



CSCT CERTIFICATION EXAM HANDGUIDE

PROCEDURES AND CRITERIA FOR CERTIFICATION EXAM

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Welcome on behalf of your Provincial Association and the Canadian Society of Cardiology Technologists (CSCT) to the Certification exam process in Cardiology Technology. The CSCT Examination Hand Guide contains information regarding CSCT examination content, format, policies and procedures.

Introduction to CSCT

The CSCT is affiliated with both the Canadian Medical Association (CMA) and the Canadian Cardiovascular Congress (CCC). The CSCT is a non-profit organization established to raise the standard of practice, level of competence and the quality of patient care in Canada. A self-governing body, the CSCT admits and revokes membership in the Society. All members must maintain and upgrade professional standards by participating in a Continuing Education Program. With technology advancing so rapidly, the CSCT is working to preserve and improve national professional standards and practical competencies in the field of cardiac testing. Today we have over 1500 student/associate and registered members in Canada. Members may be employed in the field of cardiology by assisting and performing duties in:

- (1) Electrocardiography
- (2) Exercise Tolerance Testing
- (3) Ambulatory Monitoring
- (4) Pacemaker Technology
- (5) Invasive Cardiac Procedures

Mission Statement

The mission of the Canadian Society of Cardiology Technologists is to provide current and ongoing continuing education for members and students and as a governing body, to guarantee a standard of excellence in the practice of Cardiology Technology within Canada.

Introduction to CSCT Certification

CSCT Certification is awarded to applicants who can demonstrate the competencies listed in the 2007 CSCT National Occupational Competency Profile (NOCP). The NOCP is a comprehensive listing of technologist competencies that are necessary for safe and effective entry-level practice in Canada. The competencies cover four essential areas of practice:

- Cardiac Procedures
- Patient Care
- Professional Standards
- Foundational Knowledge

Demonstration of competency relies upon two complementary requirements:

1. Graduation from a CSCT approved/Canadian accredited Cardiology Technology educational program
2. Successful completion of the CSCT National Certification Examination

Cardiology Technology educational programs in Canada must apply for and obtain accreditation by the Canadian Medical Association Conjoint Accreditation Service (www.cma.ca). A condition of such accreditation is that programs teach and assess their students in all the competencies listed in the NOCP.

In exceptional circumstances (e.g. a foreign trained physician or foreign trained cardiology technologist), where an applicant for Certification is not a graduate of an accredited program, CSCT may (upon review) grant equivalent status to the applicant.

Your Provincial Association and the CSCT extend our best wishes to you as you prepare to meet the challenges of your future profession in Cardiology Technology

CSCT Certification Examination Eligibility

Candidates must comply fully with one of the following requirements:

- (1) Enrolled in, or successfully completed a CSCT approved / CMA accredited Cardiology Technology Program within the past three years. For a list of programs currently approved, please contact your Provincial Education Coordinator or see www.csct.ca

Plus: Maintain Provincial Associate/Student status requirements prior to exam date (\$75.00)

- (2) Foreign Trained Cardiology Technologists/Physicians must provide proof of education/work experience in order to challenge the exam. Please contact CSCT Education Director education@csct.ca for further information.

Note: Effective Jan 1 2009, graduates from approved Cardiology Technology programs have 3 years in which to write the CSCT certification exam for the first time.

Effective Jan 1 2009, any rewrites of the CSCT certification exam must be made within 3 years of the first attempt.

For those applicants who graduated prior to Dec 31 2008:

The CSCT certification exam in Sept 2011 will be the last opportunity to make a first attempt at the CSCT exam

Sept 2011 will also be the last opportunity to pass the exam, if they have been unsuccessful prior to Jan 1 2009

CSCT Certification Examination Application Procedure

All CSCT examinations are administered provincially; therefore ALL applications / documentation are to be sent to the Provincial Education Coordinator (PEC)

Note PEC email addresses can be found on the student page at www.csct.ca

The exam application form can be found at www.csct.ca in the student area under “exam documents”.

All communication (including results) will be via email, certificates will be mailed. Please ensure that this information is legible and up to date.

- (1) Submit completed current CSCT National Certification Examination application prior to deadline date (see Application Deadlines”
- (2) Submit examination fee prior to deadline date
- (3) Provide documentation of graduation (including the clinical portion) from an approved program in Cardiology Technology, according to provincial guidelines. If a photocopy of certificate or diploma is not immediately available, written verification from the Program Head or Instructor is sufficient.
- (4) Fulfill any further requirements as set by the Provincial Association/Society.

