

# National Certified ECG Technician Detailed Test Plan

Effective: January 2024  
EX-0511

## NCET Detailed Test Plan

This detailed test plan reflects the results of a national job analysis study that determined the critical job competencies to be tested by NCCT in this certification examination. It contains 100 scored items, 25 unscored pretest items and candidates are allowed three (3) hours to complete the examination. This certification examination is comprised of 92% standard, 4-option multiple-choice items and 8% alternative items (e.g., Drag and Drop, Multi-Select, Hotspot).

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### Number of Scored Items    Content Categories

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24	<b>1 Patient Intake and Compliance</b>
	1    Properly identify the patient receiving the procedure.
	2    Obtain patient consent (e.g., implied, informed).
	3    Document patient medical history and current medications.
	4    Explain the procedure to the patient.
	5    Obtain patient vital signs.
	6    Follow legal and ethical guidelines (e.g., HIPAA regulations regarding Protected Health Information (PHI), scope of practice).
	7    Ensure patient safety throughout the procedure (e.g., fall risk, call bell, side rails).
	8    Follow infection control Standard Precautions.
9    Maintain ECG equipment (e.g., inspect for damage, supplies, batteries).	
25	<b>2 ECG Placement Techniques</b>
	1    Prepare and position patient for testing (e.g., gowning, skin preparation).
	2    Adapt technique to patients with special considerations (e.g., amputee, right sided heart, pacemaker).
	3    Adapt technique for special populations (e.g., age appropriate, isolation, special needs).
	4    Instruct the patient regarding behavior throughout the test.
	5    Place electrodes on the patients appropriately for a 12-lead ECG.
	6    Place electrodes on the patient appropriately for a stress test.
	7    Place electrodes on the patient appropriately for a Holter monitor.
	8    Place electrodes on the patient appropriately for a telemetry procedure.
9    Use additional instruments/devices as needed for specific diagnostic tests (e.g., blood pressure cuff, pulse oximeter).	
36	<b>3 ECG Recording and Recognition</b>
	1    Record ECG tracings on a patient.
	2    Differentiate between regular and irregular rhythms.
	3    Recognize sinus rhythms and rates.
	4    Recognize atrial rhythms and rates.
	5    Recognize ventricular rhythms and rates.
	6    Recognize junctional rhythms and rates.
	7    Recognize block rhythms and rates.
	8    Recognize other rhythms and rates (e.g., pacemaker spike, PEA, asystole).
9    Evaluate waveform characteristics (e.g., P waves, T waves, QRS complexes).	
10    Evaluate waveform quality (e.g., amplitude, symmetry, direction).	

- 11 Calculate heart rate (e.g., 1500, 6-second method).
- 12 Provide ongoing monitoring of the patient during testing.
- 13 Adjust ECG machine paper speed according to wave form (e.g., 25 mm, 50 mm).

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#### 4 Troubleshooting

- 1 Identify causes of recorded errors (e.g., improper tracing, improper lead placement).
- 2 Identify causes of artifacts (e.g., wandering baseline somatic tremors, electrical interference).
- 3 Troubleshoot recorded errors (e.g., replace electrodes, check wiring, inspect connections).
- 4 Troubleshoot artifacts (e.g., minimize patient movement, reduce AC interference).

### Essential Knowledge Base:

#### Apply a working understanding of these integrated concepts:

- 1 Infection Control
- 2 Patient Comfort and Safety
- 3 Medical Equipment Maintenance
- 4 Patient Education
- 5 Laws and Ethics
- 6 Documentation
- 7 Anatomy and Physiology
- 8 Procedure Options
- 9 Medical Equipment Operation
- 10 Rhythm Recognition
- 11 Heart Rate Calculation
- 12 Artifacts
- 13 Recording Errors

