rates, at different times, and in different places. Some changes are predictable, recurrent or cyclic, while others are unpredictable or erratic. Change can bring about further change.

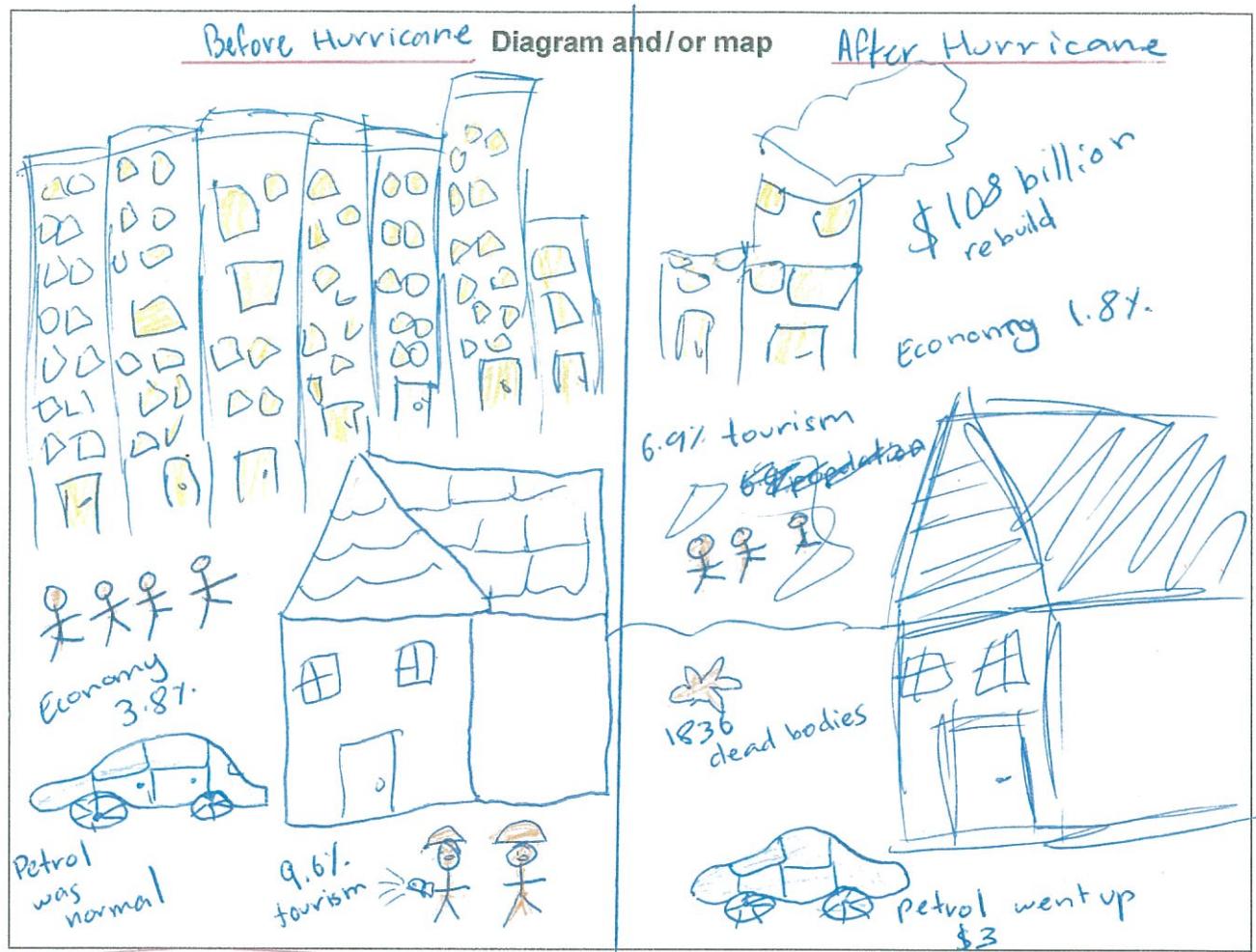
A cultural environment can be made of the following characteristics:



Fully explain the effects of your extreme natural event on the **cultural** environment of your case study (studies).

In your answer, include geographic terminology, the geographic concept of change, with integrated detailed supporting evidence from your environment case study (studies), and a relevant supporting diagram and/or map.

PLANNING (OPTIONAL)



The effects on Hurricane Katrina on the cultural environment had made a change to most the things in country. The hurricane had caused a huge amount of destruction on the land leaving it with \$108 billion dollars USD for reconstruction and \$81 billion just went for building work. This was one of most expensive extreme natural event that has occurred. The country before the the hurricane economy ~~great~~ had gone up by 3.8% but after the hurricane it had dropped to 1.8%. This is change in the economy and it had changed after the hurricane. The hurricane had effected 40% of Louisiana sugar crops and 50 chemical plants. It was 25%.

of the US chemicals. The Hurricane had also destroyed 12 casinos which was a huge loss because they ~~went~~ earnd about 1.8 million USD a year. The oil production was effected by 19% making the prices go up. It had changed to \$3 a barrel and mostly up to \$5 a gallon. This had changed because due to the hurricane the oil was effected and people wanted petrol to travel and got out of the city so there was a shortage so the rised the price. Hurricane had killed 1836 people and 70% was 60 and over who were killed. This had scared of the people because in 2008 the population was only 72%. pre katrina. This the hurricane had changed the population and the amount of people that had lived there. Before the hurricane the tourism rate was 9.6% but after the hurricane it had dropped to 6.9% because tourist weren't concerned if it was safe or not to go. This was change to country because that was one of the ways they made money but know due to the hurricane they stopped getting that much money. All of these changes were made after the hurricane because things need to be cleaned and settled and these changes changed a lot of things around the country.

M6

Merit exemplar 2017

Subject:		Geography	Standard:	91007	Total score:	17
Q	Grade score	Annotation				
1	M5	The candidate response is a partial explanation of the natural processes that operated to cause Hurricane Katrina. The answer includes some detailed supporting evidence. Some parts of the process lack explanation (i.e. "it goes round and round until it eventually dies out"); however, most are explained with evidence. This satisfies the requirement for a partial explanation and an M5 grade. For M6, each stage of the natural processes (as shown in the diagram) should be fully explained with supporting evidence.				
2	M6	The candidate shows in-depth understanding of how New Orleans' location made it vulnerable to hurricanes, in this case Hurricane Katrina. Three aspects of the location were explained with detailed evidence (latitude, location in relation to the Mississippi River/Lake Pontchartrain, and its location below sea level). An E7 response required some insight and clearer links to the idea that New Orleans is a cultural environment. The final sentence "the environment" could have been developed further to show evidence of conceptual understanding.				
3	M6	The candidate fully explains the effects of the hurricane on New Orleans with detailed supporting evidence. The impact on many different aspects (economy, population, tourism, etc) of the cultural environment is explained. The candidate attempts to use the concept of change in the final sentences; however, these are sweeping general statements and do not demonstrate the insight required for an E7 grade to be awarded.				