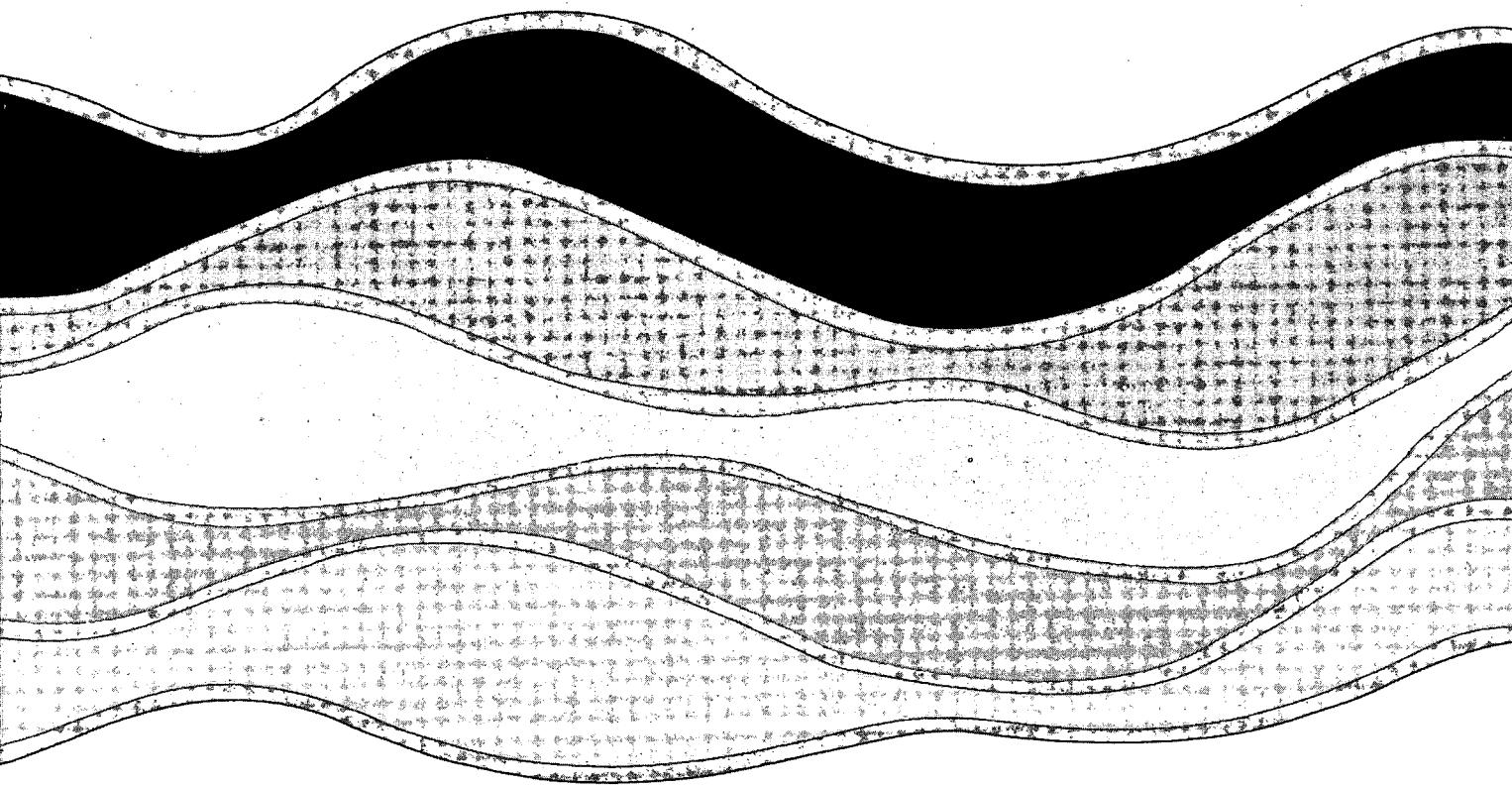
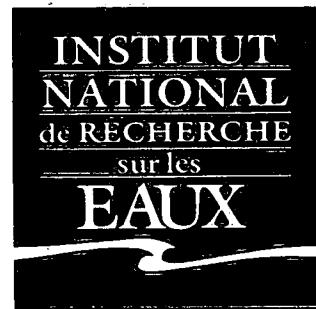
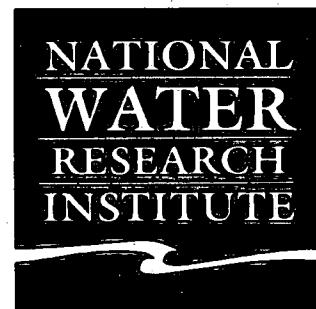


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**THE HAMILTON HARBOUR CHALLENGE,
A COMPUTER QUIZ**

N.A. Rukavina and R.A. Duffield

NWRI Contribution No. 92-70

THE HAMILTON HARBOUR CHALLENGE, A COMPUTER QUIZ

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NWRI Contribution No. 92-70

MANAGEMENT PERSPECTIVE

The Hamilton Harbour Challenge is a bilingual computer program which tests knowledge of facts and issues related to Hamilton Harbour. It was designed for the 1988 Open House program and was also used in modified form for the Open House in 1992. This report describes the usage of the DOS version of the program and lists the questions and answers in both French and English. It is intended primarily as a guide for teachers who might want to use the program or questions in science or computer classes or as a basis for designing a quiz of their own.

SOMMAIRE À L'INTENTION DE LA DIRECTION

Le Défi du port de Hamilton (Hamilton Harbour Challenge) est un programme informatique bilingue qui met à l'épreuve les connaissances quant aux questions liées à ce port. Ce programme a été conçu pour les Jours d'accueil de 1988, et une version modifiée a servi pendant les Jours d'accueil de 1992. Ce rapport décrit l'utilisation de la version DOS du programme et fournit des questions et des réponses, en français et en anglais. Il s'agit essentiellement d'un guide à l'intention des enseignants, qui pourraient se servir du programme ou des questions pendant les leçons de science ou d'informatique ou pour préparer leur propre épreuve.

ABSTRACT

The Hamilton Harbour Challenge is a computer program designed to test knowledge of facts and issues related to Hamilton Harbour. It runs interactively in English or French on a Cyber mainframe computer or PC/MS-DOS computer, and consists of randomly-selected, multiple-choice questions about harbour geography, history, processes, usage and jurisdiction. Answers are stored in a computer file and used to provide a performance rating for the individual user and a source of data for statistical analysis of group response. This report on the usage and content of the program is intended primarily as a guide for teachers who might want to use the program or its questions in science or computer courses or as a basis for designing a quiz of their own.

RÉSUMÉ

Le Défi du port de Hamilton (Hamilton Harbour Challenge) est un programme informatique visant à mettre à l'épreuve les questions liées à ce port. Il s'agit d'un programme interactif qu'on peut exécuter, en anglais ou en français, sur un gros ordinateur de type Cyber ou un ordinateur personnel MS-DOS. Il comprend des questions à choix multiples, qui sont choisies au hasard, au sujet de la géographie du port de Hamilton, de son histoire, de ses processus, de son utilisation et des compétences dont il relève. Les réponses sont stockées dans un fichier informatique et servent à évaluer l'efficacité de l'exécutant; elles constituent également une source de données pour l'analyse statistique des réponses de groupes. Ce rapport portant sur l'utilisation et la teneur du programme est destiné principalement à servir de guide aux enseignants qui pourraient se servir du programme ou de ses questions pour les leçons de science ou d'informatique ou pour préparer leur propre épreuve.

1 INTRODUCTION

The Hamilton Harbour Challenge is a computer program developed at the National Water Research Institute as part of its 1988 and 1992 Open House displays. The program tests knowledge of Hamilton Harbour facts and issues by asking 10 randomly-selected, multiple-choice questions in English or French. Responses are then tabulated to provide a rating of the participant's performance, and stored in a computer file for later use in analysis of public awareness of harbour issues. The program has now been used successfully in several displays and conferences and has been well-received because of its combination of humour and information. This paper is intended to make the program itself and its questions available for general use. It should be particularly useful to secondary-school teachers as a resource for geography, general science and computer courses.

2 BACKGROUND

The computer program is designed around 75 multiple-choice questions about Hamilton Harbour history, geography, statistics, policy and problems. A mix of serious and amusing answers ensures that the user is entertained as well as informed. Use of technical terms has been minimized so that the quiz is suitable for children as well as adults. The program includes both English and French versions, the texts of which are listed in Appendices 1 and 2 respectively. The correct answers are identified in Appendix 3.

