THE GREAT ICE STORM OF 1998 ASSIGNMENT

CGC1D1 – Grade 9 Canadian Geography - Mr. A. Wittmann

Name: _____   Section: _____   Date: _____

Marking Scheme	
Part B: Knowledge/Understanding	/ 10
Part C: Thinking/Inquiry	/ 8
Part D: Application	/6
Part D: Communication	/6

Part A: Read the following article from www.thecanadianencyclopedia.ca

The ice storm of 1998 was one of the largest natural disasters in Canadian history. Between 4 and 10 January 1998, sections of the St. Lawrence Valley from Kingstonto Québec's Eastern Townships received up to 100 mm of ice pellets and freezing rain — more than double the icy precipitation normally received in those areas in a whole year. The storm claimed as many as 35 lives, injured 945, and resulted in the temporary displacement of 600,000 people. Several roads were shut down and massive power outages occurred, cutting off electricity for nearly 1.4 million customers in Québec and over 230,000 in eastern Ontario. The total financial cost of the storm is estimated at $5.4 billion.

What Caused the Storm

Like other major ice storms that have affected the Lake Ontario and St. Lawrence region, the storm resulted from a combination of low-pressure warm air currents from the Gulf of Mexico and high-pressure cold currents from the Arctic. When these two currents collided, the warm air rose above the cold; the precipitation consequently fell as rain but froze as it reached lower altitudes or hit the ground.

Impact of the Storm

Throughout the storm and its immediate aftermath, approximately 2.6 million people — 19 per cent of all Canadian employees—were impeded or prevented from travelling to work. Though Kingston and Ottawa were hit hard, the majority of the affected workers were in Québec, which suffered the most severe economic costs of the storm. Small businesses and retailers were also severely impacted, as commercial activity ground to a halt in some communities.

Despite the short-term economic costs experienced by cities, communities outside of built-up urban zones were the ones most adversely impacted by the storm. The affected area was home to approximately one quarter of all Canadian dairy cows, whose owners faced major challenges when the electrical grid failed. Many cattle became sick, as it was impossible to feed or milk. Furthermore, because local processing plants were shut down, over 10 million litres of milk, valued at about $5 million, had to be discarded.

The maple syrup industry was also severely affected. More than one fifth of Canada's syrup-producing tree taps were severely impacted by the storm. Countless tree branches and pipes used to channel maple sap collapsed under the weight of the ice, and some producers in Québec lost virtually their entire sugar bush. The

industry's losses in income were likely in the tens of millions of dollars for 1998 alone, and the storm's damage was so extensive that many estimated it would take years or even decades for the industry to fully recover.

Response to the Storm

       With several municipalities calling a state of emergency, the federal government deployed the Canadian Forces to provide shelter and medical care, as well as assistance with the restoration of the power grid. Over 15,000 personnel were deployed in total, making "Operation Recuperation" the largest peacetime deployment of troops in Canadian history.Research conducted since the storm has raised the concern that there may be a connection between climate change and extreme weather events such as the ice storm.

Figure 1

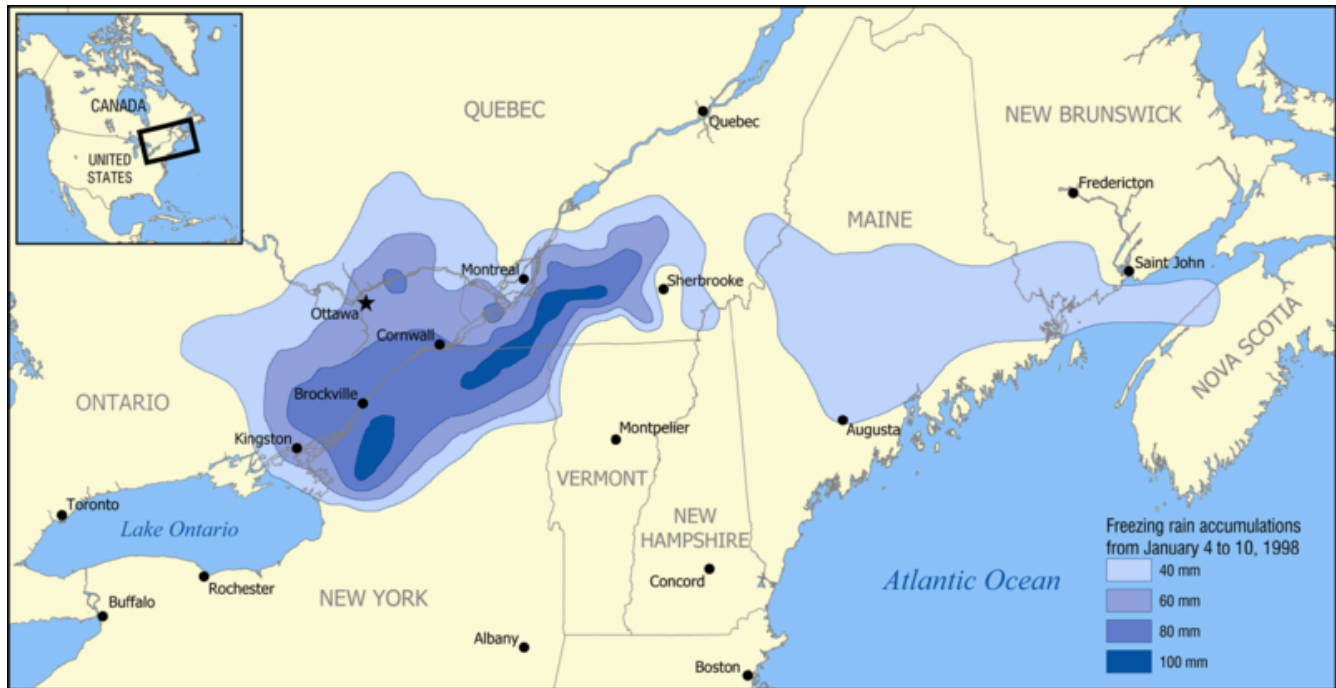| Province / State	Number of customers without power
Quebec	1,393,000
Ontario	232,000
New Brunswick	28,000
Nova Scotia	20,000
Maine	315,000
New Hampshire	67,586
Vermont	33,200
New York	130,000

Figure 2

Part B: Answer the following questions, to check your understanding. (10 marks)

1. Describe the climatic events and conditions which caused the ice storm of 1998. (4 marks)

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2. Describe the impact of the storm on: (4 marks)

a) people's lives _____

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b) power lines _____

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c) trees _____

_____

d) animals _____

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3. What was done to help the people affected? (2 marks)

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Part C: Answer the following questions, to analyze and apply the information. (8 marks)

1. By using Figure 2, determine how many people were affected: (3 marks)

In Canada   _____

In the United States   _____

In total   _____

2. Using Figure 2, construct a pie graph that shows the percentage of people affected by the ice storm in each province and state. (5 marks)

Part D: Answer the following questions, to demonstrate your application skills. (6 marks)

1. In a brief paragraph, explain what you and your family could do, to prepare for a disaster like the ice storm of 1998. (6 marks)

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Part E: Answer the following questions, to demonstrate your communication skills. (6 marks)

2. In a brief paragraph, identify and explain how three other weather events could affect your life. (6 marks)

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