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Examination Overview

CCT

Certified Cardiographic Technician



Certified Cardiographic Technician (CCT)

This Examination Overview is meant to assist you as a prospective candidate of the Certified Cardiographic Technician (CCT) credentialing program. It provides an overview of the Qualification Requirements and Examination Content. For more details on CCI policies, the testing process, and procedures to submit an application, please visit www.cci-online.org to view or download the Applicant Handbook. **Examination fee is \$175 USD and all exam fees include a \$100 USD non-refundable filing fee.**

Qualification Requirements

All applicants must meet the following criteria:

1. Have a high school diploma or general education diploma at the time of application.
2. Fulfill one (1) of the qualifications of the exam for which you are applying. See qualifications listed in the tables below.
3. Provide typed documentation to support the qualification under which you are applying. Required documentation for each qualification is listed below. CCI reserves the right to request additional information.

Qualification Prerequisite	Supporting Documentation
CCT1 Currently enrolled as a student or a graduate of a cardiovascular or allied health training program.	CCT1 Completion certificate OR Student Verification Letter OR Educational Transcripts
CCT2 Currently employed or previously employed in the field of Cardiovascular Technology or in a recognized allied health field (recognized by the American Medical Association [AMA]).	CCT2 Employment Verification Letter
CCT3 Completed requirements for a graduate or undergraduate degree from a recognized institution in a field related to science or physical health.	CCT3 Completion certificate OR Student Verification Letter OR Educational Transcripts

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Examination Matrix

This examination matrix is provided to illustrate the general distribution of questions and the relative weight or emphasis given to a skill or content area on the examination.

Content Category	Approx. % of Examination
A. Conducting Pre-Procedural Activities	10%
B. Performing Resting ECG (12-Lead, 15-Lead, etc.)	39%
C. Performing Stress Tests	10%
D. Performing Ambulatory Monitoring (Holter, Event, Telemetry, Transtelephonic, Pacemaker, etc.)	4%
E. Performing Rhythm Analysis	37%
TOTAL	100%

Knowledge List

The list below describes general areas of knowledge needed in order to perform the tasks identified. This knowledge will apply across multiple tasks.

Size	Capillaries	Control mechanisms	ECG calibration methods
Location	Arterioles	Cardiac cycle	Single- and three-channel ECG
Layers	Venules	Normal values	Troubleshooting ECGs
Chambers	Cardiac valve function	Waveforms	Standardization
Valves	Pressures	ECG measurement	Paper speed
Blood flow	Relationship of cardiac output to heart rate and stroke volume	Bipolar, unipolar, and precordial leads	Lead placement
Arteries		Einthoven's triangle and law	Electrical interference
Veins			Somatic tremor

Task List

The task list below describes the activities which a Certified Cardiographic Technician is expected to perform on the job. All examination questions are linked to these tasks.