If any of the following occurs the application will not be processed and will be deferred to the next writing.

- (a) Failure to meet the application/documentation deadline
- (b) Non-sufficient funds (NSF cheque service charges apply)
- (c) Incorrect or incomplete applications

Confirmation of receipt of application and fee will be sent to each applicant by the Provincial Education coordinator within two (2) weeks following the deadline date for applications.

If no confirmation is received, it is the applicant’s responsibility to contact the Provincial Education Coordinator

In the case of a postal disruption, please contact your Provincial Education Coordinator by telephone, email, or fax.

In addition, each candidate will receive a confirmation email from CSCT no later than 3 weeks prior to the exam date

Certification Examination Dates, Application Deadlines and Fees

Examination Dates

ALL CSCT Examinations are held last weekend in April and September. Please contact your Provincial Education Coordinator for the specific dates in your province.

Application Deadlines

The deadline date for all CSCT examination applications is two months prior to the month of writing:

April exam deadline is February 1st
September exam deadline is July 1st

Examination Fees

National Certification Examination Fee		\$500.00
Rewrite of Certification Exam:	Theory or Interactive	\$300.00
	Theory and Interactive	\$450.00

Note: Examination fees are subject to change without notice

Please make certified cheque or money order payable to your Provincial Association/Society.

Certification Examination Content and Structure

The CSCT Examination Committee meets to prepare examinations for the CSCT National Certification Examination yearly. Both the CSCT Examination Committee and the CSCT Medical Advisory Board review questions for content, structure and validity.

NOTE: CSCT reserves the right to make any changes in structure and format; candidates will be notified in writing or email. CSCT does not take responsibility for issues or circumstances related to malpractice following Certification.

The certification examination will be based on the CSCT National Occupational Competency Profile (NOCP) Feb 2007 edition and independently assesses selected applicant competencies. The examination consists of two parts:

Part 1 is a 2.5 hour computer based test consisting of 150 questions. The types of questions which may appear include

- a) True of false
- b) Multiple Choice
- c) Case Studies

Part 2 is an interactive video-based test that is 2 hours in length

The content of Part 1 of the examination addresses NOCP competency areas as follows:

- Approximately 50% of questions: Cardiac Procedures (the majority of questions being based upon Competencies 1.1 and 1.3)
- Approximately 15% of questions: Patient Care (the majority of questions being based upon Competency 2.3)
- Approximately 35% of questions: Foundational Knowledge (the majority of questions being based upon Competencies 4.1 and 4.2)

Part 2 consists of multimedia interactive video scenarios, with related questions intended to evaluate:

- Judgment / decision making – the ability to come to a correct conclusion regarding the case or situation
- Decisiveness – the ability to commit to a course of action and put the plan into action
- Fact finding - the ability to obtain the key features of a case to assist in formulating a correct diagnosis and course of action
- Listening – the ability to listen to a patient response to formulate a decision
- Medical knowledge – understanding the CSCT NOCP (including Professional Standards)

Questions in both parts will also include the evaluation of diagrams, rhythm strips and 12 lead tracings, including serial tracings.

Each question is worth one mark unless otherwise specified. Some questions challenge your critical thinking by asking for more than one response. For these questions checking off all options would result in a score of 0. You must choose carefully and select only the responses that apply, for maximum points. A sample case study question is below.

Sample case study: A 7-year-old male was referred for investigation following a syncope episode while playing outside. He had one episode previous to this and he felt lightheaded prior to both episodes. His weight and height are within the normal range. His 13-year-old sister and aunt died suddenly and unexplained.

Check all that apply. The following question is worth 1.5 marks.

Which of the Following would most likely be associated with his symptoms?