Each quiz session consists of 10 randomly-selected questions and takes about 5 minutes to complete. On completion, the program uses a simple four-tier rating scheme (below average, average, above average, and superior) based on past performance to assign a performance rating (Appendix 3). Data on language used, age

group, questions used and responses are saved in a file which may be used for analysis of group response or to identify topics which are poorly known.

The original programming was done in FORTRAN 5 on a Control Data Cyber computer and later converted for operation on a PC/MS-DOS computer. The program disk for PC/MS-DOS operation is a system disk formatted in DOS 5.0 and containing the following files:

ANSI.SYS.....	driver for screen colour
AUTOEXEC.BAT..	the auto-start file which runs the program from drive A when the computer is turned on
CONFIG.SYS.....	configuration file to install ansi.sys
ENGLISH.TXT.....	questions and answers in English (ASCII file)
FRENCH.TXT.....	questions and answers in French (ASCII file)
HQUIZ.DOC.....	this documentation file in ASCII format
HQUIZ.EXE.....	the executable program
RANDOMS.NUM..	the random-number table used for random selection of questions
TAPE20.....	a temporary response file
TAPE21.....	the file which accumulates the responses

3 OPERATION

This section describes the use of the PC/MS-DOS version of the program. To load and run the program, do the following:

1. Place the program diskette in drive A and turn on the computer. A resident AUTOEXEC.BAT file will start the program and set the foreground and background screen colours to white and blue respectively.

2. Answer the prompt for DATE with ENTER to select the displayed date or change the date using the format MM-DD-YY where MM is month, DD is day and YY is year. Answer the prompt for TIME with ENTER to select the displayed time or change the time using the format HH:MM:SS where HH is hours, MM is minutes and SS is seconds. Correct data and time are important because the program uses the date/time reference to label the start and end of a particular session in the response file.
3. The program begins with a prompt for answers to questions about the language of the quiz and user age. In each case, press the appropriate key followed by ENTER.
4. The quiz proper then begins. Select a number from 1 to 5 as the answer and press ENTER.
5. If the answer is correct, CORRECT is displayed and there is a prompt to press ENTER to continue. Otherwise INCORRECT is displayed followed by a listing of the correct answer. Press ENTER to continue.
6. When the quiz is complete after 10 questions, press ENTER to display the score.
7. Press ENTER to restart the quiz for the next user.
8. To restart the quiz if someone abandons it before completion, advance it to the prompt - PRESS ENTER FOR NEXT QUESTION - and press S. This brings up the closing display of scores. Then press ENTER for the opening screen.
9. To stop the quiz and return to DOS, use the following procedure. If the quiz has been run to completion, it will return to the opening screen. Press 9 and respond to the request for a password with RADNR (uppercase essential). This will terminate the quiz and close the results file. Otherwise, use the procedure described in the next step to restart.

10. Note that the quiz can be "broken" with the CTRL-BREAK key combination and should be monitored to discourage that type of tampering. If the quiz is interrupted with CTRL-BREAK, all the data collected since that session of the quiz was started will be lost because the file will not be properly closed. To restart the quiz in these circumstances, type AUTOEXEC and press ENTER or turn the computer off and back on again.

4 THE RESPONSE FILE

TAPE21 logs the responses to the quiz and produces a start time, an end time and one line of record for each user. The following is a sample response file:

START AT 6-01-92 22:56:17
EA10 010 73571403445232284163 52583303 <- User 1
FN 6 410232471163 12592334354213131484 <- User 2
END AT 6-01-92 22:57:48

The user record has the following format:

Column	Content
1	E or F- quiz in English or French
2	A or N- Adult or Non-adult
3,4	the number of correct answers
5,6	the number of incorrect answers
7,8	the number of questions. In general this will be 10 unless the quiz has been aborted before completion.
9,10	the number of the question (the range is 1-75)
11	the number of the answer (the range is 1-5)

The remaining columns follow the same pattern as for 9-11 with 2 columns for the question followed by one column for the answer.

To examine the record of responses, type TYPE TAPE21 followed by ENTER to display the file on the screen or COPY TAPE21 PRN followed by ENTER to produce a printer listing of the file.

5 ACCESS TO THE PROGRAM

The program may be obtained from the authors by mailing an MS-DOS formatted diskette to:

Computing and Programming Services Section
National Water Research Institute
867 Lakeshore Road
Burlington, Ontario L7R 4A6

Attention: R.A. Duffield

Alternatively, it may be downloaded from one of the following Electronic Bulletin Boards in the Burlington-Hamilton-Oakville area:

Amethyst- Hamilton (416-547-3820)
OTB- Oakville (416-844-2483)
Science Teachers' Association- Oakville (416-849-1159)
TFC1- Burlington (416-632-5653)
TFC2- Burlington (416-639-7428)
TFC3- Burlington (416-632-9530)
TS- Hamilton (416-575-9011)

The filename used on the bulletin boards is HQUIZIP.EXE and the file is a compressed file (PKZIP) which can be decompressed by running the program. To install the program in directory C:\HQUIZ on your hard drive, create the directory with C:\MD\HQUIZ, copy HQUIZIP.EXE to that directory, and then decompress by typing HQUIZIP and pressing ENTER or RETURN.

6 CONDITIONS OF USE

The original computer program (HQUIZ.EXE) is identified with the National Water Research Institute and with the authors and should not be altered. The program may be freely copied and distributed providing there is no charge except for the cost of the media used. The source code in Fortran (HQUIZ.FOR, obtainable upon request) may be altered in structure providing that the source of the original code is acknowledged and the names of the original authors are removed from the altered program. We would also appreciate being informed of how and where the program has been used in its original or modified form.

7 ACKNOWLEDGEMENTS

Assistance with questions and testing was provided by CCIW staff members V. Cairns, M. Charlton, J. Coakley, H. Don, M. Gillis, O. Johannssen, L. Kalas, R. Kalinauskas, T. Mayer, A. Mudroch, T. Murphy, S. Painter, T. Reynoldson, K. Rodgers, C. Weseloh and B. Henley (Hamilton Public Library). J. Hodson of the Computing and Programming Services Section converted the program for microcomputer use. Andrée Clement of the Department of the Secretary of State was responsible for the original French translation and Suzanne Ponton of NWRI for editing of the French text in the modified program.

8 GENERAL REFERENCES

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**APPENDIX 1
QUIZ, ENGLISH VERSION**

1. The Burlington Bar or Beach Strip is:
 1. a causeway constructed by the railway
 2. a former beach produced by a glacial lake
 3. a naturally-formed baymouth deposit
 4. a delta produced by streams emptying into Hamilton Harbour
 5. a popular Burlington nightspot
2. Prior to the construction of the ship canal into Hamilton Harbour, there was a natural entrance to the bay:
 1. at the same location as the ship canal
 2. north of the canal
 3. at the extreme south end of the bar near Stoney Creek
 4. at the mid-point of the bar
 5. there was no natural opening
3. Confederation Park, on the Hamilton shoreline of Lake Ontario, is managed by:
 1. Parks Canada
 2. the Hamilton Regional Conservation Authority
 3. the city of Hamilton
 4. the province
 5. Hutch's Dingley Dell
4. La Salle Park on the Burlington shoreline of the bay is named after:
 1. the La Salle automobile which was built in Burlington in the 30's

2. the French word for bay
 3. the explorer La Salle who camped there in 1669
 4. Bernard La Salle who was ceded the tract of land by Joseph Brant
 5. my gal Sal
5. Burlington Heights, the ridge which separates the harbour from Coote's Paradise is:
1. an old sandbar formed during an earlier and higher lake
 2. an embankment of fill constructed for the railway
 3. the remnants of a fortification from the War of 1812
 4. the material excavated from the Desjardins Canal
 5. an earth dam used to regulate the level of water in Coote's Paradise
6. Hamilton Harbour is:
1. an artificial harbour produced by dredging and flooding of former marshlands
 2. a natural bay separated from Lake Ontario by a sandbar
 3. a "kettle" lake formed by the burial and melting of glacial ice
 4. a meteorite crater
 5. none of the above
7. Sediment collects on the bottom of the harbour at a rate of between:
1. 1 metre and 10 metres per year
 2. 10 cm and 1 metre per year
 3. 1 cm to 10 cm per year

4. 1 mm to 1 cm per year
 5. there is no accumulation of sediment
8. Traffic across the Beach Strip has, at various times in its history, crossed the canal on:
1. a ferry boat
 2. a bascule bridge
 3. a lift bridge
 4. a skyway bridge
 5. all of the above
9. Where does Hamilton Harbour rank among all other Canadian harbours in tonnage of shipping handled?
1. last
 2. 4th
 3. 12th
 4. 1st
 5. 20th
10. The management of the harbour is the responsibility of:
1. the Hamilton Harbour Commissioners
 2. the Federal Department of Public Works
 3. the City of Hamilton
 4. the Hamilton Harbour Police
 5. the Hamilton Conservation Authority

