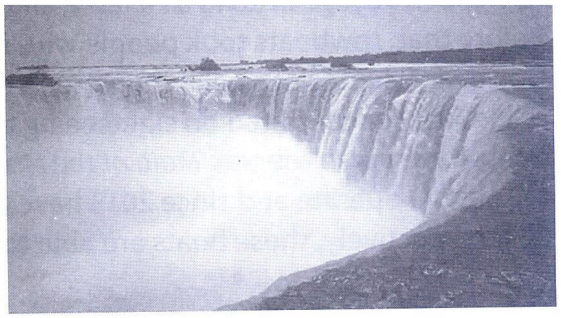
Niagara Falls

The Niagara Falls, on the Niagara River on the border between Ontario, Canada, and New York state, US, are one of North America's most famous spectacles.

A



The Falls are in two main parts, separated by Goat Island. The larger part, on the Canadian bank, is Horseshoe Falls; its height is 185 feet and the length of its curving crest line is about 2,200 feet. The American Falls, adjoining the right bank in the US, are 190 feet high and 1,060 feet wide.

The water that runs over the falls comes from the Great Lakes. Ninety percent of the water goes over the Horseshoe Falls. Originally, as much as 5.5 billion gallons of water per hour went over the Falls and, from 1842 to 1905, the site of the Falls receded upstream at an average rate of about 5.5 feet per year. Today the amount is controlled by the Canadian and American governments to slow erosion.

B

The first known image of Niagara Falls is an engraving by an unidentified Dutch printmaker which was first published in 1697 in a book by Father Louis Hennepin, a priest accompanying a French expedition to America. Alongside the engraving, Hennepin provided a description of the Falls, suggesting it to be over six hundred feet tall, and audible fifteen leagues away (a distance that could be the equivalent of a 15-hour walk). This turned out to be a wild exaggeration as the Falls in fact rise 170 feet. However, as the first European reporter to have seen the Falls, Hennepin's description is significant for the fact that it dominated the collective imagination of the Falls in the century to come.

C

In 1848, for the first time in recorded history, the falls ran dry. The river bed started drying quickly, leaving fish and turtles floundering. People came from miles around to explore the riverbed; they found things that had been hidden for years such as artefacts of the War of 1812. This phenomenon occurred due to strong westerly winds keeping water in Lake Erie, along with an ice jam that dammed the river near Buffalo, New York. Below the Falls, workers were able to head out onto the riverbed and clear away rocks which had been a navigation hazard to the steamboat, Maid of the Mist. It is estimated that the river stopped for 30–40 hours in total.

Later, in 1969, the US Army Corps of Engineers built a series of dams which brought the water flow over the American Falls to a small trickle. This was in order to enable a study of the rock formations at the crest of the Falls and see whether there was any way to remove the rock at the base of the American Falls. In the end, the engineers decided to let nature take its course.

D

Engineer Charles Ellet completed the first bridge across the Falls in 1948. Seven years later John Roebling oversaw construction of another suspension bridge, this one with two levels: one for carriages and the other for locomotive traffic, allowing the Grand Trunk Railway to connect from Canada to the USA. Before it was built, there was widespread doubt that a suspension bridge would be able to bear the weight of a locomotive; no bridge of this kind had ever done this. Roebling's bridge cost $450,000 and became one of the world's most famous bridges.

Another famous attraction in Niagara Falls is the steamboat, the *Maid of the Mist*. This boat made its maiden voyage in 1846 as a ferry, charging to transport people, cargo, and mail across the river. Before that, rowboats took people who needed to get across the Niagara river below the Falls. However, when Ellet's newly constructed bridge began to diminish its business in 1848, the *Maid of the Mist* concentrated on sightseeing and took visitors very close to the Horseshoe Falls. Several boats have taken the title *Maid of the Mist* since then, and to this day, *Maid of the Mist VI* and *Maid of the Mist VII* operate and since 2013 have been leaving from the US side of the Falls only. At 74 ft and 80 ft respectively, these boats are able to carry 600 visitors a piece, right to the base of the Falls.

E

It is often asked why the water of the Niagara Falls seems to take on an aquamarine colour, which is especially intense on sunny days. The reason is that the oxygen and mineral rich waters provide a conducive environment for the growth of algae called diatoms. The bodies of diatoms behave like prisms, reflecting a sparkling aquamarine. Minerals also contribute to the water's colour; dissolved limestone, shale and sandstone form salts that tint the river, while clean and well-oxygenated water helps this effect show through.

The foam in the water at the base of the Falls is not a man-made phenomenon. It is actually calcium carbonate from the mist as it evaporates while going over the Falls. This mixes with decaying diatoms and other algae to produce the foam. Moving further downstream, it remixes with the water and disappears. While in the 1950s and 1960s there was scum from phosphates and other pollutants, this is not the case today.

Action plan for *Multiple-choice*

1. If the *Multiple-choice* questions are the first task for a text, read the text quickly first to get an idea of the general structure and information in the text.
2. Read each question or incomplete statement and the options A–D.
3. Scan the text to find the part of the text you need and read for more detail to find the answer.
4. Reread all options again and choose the one you believe to be correct.

TIP Be careful – the incorrect options may use similar wording or synonyms for what is in the text but they will be clearly wrong. There is only one correct answer.

TIP These questions will follow the order of the text.

TIP Do not answer the questions by using your general knowledge – you have to find the information in the text.

Questions 33–36

*Choose the correct letter, **A**, **B**, **C** or **D**.*

Write the correct letter in boxes 33–36 on your answer sheet.

33 Hennepin's account of his visit to Niagara Falls

A understated the scale of the Falls.
B influenced many people's impression of the Falls.
C conflicted with the illustration that accompanied it.
D attracted criticism from locals at the time it was written.

34 What caused the event that happened at the Falls in 1848?

A A transport company was able to assess the volume of water.
B The tourist industry took action in order to attract more people.
C A natural phenomenon caused the source of the falls to be blocked.
D Engineers held back the falls in order to complete their research.

35 Roebling's bridge was remarkable because

A it consisted of two separate levels.
B it was inexpensive for a bridge of its kind.
C it was the first bridge built across the Niagara Falls.
D it was the first bridge of its kind to carry a train.

36 What causes the water of the Falls to be foamy?

A A combination of naturally-occurring substances.
B The pressure of dropping from a height.
C A problem further up the river.
D Pollution from industry.

Advice

Use distinctive information in the incomplete statement / question to help you find the relevant part of the text: Look for 'Hennepin' (33), '1948' (34) etc.

***33** Check each of these options against the text, e.g. did Hennepin say the Falls were larger or smaller than they really were?; Why was Hennepin's account significant?*

***34** The question asks, 'What caused...'. A transport company, tourists and engineer are all mentioned in this section of text but the key words are 'occurred due to...'*

***36** Note that an option may be mentioned in the text but if you read further, you can discount it (e.g. 'this is not the case today').*