- A. Malnutrition (-.5)
- B. Juvenile Diabetes (0)
- C. Arrhythmia (+1)
- D. Seizure (0)
- E. Congenital heart defect (+.5)
- F. Attention deficit disorder (-.5)
- G. Anaphylactic shock (-.5)

CSCT Certification Examination Blueprint for Part 1

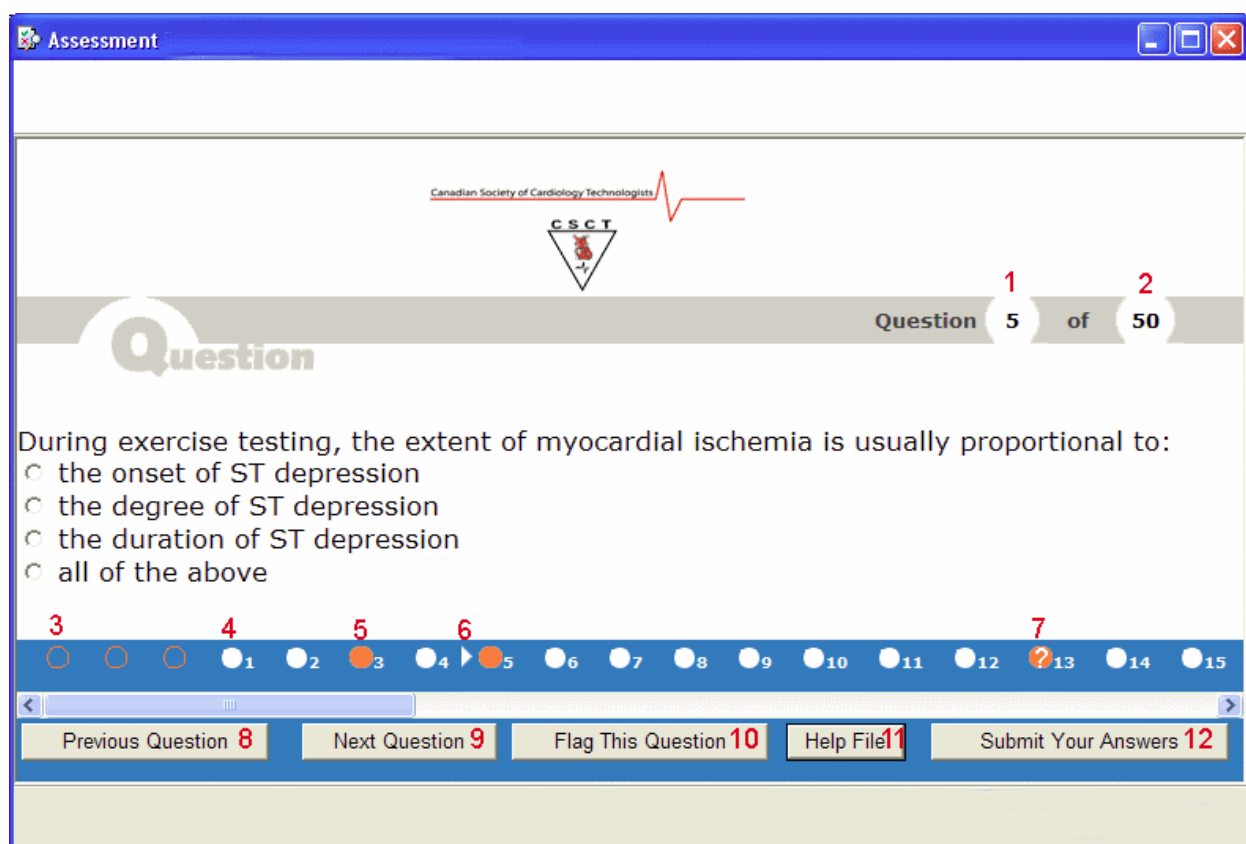
Area 1: Cardiac Procedures	50%
1.1 Record and analyze electrocardiograms.	21%
1.2 Apply monitor and analyze ambulatory ECG recordings.	3%
1.3 Perform exercise tolerance testing.	19%
1.4 Assess pacemakers and other implantable cardiac devices.	6%
1.5 Obtain and analyze pacemaker trans-telephonic recordings.	1%
Area 2: Patient Care	15%
2.1 Establish professional relationship with patient.	1%
2.2 Obtain patient history.	2%
2.3 Assess patient status.	10%
2.5 Apply aseptic technique.	1%
2.7 Perform venipuncture.	1%
Area 3: Professional Standards	0%
Area 4: Foundational Knowledge	35%
4.1 Integrate knowledge of anatomy, physiology and pathophysiology.	20%
4.2 Integrate basic knowledge of cardiac pharmacology.	6%
4.3 Integrate knowledge of electrical conduction applied to cardiology.	6%
4.4 Integrate knowledge of cardiac procedures.	3%

CSCT Certification Examination Preparation

The CSCT website (www.csct.ca) contains a link to Sample Questions to provide you with the format structure and feedback of the exam process.