11. The maximum depth of the water in the harbour is:

1. 5 metres
2. 10 metres
3. 15 metres
4. 20 metres
5. 25 metres

12. The bottom of the harbour is:

1. mainly sand
2. mainly artificial fill
3. mainly black mud
4. mainly red shale bedrock
5. none of the above

13. The first recorded visit to Hamilton Harbour by a European (Brûlé) was in:

1. 1515
2. 1615
3. 1715
4. 1815
5. 1915

14. During the summer, the harbour water is:

1. a single layer with the same temperature from top to bottom
2. a single layer with a gradual temperature increase from top to bottom

3. a single layer with a gradual temperature decrease from top to bottom
 4. two layers: cold at the top and warm at the bottom
 5. two layers: warm at the top and cold at the bottom
15. A recommended procedure for dealing with the polluted bottom sediments of the harbour is:
1. removal of the polluted sediments by dredging
 2. lime treatment of the sediments
 3. increasing the oxygen level of the harbour water by bubbling oxygen through it
 4. all of the above
 5. none of the above
16. In prehistoric times, the Indians living along the shoreline of the bay were mainly:
1. Hurons
 2. Neutrals
 3. Apaches
 4. Iroquois
 5. Micmacs
17. A well dug in the Burlington Beach strip would hit bedrock at:
1. 1 metre
 2. 5 metres
 3. 10 metres
 4. 50 metres

5. more than 100 metres
18. Development of the harbour by landfill has reduced its water area by approximately:
1. 50%
 2. 25%
 3. 10%
 4. 5%
 5. less than 2%
19. Winds in the harbour are mainly:
1. from the southwest
 2. from the northeast
 3. variable
 4. calm, i.e. there is no wind
 5. none of the above
20. The maximum height of waves in the harbour is:
1. less than 10 cm
 2. 50 cm
 3. 1 metre
 4. 2 metres
 5. more than 5 metres

21. In addition to its use as a commercial harbour, Hamilton Harbour serves as:

1. a natural sewage treatment plant
2. a source of cooling water for the steel mills
3. an area for recreational boating
4. a nesting area for wildfowl
5. all of the above

22. The Canada Centre for Inland Waters which occupies a site on the east shore of the harbour is:

1. a federal government research facility
2. a provincial government research facility
3. a research institute affiliated with McMaster University
4. a private research institute funded by industry
5. a municipal water treatment plant

23. The depth of the dredged channel in the canal connecting the harbour to Lake Ontario is approximately:

1. 5 metres
2. 10 metres
3. 15 metres
4. 20 metres
5. 25 metres

24. The water level of the harbour is:

1. below sea level
 2. at sea level
 3. at 75 metres above sea level
 4. at 175 metres above sea level
 5. none of the above
25. October 30, 1988 was the 30th anniversary of:
1. the opening of the Queen Elizabeth Highway across the Beach Strip
 2. the opening of the Canada Centre for Inland Waters
 3. the opening of Confederation Park
 4. the opening of the Burlington Skyway
 5. the destruction of the old bridge across the canal by the U.S. sandboat "Fitzgerald"
26. The hydrographic chart of the harbour is a map of:
1. water temperature
 2. currents
 3. water depths and navigation aids
 4. all of the above
 5. none of the above
27. How long does it take Hamilton Harbour to flush itself into Lake Ontario?
1. 3 days
 2. 3 weeks
 3. 3 months

- 4. 3 years
- 5. 3 centuries

28. What is the major purpose of the Burlington Canal?

- 1. ship access to the harbour
- 2. an urban fishing hole
- 3. reduction of pollution
- 4. moat between Hamilton and Burlington
- 5. traffic barrier on the West Service Road

29. The major source of the iron in the harbour is:

- 1. acid rain
- 2. the Canada Centre for Inland Waters
- 3. Stelco and Dofasco
- 4. the Burlington landfill site
- 5. the rusting of cannon balls from the War of 1812

30. Since 1700, the size of the Coote's Paradise marsh has been reduced by approximately:

- 1. 4%
- 2. 10%
- 3. 50%
- 4. 60%
- 5. 80%

31. The most important commercial fish species in the harbour in 1900 were:

1. carp, sucker and alewife
2. whitefish, lake herring and lake trout
3. pike, bass and sunfish
4. salmon and tuna
5. yellow perch and johnny darter

32. The Desjardins Canal is:

1. the longest freshwater canal in North America
2. the waterway for the annual Henley rowing regatta
3. Dundas' answer to the Erie Canal
4. the canal connecting the harbour to the lake
5. the French name for the Indian Creek channel

33. Flooding of the Beach Strip in early 1973 occurred because of:

1. uncontrolled pumping of their basements by Beach Strip residents
2. excess discharge from the Dundas Sewage Treatment Plant
3. high water levels and waves
4. a tsunami
5. glacial rebound of the bed of Lake Ontario

34. NWRI is:

1. the Huron name for Burlington Bay
2. the French abbreviation for the Canada Centre for Inland Waters

3. the most toxic pollutant in the harbour
4. the name of Hamilton's waste-treatment facility
5. the National Water Research Institute

35. The presence of iron in the harbour sediments is beneficial because:

1. it is the major source of iron for the steel plants
2. its high density limits the resuspension of sediments by waves
3. it holds the phosphorus in the sediments
4. it increases the oxygen content of the harbour waters
5. it slows down the rusting of steel pilings

36. The Beach Strip which separates the harbour from the lake is:

1. 1 km long
2. 2 km long
3. 7 km long
4. 20 km long
5. 33.5 km long

37. Oxidizing oxygen-poor harbour water with injections of pure oxygen will:

1. cause the gulls to hyperventilate
2. have no effect
3. kill plants
4. make fish sick
5. break down pollutants more quickly

38. The Hamilton Harbour Remedial Action Plan or RAP has adopted an ecosystem approach to environmental management. This means that:

1. priority is given to industrial use of the harbour
2. there will be more filling of the harbour
3. shipping and navigation activities will cease
4. an integrated strategy serving all interests will be adopted
5. the harbour will be reserved exclusively for fishing

39. The Burlington Ship Canal was completed by:

1. 1800
2. 1832
3. 1892
4. 1914
5. 1950

40. The objective of a Remedial Action Plan or RAP is to:

1. assess the current environmental condition of the Area of Concern
2. prepare a plan of action to achieve desired goals
3. keep the public informed of the status of the plan
4. encourage public input
5. all of the above

41. Stelco and Dofasco recycle the following amount of water from Hamilton Harbour every day:

1. 5 million gallons
2. 50 million gallons
3. 100 million gallons
4. 500 million gallons
5. 1 billion gallons

42. The most abundant fish species in the harbour now is:

1. carp
2. sucker
3. whitefish
4. lake trout
5. red snapper

43. In 1987, the number of species of water birds nesting in the east end of the harbour was:

1. 100
2. 50
3. 33
4. 6
5. 2

44. Carroll's Point on the northwest shore of the bay is a:

1. rock point
2. sand spit
3. high bluff of glacial deposits

4. a former causeway now partially submerged
 5. none of the above
45. Researchers study the bottom sediments of the harbour with:
1. grab samples of the surface sediment
 2. sediment cores
 3. echo sounders
 4. underwater TV cameras
 5. all of the above
46. The coarsest bottom sediments in the harbour are found:
1. close to the shoreline
 2. in the deepest water
 3. along the south shore
 4. at the entrance to the canal
 5. inside the CCIW breakwater
47. The two Jesuit priests who visited Hamilton Harbour in 1669 were:
1. Lewis and Clark
 2. Dollier and Galinee
 3. Wayne and Schuster
 4. Radisson and Groseilliers
 5. Levesque and Parizeau

48. Because the earth's crust is still rebounding from the weight of glacial ice which covered this area about 10,000 years ago, Hamilton Harbour is:
1. slowly getting deeper
 2. slowly getting shallower
 3. not affected
 4. crustal rebound? You must be kidding!
 5. deepening in the east end, shoaling in the west end
49. The Around-The-Bay Foot Race was started in:
1. 1669
 2. 1798
 3. 1894
 4. 1911
 5. 1952
50. Echo-sounding surveys of the harbour are useful for:
1. measuring the water depth
 2. identifying the major bottom-sediment types
 3. locating fish
 4. all of the above
 5. none of the above
51. What actions have been undertaken during the past 15 years to clean up Hamilton Harbour?

