



**Cardiovascular
Credentialing**
INTERNATIONAL

Wholehearted Validation

Apply online at www.cci-online.org

Examination Overview

CRAT

Certified Rhythm Analysis Technician



Certified Rhythm Analysis Technician (CRAT)

This Examination Overview is meant to assist you as a prospective candidate of the Certified Rhythm Analysis Technician (CRAT) 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
CRAT1 Currently enrolled as a student or a graduate of a cardiovascular or allied health training program.	CRAT1 Completion certificate OR Student Verification Letter OR Educational Transcripts
CRAT2 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)).	CRAT2 Employment Verification Letter
CRAT3 Completed requirements for a graduate or undergraduate degree from a recognized institution in a field related to science or physical health.	CRAT3 Completion certificate OR Student Verification Letter OR Educational Transcripts

Certified Rhythm Analysis Technician (CRAT)

These examination matrices are provided to illustrate the general distribution of questions and the relative weight or emphasis given to a skill or content area on the examination.

Matrix for Exams Administered before July 1, 2023

Content Category	Approx. % of Exam
A. Registering Patients	5%
B. Maintaining Cardiac Monitoring Device Support	3%
C. Educating Clients	8%
D. Administering Cardiac Test	10%
E. Analyzing Rhythms	68%
F. Processing Cardiac Test Findings	6%
TOTAL	100%

Matrix for Exams Administered after July 1, 2023

Content Category	Approx. % of Exam
A. Initiating Cardiac Monitoring Services	9%
B. Administering Cardiac Tests	9%
C. Analyzing Normal Rhythms	16%
D. Analyzing Abnormal Rhythms	60%
E. Processing Cardiac Test Findings	5%
TOTAL	100%

The task lists below describe the activities that a Certified Rhythm Analysis Technician is expected to perform on the job. All examination questions are linked to these tasks.

Task List for Exams Administered before July 1, 2023

Duties and Tasks	Approx. % of Exam
A Registering Patients	5%
1 Validate provider order	
2 Verify patient identification	
3 Collect patient demographics	
4 Review patient history	
5 Supply cardiac monitoring device equipment to patient	
B Maintaining Cardiac Monitoring Device Support	3%
1 Confirm electrode placement	
2 Clean client equipment	
3 Minimize electrical mechanical interference (EMI)	
C Educating Clients	8%
1 Provide educational materials to clients	
2 Explain cardiac monitoring service	
3 Educate clients on cardiac monitoring device safety	
4 Educate clients on self-monitoring	
D Administering Cardiac Test	10%
1 Place cardiac monitoring device	
2 Collect ECG results	
3 Obtain patient symptoms	
4 Recognize standard ECG settings	
E Analyzing Rhythms	68%
1 Identify normal ECG components	
2 Identify sinus rhythm	
3 Identify atrial rhythm	
4 Identify junctional rhythm	
5 Identify AV conduction defects	
6 Identify ventricular rhythms	
7 Identify asystole	
8 Recognize artifacts	
9 Identify paced rhythms	
10 Identify cardiac anatomy and physiology	
F Processing Cardiac Test Findings	6%
1 Triage ECG results	
2 Compile test findings	
3 Conduct follow-up activities	
Total	100%

Task List for Exams Administered after July 1, 2023

Duties and Tasks	Approx. % of Exam
A Initiating Cardiac Monitoring Services	9%
1 Verify patient identification	
2 Review patient diagnosis, history, and/or reason for monitoring	
3 Provide education to patients and/or care team (e.g., cardiac monitoring service, device information, placement, safety, care)	
B Administering Cardiac Tests	9%
1 Place cardiac monitoring device	
2 "Evaluate quality of ECG (e.g., minimizing interference, troubleshooting)"	
3 Correlate patient symptoms to events and/or rhythms	
4 Recognize standard ECG settings	
C Analyzing Normal Rhythms	16%
1 Identify normal ECG components	
2 Identify cardiac anatomy and physiology	
3 Correlate ECG morphology with cardiac anatomy and physiology	
4 Identify sinus rhythms, rates, regularity, and wave morphology	
D Analyzing Abnormal Rhythms	60%
1 Identify atrial fibrillation	
2 Identify atrial flutter	
3 Identify atrial arrhythmias	
4 Identify junctional arrhythmias	
5 Identify ventricular arrhythmias	
6 Identify asystoles	
7 Identify ventricular tachycardia	
8 Identify ventricular fibrillation	
9 Identify paced rhythms	
10 Identify intraventricular conduction delays	
11 Identify AV conduction defects	
12 Recognize artifacts	
E Processing Cardiac Test Findings	5%
1 Prioritize ECG results	
2 Compile test findings	
3 Conduct follow-up activities	
TOTAL	100%

Certified Rhythm Analysis Technician (CRAT)

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.

Regulatory and compliance standards
(e.g., OSHA, HIPAA, informed consent,
medical records)

Medical ethics

Communication with the client

Communication with staff and faculty

Patient safety

Emergency response

Basic cardiovascular anatomy and
physiology

Cardiac rhythm analysis and interpretation

ECG troubleshooting

Documentation of findings

Medical terminology

Sample Questions

1. Somatic tremor artifact may be caused by
 - a. Switching leads
 - b. Circuit overload
 - c. Defective machine
 - d. A cold, uncomfortable environment
2. Which of the following arrhythmias may lead to death if asynchronous counter shock is not available?
 - a. Atrial tachycardia and atrial flutter
 - b. Atrial fibrillation and bundle branch block
 - c. Sinus tachycardia and wandering pacemaker
 - d. Ventricular fibrillation
3. Ventricular repolarization occurs during the _____ wave on the ECG.
 - a. P wave
 - b. T wave
 - c. P-R interval
 - d. QRS complex
4. Which waves and/or lines on the standard EKG measuring greater than 0.12 seconds may be indicative of a bundle branch block?
 - a. P waves
 - b. PR intervals
 - c. QRS complexes
 - d. ST segments
5. Measure the asystolic period within this cardiac tracing.
 - a. 1.48 seconds
 - b. 2.48 seconds
 - c. 3.48 seconds
 - d. 4.48 seconds



CRAT 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. Asirvatham, Samuel J., Friedman, Paul A., and Hayes, David L. *Cardiac pacing, defibrillation and resynchronization: a clinical approach*. Chichester, West Sussex, UK: Wiley-Blackwell.
2. Barold, S. Serge, and Roland X. Stroobandt. *Cardiac Pacemakers and Resynchronization Step by Step an Illustrated Guide. 2nd ed.* Chichester: John Wiley & Sons, 2010.
3. Booth, Kathryn A., and Thomas E. O'Brien. *Electrocardiography for healthcare professionals*. New York: McGraw-Hill.
4. Dubin, Dale. *Rapid interpretation of EKG's: an interactive course. 6th ed.* Tampa, Fla.: Cover Pub. Co., 2000.
5. Kenny, Tom. *The nuts and bolts of cardiac pacing. 2nd ed.* Malden, Mass.: Blackwell Futura, 2008.
6. Wesley, Keith. *Pocket Guide to Huszer's Basic Dysrhythmias and Acute Coronary Syndromes: Interpretation & Management*. Mosby Jems Elsevier.
7. Woods, Stephanie L. and Karen S. Ehrat. *The Art of EKG Interpretation: a Self-Instructional Text*. Dubuque, Iowa: Kendall Hunt Pub Co.

Answers

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

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.**