Under “students”, “link to the exam”, “practice and demonstration” there are links to a practice written exam, and 3 practice interactive exams.

Prior to writing the Theory (Part 1) exam, review the following on-line “Help” Window, which identifies how to enter your responses. Use the toolbar buttons at the bottom of the exam question screen to go to the previous or next question. You may mark an item and return to that question later. The “Time” button will display time remaining on the test.



Explanation of the numbered items above

1. The Question number you are currently working on.
2. The total number of questions.
3. Empty circle indicates an explanation item. There is no question on this page.
4. White circle indicates answered question.
5. Solid circle indicates unanswered question.
6. White arrow indicates the question number you are currently working on.
7. Solid circle with question mark indicates flagged question. This is a visual cue to come back to this question later.
8. Click on "Previous Question" to navigate to the previous question.

9. Click on "Next Question" to navigate to the next question.
10. Click on "Flag This Question" to flag/unflag.
11. Click on "Help File" to access this help file
12. When you are finished with the exam, click on "Submit Your Answers" to end the exam.

CSCT Examination Scoring Methods

The CSCT uses a criterion-referenced methodology for scoring all examinations. With this type of scoring methodology there is no curve and candidates do not compete against each other. In constructing criterion-referenced examinations, the score that is most important is the cut-off score, or the point that represents essential competency. A great deal of time is spent ensuring that the cut-off scores are derived fairly.

Approximately 10% of the questions may appear as pre-trial items. These items are not scored and are used for future examination development. Candidates will not know whether a question is pre-trial or not.

Examination results are reported as the number of correctly answered questions. Because candidates must correctly answer a certain number of questions required to succeed and unanswered questions are scored as incorrect, it is the candidate's advantage to answer all possible questions. Generally, the number of correctly answered questions required to pass ranges between approximately 65 to 75 percent of the total questions, depending on the overall difficulty of the examination.

The pass mark for the Certification Examination based on previous validation projects is 65%.

When the exams are scored an analysis of the test questions are produced. The CSCT Examination Committee reviews questions that are identified as problematic, which may include image errors, incorrect structure, or ambiguous questions. If an item demonstrates a consistent problem throughout the analysis, the question will be removed and candidates will not be penalized. This may occur in only a few of the items in each of the exams.

Certification Examination Results

The candidate will receive

- a. preliminary (email) results within 4 to 6 weeks of their examination dates
- b. emailed detailed results within 8 weeks from their examination date. The examinations are computer scored and an analysis of the test questions is produced. Candidates will receive feedback on weak and strong areas in relation to the CSCT National Occupational Competency Profile (see below)
- c. Successful CSCT Certification Examination candidates should receive their Certificate within 6 weeks following their hardcopy results
- d. Any enquiries regarding the exam results should be made to the CSCT exam chair examchair@csct.ca

Certification Examination Feedback

Certification Exam Candidates will receive information **similar** to the following:

Part 1 – Theory (sample only)

A total of 25 candidates throughout Canada wrote the test.

- The majority of the candidates were able to complete the exam in the allotted time
- 87.3% was the maximum score
- 39.3% was the minimum score
- 72.6% was the average score

A breakdown of your performance in each area of the occupational profile.	Your score	Average	Max Score	Minimum Score
Area 1: Cardiac Procedures - Includes sub areas 1.1 to 1.5		68%	83%	31%
Area 2: Patient Care - Includes sub areas 2.1 to 2.3, 2.5, 2.7		52%	65%	0%
Area 4: Foundational knowledge - Includes sub areas 4.1 to 4.4		61%	100%	0%

Part 2 – Interactive (sample only)

Part II Interactive Exam: Following is a breakdown of your performance in each of the job attributes.	Your score	Max Score	Minimum Score	Average
Medical Knowledge: Your understanding of the CSCT occupational profile. 13% of questions on this exam refer to this Attribute	52%	70%	30%	48%
Listening: The ability to listen to a patient response to formulate a decision 3% of questions on this exam refer to this Attribute	43%	71%	30%	48%
Fact finding: The ability to obtain the key features of a case to assist in formulating a correct diagnosis and course of action 17% of questions on this exam refer to this Attribute	44%	76%	30%	56%
Judgement: The ability to come to a correct conclusion regarding the case or situation. 59% of questions on this exam refer to this Attribute	52%	81%	40%	58%
Decisiveness: The ability to commit to a course of action and put the plan into action. 8% of questions on this exam refer to this Attribute	50%	75%	30%	48%

Certification Examination Hand Rescoring

In the event of a failure in either (or both) P1 or P2 of the examination, a candidate may apply for hand rescoring within 30 days following hardcopy notification of results. Further information regarding this process will be provided with your hard copy results.