1. no action, harbour beyond repair!
 2. extensive dredging of polluted sediments
 3. complete separation of the sewage and storm-water drains in Hamilton
 4. reduction in the levels of phosphorus, sewage and industrial waste
 5. establishment of a Royal Commission to study the problem
52. What improvements in the quality of Hamilton Harbour have occurred during the past 15 years?
1. bacterial counts have decreased
 2. more animals are found in the bottom sediments
 3. the number of species of wildfowl has increased
 4. water clarity has improved
 5. all of the above
53. What lives in the depths of Hamilton Harbour?
1. small worms
 2. old tires and beer cans are found but no living organisms
 3. clams, snails and insect larvae
 4. the Hamawatchee monster
 5. sunfish
54. The present site of Stelco and Dofasco was formerly:
1. marshland and open water
 2. a bedrock shelf
 3. prime farmland

4. the former homestead of Pauline Johnson
5. a sandy beach
55. Approximately how many pairs of ring-billed gulls are nesting in the harbour?
1. 20
 2. 50
 3. 500
 4. 25000
 5. 100000
56. Which of the following birds would you normally expect to find around the harbour in the late fall?
1. whooping crane
 2. white pelican
 3. osprey
 4. condor
 5. Canada jay
57. Which of the following aquatic mammals can be found in Coote's Paradise?
1. beaver
 2. mink
 3. muskrat
 4. all of the above
 5. none of the above

58. The volume of industrial and domestic sewage discharged to the harbour every year is:
1. less than 100 million gallons
 2. 350 million gallons
 3. 1.1 billion gallons
 4. 5.3 billion gallons
 5. more than 25 billion gallons
59. The major cause of the decline in the waterfowl population of the harbour over the past 100 years has been:
1. contaminants
 2. over hunting
 3. habitat loss
 4. bird watchers
 5. biological research
60. Coote's Paradise was named after:
1. a waterfowl, the American Coot
 2. an English soldier who hunted there around 1780
 3. Edgerton Coote, the first chairman of the Royal Botanical Gardens
 4. an early fishing resort
 5. a similar area in Norfolk, England
61. At various times in its history, Hamilton Harbour has been called:

1. Macassa
2. Lake Geneva
3. Waquata
4. Burlington Bay
5. All of the above

62. Development of Hamilton Harbour by landfill took place in a number of stages, the most active of which was from:

1. 1891-1915
2. 1915-1941
3. 1941-1965
4. 1965-1983
5. 1983-1987

63. The largest stream draining into Coote's Paradise is:

1. Spencer Creek
2. Grindstone Creek
3. Sulphur Creek
4. Redhill Creek
5. Stoney Creek

64. The Royal Botanical Gardens' property on and near the shoreline of the harbour and Coote's paradise has a total area of:

1. 25 acres
2. 100 acres

- 3. 500 acres
- 4. 1000 acres
- 5. 2000 acres

65. Hamilton and Burlington get their drinking water from and dump their sewage into:

- 1. Lake Ontario
- 2. Hamilton Harbour
- 3. Coote's Paradise
- 4. source from harbour, sewage to Lake Ontario
- 5. source from Lake Ontario, sewage to harbour

66. Ship traffic to Hamilton Harbour increased sharply after 1932 because of:

- 1. the establishment of the Harbour Commissioners
- 2. the opening of the new Welland Canal
- 3. the construction of the canal through the beach strip
- 4. the completion of the Desjardins Canal
- 5. the first dredging of the harbour

67. The harbour water was first officially labelled as polluted because of domestic and industrial sewage discharge in:

- 1. 1893
- 2. 1914
- 3. 1923
- 4. 1947
- 5. 1962

68. The government agency responsible for the quality of Hamilton Harbour water is:

1. the federal government
2. the provincial government
3. the municipal government
4. the Hamilton Harbour Commissioners
5. the Hamilton Conservation Authority

69. The area of Hamilton Harbour is approximately:

1. 2 square km
2. 5 square km
3. 10 square km
4. 20 square km
5. 75 square km

70. The number of worms in the bottom sediments of the harbour is commonly:

1. there are no worms
2. 1 per square metre
3. 100 per square metre
4. 1,000 per square metre
5. more than 10,000 per square metre

71. How many organic contaminants are there in the sediments of Hamilton Harbour?

1. none

2. 10-100
3. 100-1000
4. more than 1000
5. we don't know

72. CCIW divers working in the harbour find that the water:

1. is clearer in the summer than in the winter
2. is clearer in the winter than in the summer
3. is the same in summer and winter
4. always has a visibility of less than 6 inches
5. always has a visibility of more than 6 feet

73. La Salle Park is owned by:

1. the City of Hamilton
2. the City of Burlington
3. the Hamilton Region Conservation Authority
4. the family of Bernard La Salle
5. the Royal Botanical Gardens

74. How much of the harbour shoreline is currently classified as open space?

1. 1%
2. 7%
3. 29%
4. 55%
5. 78%

75. How would you recognize a CCIW survey launch working in the harbour?

1. the boat colours- orange and yellow
2. the red survival suits of the crew
3. the host of TV cameramen and reporters
4. the exotic sampling/sensing/positioning equipment
5. all of the above

**APPENDIX 2
QUIZ, FRENCH VERSION**

1. LES TERMES "BURLINGTON BAR" ET "BEACH STRIP" DESIGNENT
 1. UNE CHAUSSEE CONSTRUITE POUR FAIRE PASSER LA VOIE FERREE
 2. UNE ANCIENNE PLAGE FORMEE PAR UN LAC GLACIAIRE
 3. UN DEPOT NATUREL A L'EMBOUCHURE DE LA BAIE
 4. UN DELTA FORME PAR LES RUISSEAUX SE DEVERSANT DANS LE PORT DE HAMILTON
 5. UNE BOITE DE NUIT TRES FREQUENTEE DE BURLINGTON
2. AVANT QUE L'ON CONSTRUISE LE CANAL MARITIME DANS LE PORT DE HAMILTON, ON TROUVAIT UNE VOIE D'ACCES NATURELLE A LA BAIE
 1. AU MEME ENDROIT QUE LE CANAL MARITIME
 2. AU NORD DU CANAL
 3. A L'EXTREME SUD DE LA BARRE, PRES DE STONEY CREEK
 4. DANS LA PARTIE CENTRALE DE LA BARRE
 5. IL N'Y AVAIT PAS D'ENTREE NATURELLE
3. LES DROITS D'EXPLOITATION DU PARC CONFEDERATION, SUR LES RIVES DU LAC ONTARIO DU COTE DE HAMILTON, APPARTIENNENT A
 1. PARCS CANADA
 2. L'OFFICE DE PROTECTION DE LA NATURE DE LA REGION DE HAMILTON
 3. LA VILLE DE HAMILTON
 4. LA PROVINCE

5. HUTCH'S DINGLEY DELL
4. LE PARC LA SALLE, SUR LES RIVES DE LA BAIE DU COTE DE BURLINGTON, TIRE SON NOM
 1. DE L'AUTOMOBILE LA SALLE CONSTRUITE A BURLINGTON DANS LES ANNEES 1930
 2. DU MOT FRANCAIS QUI DESIGNE UNE BAIE
 3. DE L'EXPLORATEUR LA SALLE QUI A CAMPE DANS LA REGION EN 1669
 4. DE BERNARD LA SALLE, ANCIEN PROPRIETAIRE DES TERRES OCCUPEES PAR LE PARC
 5. DE "MY GAL SAL"
5. BURLINGTON HEIGHTS, L'ECHINE QUI SEpare LE PORT DE COOTE'S PARADISE, DESIGNE
 1. UNE VIEILLE BARRE FORMEE PAR UN ANCIEN LAC PLUS ELEVE
 2. UN REMBLAI CONSTRUIT POUR LE CHÈMIN DE FER
 3. LES RESTES D'UNE FORTIFICATION DE LA GUERRE DE 1812
 4. LES MATERIAUX PROVENANT DU CREUSEMENT DU CANAL DESJARDINS
 5. UN BARRAGE EN TERRE QUI REGULARISE LE NIVEAU DE L'EAU DANS COOTE'S PARADISE

6. LE PORT DE HAMILTON EST

1. UN PORT ARTIFICIEL CREE EN DRAGUANT ET EN INONDANT D'ANCIENS MARECAGES
2. UNE BAIE NATURELLE SEPAREE DU LAC PAR UNE BARRE DE SABLE
3. UN LAC DE CIRQUE FORME PAR LA FONTE D'UNE ENORME PIECE DE GLACE ENFOUIE
4. UN CRATERE METEORIQUE
5. AUCUNE DES REONSES QUI PRECEDENT

7. LES SEDIMENTS SE DEPOSENT AU FOND DU PORT A UN RYTHME ALLANT DE

1. 1 METRE A 10 METRES PAR ANNEE
2. 10 CM A 1 METRE PAR ANNEE
3. 1 CM A 10 CM PAR ANNEE
4. 1 MM ET 1 CM PAR ANNEE
5. IL N'Y A AUCUNE ACCUMULATION DE SEDIMENTS

8. QUEL MOYEN EMPLOYAIT-ON, A DIVERSES EPOQUES, POUR TRAVERSER LE CANAL SUR LA "BEACH STRIP"?

1. UN TRAVERSIER
2. UN PONT A BASCULE
3. UN PONT-LEVIS
4. UN PONT SURELEVE
5. TOUTES LES REONSES QUI PRECEDENT

9. A QUEL RANG SE CLASSE LE PORT DE HAMILTON, PARMI TOUS LES AUTRES PORTS CANADIENS, POUR CE QUI EST DU TONNAGE DES NAVIRES QUI Y ACCOSTENT?