Duties and Tasks	Approx. % of Exam	Duties and Tasks	Approx. % of Exam
A Conducting Pre-Procedural Activities	10%	C Performing Stress Tests	10%
1 Verify physician's orders (e.g., protocol, patient limitations)		1 Gather stress test supplies and equipment	
2 Verify patient identifiers (e.g., name, DOB, HIPAA)		2 Demonstrate knowledge of stress test equipment (e.g., treadmill, bicycle, ergometry)	
3 Obtain patient consent (e.g., implied consent, informed consent, healthcare proxy)		3 Perform stress test protocol (e.g., Bruce, Modified Bruce, Naughton)	
4 Apply universal and/or isolation precautions		4 Demonstrate knowledge of pharmacological and/or nuclear stress test protocols	
5 Perform patient transfer and transport (e.g., body mechanics, ergonomics, proper equipment use)		D Performing Ambulatory Monitoring (Holter, Event, Telemetry, Transtelephonic, Pacemaker, etc.)	4%
6 Identify proper anatomical landmarks		1 Gather ambulatory monitoring supplies and equipment	
7 Prepare the patient (e.g., skin preparation, patient positioning)		2 Verify equipment functionality pre and post patient application	
8 Confirm equipment calibration, maintenance and cleaning		3 Attach leads to patient (e.g., stress loops, pouch)	
9 Identify safety hazards/considerations (e.g., patient, environment)		4 Perform ambulatory monitoring equipment and procedure troubleshooting	
10 Provide patient education (e.g., purpose, procedure, expectations, instructions)		E Performing Rhythm Analysis	37%
B Performing ECG (12-Lead, 15-Lead, etc.)	39%	1 Analyze sinus rhythm data	
1 Gather ECG supplies and equipment		2 Analyze atrial rhythm data	
2 Troubleshoot while performing ECG		3 Analyze junctional rhythm data	
3 Perform standard 12-Lead ECG		4 Analyze heart blocks rhythm data	
4 Perform modified ECG (dextrocardia, posterior, right sided, etc.)		5 Analyze ventricular rhythm data	
5 Perform 15-Lead, pediatric ECG		6 Analyze pacemaker rhythm data	
6 Recognize axis deviations		7 Report/communicate obtained rhythm data	
7 Recognize Bundle Branch Blocks (RBBB/LBBB)		8 Correlate ECG findings (e.g., waveforms, segments, intervals)	
8 Identify hypertrophy		9 Identify life-threatening arrhythmias	
9 Correlate ECG morphology with anatomy or physiology		10 Identify types of artifact	
10 Identify ischemic changes/infarction		11 Identify various classes/effects of general cardiovascular medications (beta blockers, ACE inhibitors, anti-arrhythmics, etc.)	
		Total	100%

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Sample Questions

1. The heart is divided into _____ chambers:
 - a. One
 - b. Two
 - c. Four
 - d. Three
2. Which of the following supplies blood to the arterial system after contraction?
 - a. Left atrium
 - b. Right atrium
 - c. Left ventricle
 - d. Right ventricle
3. The sensitivity switch controls the:
 - a. Heat
 - b. Speed
 - c. Amplification
 - d. ECG position
4. The little “spark” that makes the heart beat, originates in the
 - a. AV node
 - b. SA node
 - c. Purkinje fibers
 - d. Bundle branches
5. Which of the following is a poor conductor of electric current?
 - a. Metal
 - b. Blood
 - c. Dry skin
 - d. Body fluids

Answers

1. c 2. c 3. c 4. b 5. c

CCT References

The textbooks listed below are intended as recommended resources when preparing for examination. You may have previous or later editions of these or other references available that also present acceptable coverage of the subject matter. Any general text in cardiovascular techniques and evaluation, and cardiac patient care and management may be used. It is not necessary to use all of the texts identified. They are provided as suggestions only. CCI does not endorse or recommend any third-party review course or material.

1. Shier, David, Jackie Butler, and Ricki Lewis. *Hole's essentials of human anatomy and physiology*. Boston: McGraw-Hill.
2. Booth, Kathryn A., and Thomas E. O'Brien. *Electrocardiography for healthcare professionals*. New York: McGraw-Hill.
3. Dubin, Dale. *Rapid interpretation of EKG's: an interactive course*. 6th ed. Tampa, Fla.: Cover Pub. Co., 2000.
4. Wagner, Galen S., and Strauss, David G. *Marriott's Practical Electrocardiography*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Online Self-Assessment Practice Examinations are available for purchase for self-evaluation purposes. It is important to note that the results of the self-assessment exam do not guarantee or indicate individual success on the CCI exam, nor should the self-assessment serve as the only means for preparing for the CCI examination. **To order the self-assessment examinations online visit www.cci-online.org.**

CCI Applicant Handbook is required reading prior to applying for a CCI exam. Included is important information regarding the application policies, CCI procedures, and the testing process. **Download at www.cci-online.org/applicanthandbook.**