CSCT Certification Exam Rewrite Policy – effective Oct 2009

Candidates are allowed a maximum of 4 attempts (one initial and 3 re-writes) at the CSCT Certification exam

Candidates may have two rewrites at the CSCT National Certificate exam. Candidates must then contact the CSCT Exam Committee (examchair@csct.ca) prior to applying for the next exam. The candidate must then complete additional theory courses and/or clinical hours prior to the 4th and final attempt.

Candidates who fail the 4th attempt of the certification exam are not eligible to write the CSCT Certification Exam unless they re-qualify by applying as a new student to a CSCT approved Cardiology Technology Program and successfully graduating.

Note: Any candidate who currently has reached the maximum number of re-writes will have the opportunity of a final re-write of the CSCT exam in April 2010 or Sept 2010 only. They will receive a letter advising them of this from the CSCT exam chair

Examination Appeal Procedure for Disruptive or Technological Issues

Disruptive or Technological Issues during the examination circumstances may be appealed. Circumstances must be made verbally to the examination invigilator at the time of the examination and by email to the CSCT Examination Chairperson (examchair@csct.ca) within 48 hrs of the examination date

CSCT Examination Regulations

NOTIFICATION OF EXAMINATION TIME AND LOCATION - The candidates will be notified of the time and location of the examination no less than 2 weeks prior to the examination date.

PHOTO I.D. – Candidates must provide photo identification prior to admittance to the CSCT Examinations. The CSCT examination invigilator has total discretion if the I.D. is not a current likeness.

WITHDRAWALS or POSTPONEMENT - A candidate may withdraw from an exam sitting no later than **2 weeks prior** to the date of the exam and will be subject to an provincial administration fee. If the candidate chooses to post pone the exam until the next sitting, it is the candidate’s responsibility to reapply by the appropriate deadline and follow up with any subsequent communication with the provincial education coordinator.

There will be no withdrawal from examinations or a refund of examination fees within 2 weeks of the examination date unless extenuating circumstances apply.

NO SHOW – If a candidate does not attend the exam sitting, it will be deemed a failure and there will be no refund of exam fees unless extenuating circumstances apply

EXTENUATING CIRCUMSTANCES – If the candidate is unable to attempt the examination due to any of the following she/he may make application under extenuating circumstances.

- Illness of the candidate or immediate family member – medical certificate or physicians letter required
- Death in the immediate family – photocopy of death certificate or letter from attending physician or minister required
- Road closures – provide verification by the Department of Highways or RCMP

The candidate will be able to attempt the examination at a later date for an administration fee of \$50.00 (discretion of the province). The Provincial Education Coordinator must be notified immediately and written verification must follow within two (2) weeks.

CANDIDATES LATE FOR EXAMINATIONS – It is the candidate’s responsibility to be on time. The door to the examination room will be closed immediately after the examinations begin. This will be considered a “**no show**” or a failure.

RELIGIOUS BELIEFS – A candidate, who is unable to sit the CSCT Examinations on the specified day because of religious beliefs, must submit a letter stating this along with their application form. A letter from the candidate’s religious leader is required to verify the candidate’s request. The examination will be held on mutually accepted date to be arranged with the Provincial Education Coordinator and CSCT Examination Committee

CHEATING, PLAGIARISM, AND DISHONESTY – A candidate who is guilty of cheating, plagiarism, or dishonesty will be penalized appropriately by the CSCT Examination Committee pending on the severity of the act. The candidate may be disqualified from attempting to write the exam in the future.

SPECIAL EXAM REQUIREMENTS – Candidates who have special requirements to sit a CSCT exam must provide notification, supporting documentation and a physician's note at the time of the application. Arrangements to accommodate special needs will be forwarded to the CSCT Examination Committee and the candidate will be notified in writing of their decisions