1. DERNIER
2. 4E
3. 12E
4. 1ER
5. 20E

10. LE PORT EST ADMINISTRE PAR

1. LES COMMISSAIRES DU PORT DE HAMILTON
2. LE MINISTERE FEDERAL DES TRAVAUX PUBLICS
3. LA VILLE DE HAMILTON
4. LE SERVICE DE POLICE DU PORT DE HAMILTON
5. L'OFFICE DE PROTECTION DE LA NATURE DE HAMILTON

11. QUELLE EST LA PROFONDEUR MAXIMALE DE L'EAU DANS LE PORT?

1. 5 METRES
2. 50 METRES
3. 10 METRES
4. 100 METRES
5. 25 METRES

12. LE FOND DE L'EAU DANS LE PORT EST PRINCIPALEMENT COMPOSE DE

1. SABLE
2. MATERIAUX DE REMBLAYAGE
3. BOUE NOIRE
4. SCHISTE ARGILEUX ROUGE
5. AUCUNE DES REPONSES QUI PRECEDENT

13. LA PREMIERE VISITE ATTESTEE D'UN EUROPEEN (E. BRULE) DANS LE PORT DE HAMILTON A LIEU EN

1. 1515
2. 1615
3. 1715
4. 1815
5. 1915

14. PENDANT L'ETE, L'EAU DU PORT EST COMPOSEE

1. D'UNE SEULE COUCHE AYANT UNE TEMPERATURE EGALE DE LA SURFACE JUSQU'AU FOND
2. D'UNE SEULE COUCHE DE PLUS EN PLUS CHAude A MESURE QU'ON DESCEND VERS LE FOND
3. D'UNE SEULE COUCHE DE PLUS EN PLUS FROIDE A MESURE QU'ON DESCEND VERS LE FOND
4. DE DEUX COUCHES, LA COUCHE SUPERIEURE ETANT FROIDE ET LA SUIVANTE CHAude
5. DE DEUX COUCHES, LA COUCHE SUPERIEURE ETANT CHAude ET LA SUIVANTE FROIDE

15. QUEL MODE D'INTERVENTION A-T-ON RECOMMANDÉ POUR S'ATTAQUER AU PROBLEME DES SEDIMENTS POLLUES AU FOND DE L'EAU?
1. L'ENLEVEMENT DES SEDIMENTS POLLUES AU MOYEN DU DRAGAGE
 2. LE TRAITEMENT DES SEDIMENTS A LA CHAUX
 3. L'AUGMENTATION DE LA QUANTITE D'OXYGENE DANS L'EAU DU PORT
 4. TOUTES LES MESURES QUI PRECEDENT
 5. AUCUNE DES MESURES QUI PRECEDENT
16. IL Y A TRES LONGTEMPS, LES INDIENS QUI VIVAIENT LE LONG DE LA BAIE ETAIENT PRINCIPALEMENT
1. DES HURONS
 2. DES NEUTRES
 3. DES APACHES
 4. DES IROQUOIS
 5. DES MICMACS
17. SI L'ON CREUSAIT UN PUITS DANS LA BANDE DE TERRE APPELEE "BURLINGTON BEACH", A QUELLE PROFONDEUR ATTEINDRAIT-ON LE SOUS-SOL ROCHEUX?
1. 1 METRE
 2. 5 METRES
 3. 10 METRES
 4. 50 METRES

5. PLUS DE 100 METRES

18. L'AMENAGEMENT DU PORT AU MOYEN DE REMBLAYAGE A REDUIT
L'ETENDUE D'EAU D'ENVIRON

1. 75 P. 100
2. 25 P. 100
3. 50 P. 100
4. 5 P. 100
5. MOINS DE 2 P. 100

19. LES VENTS DANS LE PORT SOUFFLENT PRINCIPALEMENT

1. DU SUD-OUEST
2. DU NORD-EST
3. LES VENTS SONT VARIABLES
4. IL N'Y A PAS DE VENT
5. AUCUNE DES REPONSES QUI PRECEDENT

20. QUELLE EST LA HAUTEUR MAXIMALE DES VAGUES DANS LE PORT?

1. MOINS DE 10 CM
2. 50 CM
3. 1 METRE
4. 5 METRES
5. PLUS DE 10 METRES

21. OUTRE SA VOCATION COMMERCIALE, LE PORT DE HAMILTON SERT
EGALEMENT
1. D'USINE NATURELLE POUR L'EPURATION DES EAUX USEES
 2. DE SOURCE D'EAU DE REFROIDISSEMENT POUR LES ACIERIES
 3. D'ENDROIT POUR LA NAVIGATION DE PLAISANCE
 4. DE LIEU DE NIDIFICATION POUR LES OISEAUX SAUVAGES
 5. TOUTES LES REPONSES QUI PRECEDENT
22. LE CENTRE CANADIEN DES EAUX INTERIEURES, QUI SE TROUVE SUR
LA RIVE DU PORT, EST
1. UN ORGANISME FEDERAL DE RECHERCHE
 2. UN ORGANISME PROVINCIAL DE RECHERCHE
 3. UN INSTITUT DE RECHERCHE RELEVANT DE L'UNIVERSITE
MCMASTER
 4. UN INSTITUT DE RECHERCHE PRIVE FINANCE PAR L'INDUSTRIE
 5. UNE STATION MUNICIPALE DE TRAITEMENT D'EAU
23. LA PROFONDEUR DU CHENAL DRAGUE DANS LE CANAL QUI RELIE LE
PORT ET LE LAC ONTARIO EST D'ENVIRON
1. 5 METRES
 2. 10 METRES
 3. 15 METRES
 4. 20 METRES
 5. 25 METRES

24. LE NIVEAU DE L'EAU DANS LE PORT EST

1. INFERIEUR AU NIVEAU DE LA MER
2. EGAL AU NIVEAU DE LA MER
3. DE 75 METRES AU-DESSUS DU NIVEAU DE LA MER
4. DE 175 METRES AU-DESSUS DU NIVEAU DE LA MER
5. AUCUNE DES REPONSES QUI PRECEDENT

25. LE 30 OCTOBRE 1988 A MARQUE LE 30IEME ANNIVERSAIRE DE

1. L'OUVERTURE DE L'AUTOROUTE QUEEN ELIZABETH LE LONG DE LA "BEACH STRIP"
2. L'OUVERTURE DU CENTRE CANADIEN DES EAUX INTERIEURES
3. L'INAUGURATION DU PARC CONFEDERATION
4. L'OUVERTURE DU "BURLINGTON SKYWAY"
5. LA DESTRUCTION DE L'ANCIEN PONT QUI ENJAMBAIT LE CANAL PAR UN NAVIRE AMERICAIN

26. LA CARTE HYDROGRAPHIQUE DU PORT FAIT ETAT

1. DE LA TEMPERATURE DE L'EAU
2. DES COURANTS
3. DE LA PROFONDEUR DE L'EAU ET DES AIDES A LA NAVIGATION
4. TOUTES LES REPONSES QUI PRECEDENT
5. AUCUNE DES REPONSES QUI PRECEDENT

27. COMBIEN DE TEMPS FAUT-IL POUR QUE LE PORT DE HAMILTON SE VIDE DANS LE LAC ONTARIO?

1. 3 JOURS
 2. 3 SEMAINES
 3. 3 MOIS
 4. 3 ANS
 5. 3 SIECLES
28. QUELLE EST LA PRINCIPALE RAISON D'ETRE DU CANAL DE BURLINGTON?
1. PERMETTRE AUX NAVIRES D'ENTRER DANS LE PORT
 2. FOURNIR UN LIEU DE PECHE EN MILIEU URBAIN
 3. REDUIRE LA POLLUTION
 4. SEPARER HAMILTON ET BURLINGTON
 5. NUIRE A LA CIRCULATION SUR LA VOIE DE SERVICE DE L'OUEST
29. QUELLE EST LA PRINCIPALE SOURCE DE FER DANS LE PORT?
1. LES PLUIES ACIDES
 2. LE CENTRE CANADIEN DES EAUX INTERIEURES
 3. STELCO ET DOFASCO
 4. LA DECHARGE DE BURLINGTON
 5. LES BOULETS DE CANON ROUILLES DE LA GUERRE DE 1812
30. DEPUIS 1700, LA SUPERFICIE DU MARAIS COOTE'S PARADISE A ETE REDUITE D'ENVIRON
1. 4 P. 100
 2. 10 P.100

