

**Analysis of the topics covered in Part B of
National High School Canadian Chemistry Contest (CCC) Exams since 1995**

Please see the exam question papers for the full wording of the questions, which includes details of what students might be expected to cover in their responses. Even where essay titles look similar, they may have required very different approaches.

2021	<ol style="list-style-type: none"> 1. The Aluminum Advantage (<u>mandatory</u>) 2. New Standards 3. Clean Energy? 	2015	<ol style="list-style-type: none"> 1. Experimental Design: heating up your coffee, a question of calorimetry 2. Chemistry is solutions 3. Tackling Chemistry's bad rap 4. The potential of fuel cells
2020	<ol style="list-style-type: none"> 1. Experimental Design: Determine the Percent Oxalate in an Iron Oxalate Complex Salt (<u>mandatory</u>) 2. Van der Waals Forces 3. Chemistry's Role in Creating Solutions to Global Challenges. 	2014	<ol style="list-style-type: none"> 1. Experimental Design: Producing 25.0 mL of Hydrogen Gas 2. Chemistry is pHun 3. What is the Atom? 4. The Origins of Oxygen and Implications for Earth's Energy Resources
2019	<ol style="list-style-type: none"> 1. Experiment Design: heat of combustion of paraffin (mandatory) 2. Chemistry contributions of Gilbert Lewis 3. 2019: The international year of the periodic table 	2013	<ol style="list-style-type: none"> 1. Experimental Design: Determine the Enthalpy of Fusion of Ice 2. Why Bother Completing Mendeleev's Periodic Table? 3. Green Chemistry: What is it and why Practice it? 4. The Battery: The Potential of Electrochemistry.
2018	<ol style="list-style-type: none"> 1. Experiment Design: Reaction Rates (mandatory) 2. Organic Chemistry 3. Chemistry 	2012	<ol style="list-style-type: none"> 1. Experimental Design: K_{sp} of sodium chloride 2. Three fundamental chemical principles 3. Polymer bills 4. Government restrictions on chemicals available in high schools
2017	<ol style="list-style-type: none"> 1. Experiment Design: Gravimetric Analysis (mandatory) 2. Thermodynamics 3. Chemistry and innovation 	2011	<ol style="list-style-type: none"> 1. Experimental Design (Mass and K_a of an unknown weak acid) 2. Intermolecular Forces 3. Changes to the way atomic masses appear on the periodic table 4. Effect of nitrogen dioxide and ozone on air quality
2016	<ol style="list-style-type: none"> 1. Experimental Design: identifying an unknown solution 2. Catalytic Chemistry 3. The future of the periodic table 4. New safety standards in Canada 		

2010

1. My favorite element
2. VSEPR Theory
3. Experimental Design (Catalysis)
4. Ocean Acidification

2009

1. Group 14
2. Ethanol
3. WHMIS
4. Experiment design (preparation of buffer solutions)

2008

1. Water hardness
2. Alternatives to gasoline
3. Isomers
4. Experiment design (determination of an equilibrium constant)

2007

1. Period 3
2. The greenhouse effect
3. Chemical equilibrium
4. Experiment design (to determine the enthalpy change of solution of anhydrous copper sulfate in water)

2006

1. Soaps and detergents
2. Plastics
3. Transition elements
4. Experiment design (to determine the enthalpy change of combustion of a fuel called Wizzo)

2005

1. Fire!
2. What is the best kind of water to drink?
3. Gasoline
4. Experiment design (to determine the rate of reaction between potassium permanganate and ethanedioic acid)

2004

1. Acids and Bases
2. Proteins
3. Garbage disposal and recycling
4. Experiment design (to determine the percentage of acetylsalicylic acid in a batch of aspirin tablets)

2003

1. The Periodic Table
2. The Octet Rule
3. The Kyoto Protocol
4. Experiment design (analysis of antacid tablets)

2002

1. Oil (Petroleum)
2. The Extraction of Metals
3. Bonding

2001

1. Air pollution
2. Catalysts
3. Polymers

2000

1. The Periodic Table and Periodicity
2. Water
3. Petroleum

1999

1. Polymers
2. Sodium hypochlorite
3. Rates of reaction

1998

1. Crude oil
2. Water
3. Forms of elemental carbon

1997

1. Extraction of metals and corrosion
2. Biochemicals
3. Electrical conductivity of solutions

1996

1. Ozone layer
2. Alkaline earth metals
3. Bonds

1995

1. Forms of ionizing radiation
2. Acids and bases
3. Experiment to determine the enthalpy change of a reaction