

## 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 125 scored items, 25 unscored pretest items and candidates are allowed three (3) hours to complete the examination. This certification examination is comprised of 90-95% standard, 4-option multiple-choice items and 5-10% alternative items (e.g., Drag and Drop, Multi-Select, Hotspot).

# National Certified ECG Technician NCET Detailed Test Plan

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## Number of Scored Items    Content Categories

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### 31    1 Patient Comfort and Safety

- A1 Properly identify the patient receiving the procedure.
- A2 Document patient medical history and current medications.
- A3 Retrieve previous ECG records for baseline comparison
- A4 Obtain patient vital signs.
- A5 Explain the ECG procedure to the patient.
- A6 Provide patient instruction regarding the Holter monitor.
- A7 Follow HIPAA regulations regarding Protected Health Information (PHI).
- A8 Assess the room environment (e.g., fall risk, cell phones, temperature, electrical devices).

### 36    2 ECG Placement Techniques

- A1 Follow infection control standard precautions.
- A2 Prepare and position patient for testing (e.g., gowning, skin preparation).
- A3 Place electrodes on the patient appropriately for the test (e.g., stress, Holter, telemetry, but not color coding).
- A4 Use additional instruments/devices as needed for specific diagnostic tests (e.g., blood pressure cuff, treadmill, Holter monitor).
- A5 Adapt technique to patients with special considerations (e.g., amputee, right sided heart, pacemaker).
- A6 Adapt technique for special populations (e.g., age appropriate, isolation, special needs).
- A7 Instruct the patient regarding behavior throughout the test.
- A8 Remove electrodes from the patient as appropriate.

### 36    3 ECG Recording and Interpretation

- A1 Provide ongoing monitoring of the patient during stress testing.
- A2 Record ECG tracings on a patient.
- A3 Measure waveform characteristics (e.g., P waves, T waves, QRS complexes).
- A4 Measure waveform quality (e.g., amplitude, symmetry, direction).
- A5 Calculate heart rate (e.g., 1500, 6-second method).
- A6 Reconcile atrial and ventricular rates (e.g., PVC, PAC).
- A7 Scale ECG machine paper speed according to wave form (e.g., 25 mm, 50 mm).
- A8 Ensure ECG machine sensitivity (e.g., h, 1, 2).
- A9 Recognize regular and irregular rhythms.

A10 Recognize basic rhythm classifications and rates:

- a Sinus
- b Atrial
- c Ventricular
- d Junctional
- e Blocks
- f Other (e.g., pacemaker spike, PEA, asystole)

A11 Initiate response to life threatening arrhythmias per protocol.

A12 Monitor patient vital signs and tolerance during testing.

A13 Prepare the report for the provider.

A14 Transmit the report to the patient's EMR/EHR or chart.

A15 Prepare an ECG for mounting as needed.

**22 4 ECG Troubleshooting and Maintenance**

A1 Identify reading errors (e.g., improper tracing, standardization mark out of range, improper lead placement).

A2 Troubleshoot artifacts and recording errors (e.g., somatic tremor, patient movement, wandering baseline, AC interference, seizures, paper placement, lead reversal, power loss, remove electronic devices, calm the patient).

A3 Account for patients with special considerations (e.g., clothing, shunts, piercings, scars, pacemaker/ AICD-failure to pace).

A4 Inspect the ECG machine for damage.

A5 Restock ECG supplies (e.g., electrodes, alcohol pads, paper).

A6 Ensure proper grounding of the ECG machine.

A7 Check battery charge and condition.

A8 Clean and store the ECG machine after use.

A9 Backup ECG data to database of the electronic healthcare records.

**Essential Knowledge Base:**

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

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|--|-------------------------------------|
| 1 Infection control                              | 11 Testing options                  |
| 2 Occupational safety                            | 12 Drug properties and interactions |
| 3 Patient comfort and safety                     | 13 Patient education                |
| 4 Medical equipment maintenance                  | 14 EMR/EHR software                 |
| 5 Human Anatomy & Physiology                     | 15 HIPAA                            |
| 6 Rhythm recognition                             | 16 Documentation                    |
| 7 Calculating heart rate                         | 17 Active listening                 |
| 8 Obtaining a medical history                    | 18 Critical thinking                |
| 9 Medical equipment operation                    |                                     |
| 10 Medical procedure justifications/explanations |                                     |