- 3. 33 P. 100
- 4. 60 P. 100
- 5. 80 P. 100

31. EN 1900, LES PLUS IMPORTANTES ESPECES COMMERCIALES DE POISSONS DANS LE PORT ETAIENT

- 1. LA CARPE, LE CATOSTOME NOIR ET LE GASPEREAU
- 2. LE POISSON BLANC, LE HARENG DE LAC ET LA TRUITE DE LAC
- 3. LE BROCHET, LA PERCHE ET LE CRAPET-SOLEIL
- 4. LE SAUMON ET LE THON
- 5. LA PERCHAUDE ET LE DARD NOR

32. LE CANAL DESJARDINS EST

- 1. LE PLUS LONG CANAL D'EAU DOUCE EN AMERIQUE DU NORD
- 2. LA VOIE NAVIGABLE DONT ON SE SERT POUR LA REGATE A L'AVIRON HENLEY
- 3. LE RIPOSTE DE DUNDAS AU CANAL ERIE
- 4. LE CANAL QUI RELIE LE PORT ET LE LAC
- 5. L'EQUIVALENT FRANCAIS DU CANAL INDIAN CREEK

33. L'INONDATION DE LA "BEACH STRIP" AU DEBUT DE 1973 ETAIT ATTRIBUABLE

- 1. AU POMPAGE DESORDONNE DES SOUS-SOLS PAR LES RESIDENTS DE LA "BEACH STRIP"

2. A UNE TROP GRANDE EVACUATION DE L'USINE D'EPURATION DES EAUX USEES DE DUNDAS
 3. A DES VAGUES ET DES NIVEAUX D'EAU TRES ELEVES
 4. A UN TSUNAMI (VAGUE D'ORIGINE SISMIQUE)
 5. AU REAJUSTEMENT ISOSTATIQUE DU FOND DU LAC ONTARIO
34. "INRE" DESIGNÉ
1. LA BAIE DE BURLINGTON EN LANGUE HURONNE
 2. L'ABREVIATION ANGLAISE DU CENTRE CANADIEN DES EAUX INTERIEURES
 3. LE POLLUANT LE PLUS TOXIQUE DANS LE PORT
 4. LES INSTALLATIONS DE TRAITEMENT DES DECHETS DE HAMILTON
 5. L'INSTITUT NATIONAL DE RECHERCHE SUR LES EAUX
35. POURQUOI LA PRESENCE DE FER DANS LES SEDIMENTS DU PORT EST-ELLE BÉNÉFIQUE?
1. IL S'AGIT DE LA PRINCIPALE SOURCE DE FER POUR LES ACIERIES
 2. SA FORTE DENSITE EMPECHE LES SEDIMENTS DE SE REMETTRE EN SUSPENSION
 3. IL RETIENT LE PHOSPHORE DANS LES SEDIMENTS
 4. IL AUGMENTE LA QUANTITE D'OXYGENE DANS LES EAUX DU PORT
 5. IL RALENTIT LA ROUILLE DES PILOTS D'ACIER

36. LA "BEACH STRIP" QUI SEPARE LE PORT DU LAC EST LONGUE DE

1. 1 KM
2. 2 KM
3. 7 KM
4. 20 KM
5. 33,5 KM

37. L'OXYGENATION DES EAUX DU PORT AU MOYEN D'INJECTIONS D'OXYGENE PUR

1. PROVOQUERA UN PHENOMENE D'HYPERVENTILISATION CHEZ LES MOUETTES
2. N'AURA AUCUN EFFET
3. TUERA LES PLANTES
4. RENDRA LES POISSONS MALADES
5. PERMETTRA UNE DEGRADATION PLUS RAPIDE DES POLLUANTS

38. LE PLAN DE MESURES CORRECTIVES DU PORT DE HAMILTON (RAP) ENVISAGE LA GESTION DE L'ENVIRONNEMENT SOUS L'ANGLE DE L'ECOSYSTEME. CELA SIGNIFIE

1. QUE L'ON DONNERA LA PRIORITE A L'EXPLOITATION INDUSTRIELLE DU PORT
2. QUE L'ON REMPLIRA DAVANTAGE LE PORT
3. QUE L'ON METTRA FIN AUX ACTIVITES LIEES A LA NAVIGATION
4. QUE L'ON METTRA AU POINT UNE STRATEGIE CONCERTEE SERVANT TOUS LES INTERETS
5. QUE LE PORT SERA CONSACRE EXCLUSIVEMENT A LA PECHE

39. LE CANAL MARITIME DE BURLINGTON A ETE TERMINE EN

1. 1492
2. 1832
3. 1892
4. 1914
5. 1950

40. L'OBJECTIF DU PLAN DE MESURES CORRECTIVES (RAP) EST

1. D'EVALUER DANS QUEL ETAT SE TROUVE LA ZONE VISEE
2. D'ETABLIR UN PLAN D'ACTION POUR LA REALISATION DES OBJECTIFS POURSUIVIS
3. DE RENSEIGNER LES MEMBRES DU PUBLIC SUR LA MISE EN OEUVRE DU PLAN
4. DE FAVORISER LA PARTICIPATION DU PUBLIC
5. TOUTES LES REONSES QUI PRECEDENT

41. STELCO ET DOFASCO RECYCLENT CHAQUE JOUR LA QUANTITE SUIVANTE D'EAU PROVENANT DU PORT DE HAMILTON

1. 5 MILLIONS DE GALLONS
2. 50 MILLIONS DE GALLONS
3. 100 MILLIONS DE GALLONS
4. 500 MILLIONS DE GALLONS
5. 1 MILLIARD DE GALLONS

42. AUJOURD'HUI, L'ESPECE DE POISSONS QUI PREDOMINE DANS LE PORT EST

1. LA CARPE
2. LE CATOSTOME NOIR
3. LE POISSON BLANC
4. LA TRUITE DE LAC
5. LE VINANEAU

43. EN 1987, COMBIEN D'ESPECES D'OISEAUX AQUATIQUES NICHAIENT DANS LA PARTIE EST DU PORT?

1. 100
2. 50
3. 33
4. 6
5. 2

44. CARROLL'S POINT, SUR LA RIVE NORD-OUEST DE LA BAIE, EST

1. UNE POINTE ROCHEUSE
2. UN CORDON SABLONNEUX
3. UNE HAUTE FALAISE FORMEE PAR DES DEPOTS GLACIAIRES
4. UNE ANCIENNE CHAUSSEE MAINTENANT SUBMERGEE EN PARTIE
5. AUCUNE DES REONSES QUI PRECEDENT

45. LES CHERCHEURS ETUDIENT LES SEDIMENTS AU FOND DE L'EAU AU MOYEN

1. D'ECHANTILLONS DE SEDIMENTS PRELEVES AU HASARD A LA SURFACE
 2. DE CAROTTES DE SEDIMENTS
 3. DE SONDEURS A ULTRA-SONS
 4. DE CAMERAS DE TELEVISION SOUS-MARINES
 5. TOUTES LES REPONSES QUI PRECEDENT
46. LES SEDIMENTS LES PLUS GROSSIERS AU FOND DE L'EAU SE TROUVENT
1. PRES DE LA RIVE
 2. DANS LES EAUX LES PLUS PROFONDES
 3. LE LONG DE LA RIVE SUD
 4. A L'ENTREE DU CANAL
 5. A L'INTERIEUR DU BRISE-LAMES DU CCEI
47. QUEL EST LE NOM DES DEUX JESUITES QUI SE SONT RENDUS AU PORT DE HAMILTON EN 1669?
1. LEWIS ET CLARK
 2. DOLLIER ET GALINEE
 3. WAYNE ET SCHUSTER
 4. RADISSON ET DES GROSEILLIERS
 5. LEVESQUE ET PARIZEAU
48. PARCE QUE L'ECORCE TERRESTRE SUBIT TOUJOURS UN REAJUSTEMENT EN RAISON DE LA COUCHE DE GLACE QUI

RECOUVRAIT LA REGION IL Y A ENVIRON 10 000 ANS, LE PORT DE HAMILTON

1. DEVIENT LENTEMENT DE PLUS EN PLUS PROFOND
2. DEVIENT LENTEMENT DE MOINS EN MOINS PROFOND
3. N'EST PAS TOUCHE PAR CETTE ACTION
4. L'ECORCE TERRESTRE EN MOUVEMENT? VOUS VOULEZ RIRE!
5. DEVIENT PLUS PROFOND DU COTE EST ET MOINS PROFOND DU COTE OUEST

49. LA COURSE A PIED AUTOUR DE LA BAIE A COMMENCE EN

1. 1669
2. 1798
3. 1894
4. 1911
5. 1952

50. LES LEVES EXECUTES DANS LE PORT AU MOYEN DE SONDEURS A ULTRA-SONS SERVENT A

1. MESURER LA PROFONDEUR DE L'EAU
2. IDENTIFIER LES PRINCIPAUX TYPES DE SEDIMENTS AU FOND DE L'EAU
3. REPERER LES POISSONS
4. TOUTES LES REPONSES QUI PRECEDENT
5. AUCUNE DES REPONSES QUI PRECEDENT

51. QUELLES MESURES ONT ETE PRISES AU COURS DES QUINZE DERNIERES ANNEES POUR ASSAINIR LE PORT DE HAMILTON?

1. AUCUNE MESURE N'A ETE PRISE, CAR IL EST TROP TARD POUR INTERVENIR!
2. DRAGAGE EXHAUSTIF DES SEDIMENTS POLLUES
3. SEPARATION COMPLETE DES EGOUTS POUR LES EAUX USEES ET LES EAUX PLUVIALES
4. REDUCTION DES QUANTITES DE PHOSPHORE, D'EAUX USEES ET DE DECHETS INDUSTRIELS
5. ETABLISSEMENT D'UNE COMMISSION ROYALE POUR ETUDIER LE PROBLEME

52. DE QUELLE FACON LA QUALITE DE L'EAU DANS LE PORT DE HAMILTON S'EST-ELLE AMELIOREE AU COURS DES QUINZE DERNIERES ANNEES?

1. LA NUMERATION BACTERIENNE A DIMINUE
2. ON TROUVE DAVANTAGE D'ANIMAUX DANS LES SEDIMENTS AU FOND DE L'EAU
3. LE NOMBRE D'ESPECES D'OISEAUX SAUVAGES A AUGMENTE
4. LA CLARTE DE L'EAU A AUGMENTE
5. TOUTES LES REONSES QUI PRECEDENT

53. QUE TROUVE-T-ON DANS LES PROFONDEURS DU PORT DE HAMILTON?

1. DE PETITS VERS
2. DE VIEUX PNEUS ET DES CANNETTES DE BIERE, MAIS AUCUN ORGANISME VIVANT

3. DES PALOURDES, DES ESCARGOTS ET DES LARVES D'INSECTES
4. LE MONSTRE HAMAWATCHEE
5. DES CRAPETS-SOLEILS

54. LE SITE ACTUEL DE STELCO ET DOFASCO ETAIT AUPARAVANT

1. UN MARECAGE ET UNE ZONE D'EAU LIBRE
2. UNE FORMATION ROCHEUSE
3. D'EXCELLENTES TERRES AGRICOLES
4. L'ANCIENNE PROPRIETE DE PAULINE JOHNSON
5. UNE PLAGE SABLONNEUSE

55. QUEL EST LE NOMBRE APPROXIMATIF DE COUPLES DE GOELANDS A BEC CERCLE QUI FONT LEUR NID DANS LE PORT?

1. 20
2. 50
3. 500
4. 25 000
5. 100 000

56. LEQUEL DES OISEAUX SUIVANTS FREQUENTE NORMALEMENT LE PORT A LA FIN DE L'AUTOMNE?

1. LA GRUE BLANCHE D'AMERIQUE
2. LE PELICAN BLANC
3. L'ORFRAIE
4. LE CONDOR

5. LE GEAI DU CANADA

57. LEQUEL DES MAMMIFERES AQUATIQUES SUIVANTS PEUT-ON OBSERVER A COOTE'S PARADISE?

1. LE CASTOR
2. LE VISON
3. LE RAT MUSQUE
4. TOUS LES ANIMAUX SUSMENTIONNES
5. AUCUN DES ANIMAUX SUSMENTIONNES

58. QUEL EST LE VOLUME DE DECHETS INDUSTRIELS ET DOMESTIQUES DEVERSES CHAQUE ANNEE DANS LE PORT?

1. MOINS DE 100 MILLIONS DE GALLONS
2. 350 MILLIONS DE GALLONS
3. 1,1 MILLIARD DE GALLON
4. 5,3 MILLIARDS DE GALLONS
5. PLUS DE 25 MILLIARDS DE GALLONS

59. LE DECLIN DE LA POPULATION D'OISEAUX AQUATIQUES DANS LE PORT AU COURS DES 100 DERNIERES ANNEES EST PRINCIPALEMENT ATTRIBUABLE

1. A LA CONTAMINATION
2. A UNE CHASSE EXCESSIVE
3. A UNE PERTE D'HABITAT
4. AUX OBSERVATEURS D'OISEAUX

5. A LA RECHERCHE BIOLOGIQUE

60. COOTE'S PARADISE TIRE SON NOM

1. D'UN OISEAU AQUATIQUE, LA FOULQUE D'AMERIQUE
2. D'UN SOLDAT ANGLAIS QUI CHASSAIT DANS LES ENVIRONS AUX ALENTOURS DE 1780
3. D'EDGERTON COOTE, PREMIER PRESIDENT DES JARDINS BOTANIQUES ROYAUX
4. D'UNE ANCIENNE INSTALLATION POUR LA PECHE
5. D'UN ENDROIT SEMBLABLE A NORFOLK, EN ANGLETERRE

61. A DIVERSES EPOQUES DE SON HISTOIRE, LE PORT DE HAMILTON ETAIT APPELE

1. MACASSA
2. LE LAC DE GENEVE
3. WAQUATA
4. LA BAIE DE BURLINGTON
5. TOUTES LES REPONSES QUI PRECEDENT

62. L'AMENAGEMENT DU PORT DE HAMILTON AU MOYEN DU REMBLAYAGE S'EST DEROULE EN PLUSIEURS ETAPES, DONT LA PLUS IMPORTANTE S'ECHELONNAIT DE

1. 1891 A 1915
2. 1915 A 1941
3. 1941 A 1965

- 4. 1965 A 1983
 - 5. 1983 A 1987
63. QUEL EST LE PLUS GROS DES RUISEAUX QUI SE DEVERSENT DANS COOTE'S PARADISE?
- 1. SPENCER CREEK
 - 2. GRINDSTONE CREEK
 - 3. SULPHUR CREEK
 - 4. REDHILL CREEK
 - 5. STONEY CREEK
64. LES JARDINS BOTANIQUES ROYAUX, SITUÉS LE LONG DES RIVES DU PORT ET DE COOTE'S PARADISE, COUVRENT UNE SUPERFICIE TOTALE DE
- 1. 25 ACRES (10 HECTARES)
 - 2. 100 ACRES (40 HECTARES)
 - 3. 500 ACRES (200 HECTARES)
 - 4. 1 000 ACRES (400 HECTARES)
 - 5. 2 000 ACRES (800 HECTARES)
65. OU LES VILLES DE HAMILTON ET DE BURLINGTON PUISENT-ELLES LEUR EAU POTABLE ET OU REJETTENT-ELLES LEURS EAUX USEES?
- 1. LE LAC ONTARIO
 - 2. LE PORT DE HAMILTON
 - 3. COOTE'S PARADISE

4. EAU POTABLE- LE PORT - EAUX USEES- LE LAC ONTARIO
 5. EAU POTABLE- LE LAC ONTARIO - EAUX USEES- LE PORT
66. LA CIRCULATION MARITIME DANS LE PORT DE HAMILTON A AUGMENTE DE FACON MARQUEE APRES 1932 EN RAISON DE
1. L'ETABLISSEMENT DES COMMISSAIRES DU PORT DE HAMILTON
 2. L'OUVERTURE DU NOUVEAU CANAL WELLAND
 3. LA CONSTRUCTION DU CANAL A TRAVERS LA "BEACH STRIP"
 4. L'ACHEVEMENT DU CANAL DESJARDINS
 5. LE PREMIER DRAGAGE DU PORT
67. EN QUELLE ANNEE L'EAU DU PORT A-T-ELLE OFFICIELLEMENT ETE DECLAREE POLLUEE EN RAISON DE DEVERSEMENTS DE DECHETS DOMESTIQUES ET INDUSTRIELS?
1. 1893
 2. 1914
 3. 1923
 4. 1947
 5. 1962
68. QUEL ORGANISME GOUVERNEMENTAL EST RESPONSABLE DE LA QUALITE DE L'EAU DU PORT DE HAMILTON?
1. LE GOUVERNEMENT FEDERAL
 2. LE GOUVERNEMENT PROVINCIAL
 3. LE GOUVERNEMENT MUNICIPAL

4. LES COMMISSAIRES DU PORT DE HAMILTON
5. L'OFFICE DE PROTECTION DE LA NATURE DE HAMILTON

69. LE PORT DE HAMILTON COUVRE ENVIRON

1. 2 KILOMETRES CARRES
2. 5 KILOMETRES CARRES
3. 10 KILOMETRES CARRES
4. 20 KILOMETRES CARRES
5. 75 KILOMETRES CARRES

70. QUELLE EST LA PROPORTION DE VERS DANS LES SEDIMENTS AU FOND DE L'EAU DU PORT?

1. IL N'Y A PAS DE VERS AU FOND DE L'EAU
2. 1 VER PAR METRE CARRE
3. 100 VERS PAR METRE CARRÉ
4. 1 000 VERS PAR METRE CARRE
5. PLUS DE 10 000 VERS PAR METRE CARRE

71. COMBIEN DE CONTAMINANTS ORGANIQUES TROUVE-T-ON DANS LES SEDIMENTS DU PORT DE HAMILTON?

1. AUCUN
2. ENTRE 10 ET 100
3. ENTRE 100 ET 1 000
4. PLUS DE 1 000
5. NOUS NE LE SAVONS PAS

72. AU COURS DE DIFFERENTS TRAVAUX MENES DANS LE PORT, LE CCEI A CONSTATE QUE L'EAU

1. EST PLUS CLAIRE EN ETE QU'EN HIVER
2. EST PLUS CLAIRE EN HIVER QU'EN ETE
3. EST PAREILLE EN ETE ET EN HIVER
4. OFFRE TOUJOURS UNE VISIBILITE DE MOINS DE 6 POUCES
5. OFFRE TOUJOURS UNE VISIBILITE DE PLUS DE 6 PIEDS

73. A QUI APPARTIENT LE PARC LA SALLE?

1. A LA VILLE DE HAMILTON
2. A LA VILLE DE BURLINGTON
3. A L'OFFICE DE PROTECTION DE LA NATURE DE LA REGION DE HAMILTON
4. A LA FAMILLE DE BERNARD LA SALLE
5. AUX JARDINS BOTANIQUES ROYAUX

74. QUELLE PROPORTION DES RIVES DU PORT EST ACTUELLEMENT CONSIDEREE COMME UN ESPACE LIBRE?

1. 1 P. 100
2. 7 P. 100
3. 29 P. 100
4. 55 P. 100
5. 78 P. 100

75. A QUOI RECONNAIT-ON UNE EMBARCATION DU CCEI PROCEDANT A DES LEVES HYDROGRAPHIQUES DANS LES EAUX DU PORT?
1. AUX COULEURS DU NAVIRE- ORANGE ET JAUNE
 2. AUX VETEMENTS DE SURVIE ROUGES QUE PORTENT LES MEMBRES D'EQUIPAGE
 3. A LA QUANTITE DE CAMERAMANS ET DE REPORTERS SUR LE PONT
 4. AU MATERIEL POUR L'ECHANTILLONNAGE, LA DETECTION ET LE POSITIONNEMENT
 5. TOUTES LES REONSES QUI PRECEDENT

**APPENDIX 3
CORRECT ANSWERS**

Question	Answer	Question	Answer
1.	3	31.	2
2.	2	32.	3
3.	2	33.	3
4.	3	34.	5
5.	1	35.	3
6.	2	36.	3
7.	4	37.	5
8.	5	38.	4
9.	2	39.	2
10.	1	40.	5
11.	5	41.	5
12.	3	42.	1
13.	2	43.	4
14.	5	44.	2
15.	4	45.	5
16.	2	46.	1
17.	5	47.	2
18.	2	48.	1
19.	1	49.	3
20.	3	50.	4
21.	5	51.	4
22.	1	52.	5
23.	2	53.	1
24.	3	54.	1
25.	4	55.	4
26.	3	56.	3
27.	3	57.	4
28.	1	58.	5
29.	3	59.	3
30.	5	60.	2

Question	Answer
61.	5
62.	3
63.	1
64.	5
65.	5
66.	2
67.	3
68.	2
69.	4
70.	5
71.	3
72.	2
73.	1
74.	2
75.	5

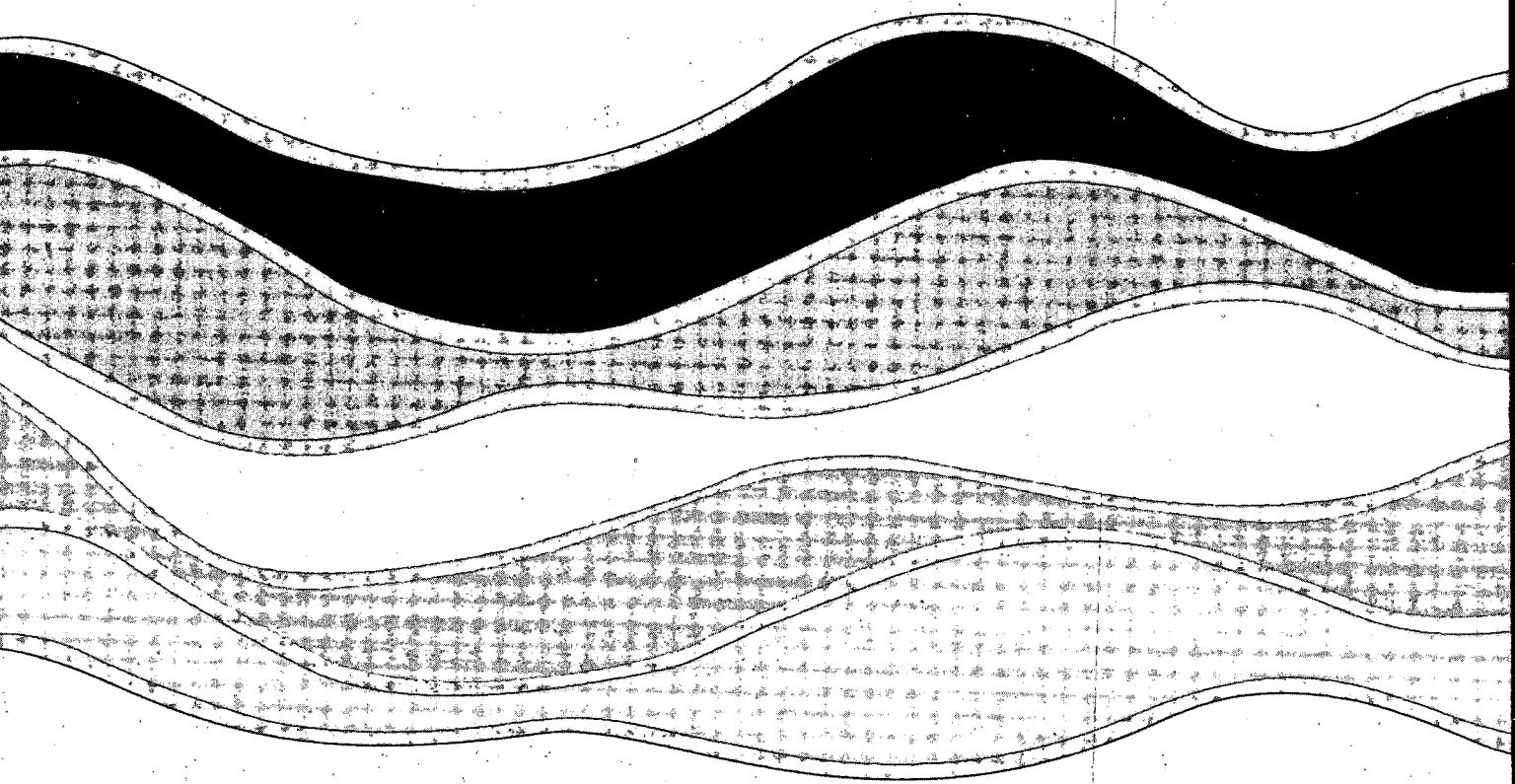
Ranking Based on Number of Correct Answers

Below Average:	0-2 correct answers
Average:	3-5 correct answers
Above Average:	6-7 correct answers
Superior:	> 7 correct answers

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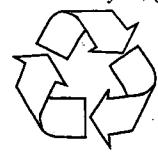


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