

Certified Metrology Technician

Test Question Overview

This overview is a guide to help students prepare for taking the test guiding them on what areas the test will cover.

1. General Metrology - 16.0%

In this section, candidates are tested on their knowledge of

- a. SI units and prefixes, as well as how to convert between prefixes such as (M) Mega to (k) kilo.
- b. Difference between imperial and metric units.
- c. The meaning of metrology-related acronyms such as NMI, SI, VIM, GUM, DUT, UUT, NIST, BIPM, ESD.
- d. The meanings of accuracy, precision, traceability, and the purpose of calibration.

2. Dimensional Metrology - 11.1%

In this section, candidates are tested on their knowledge of

- a. SI and Imperial units of measure for length
- b. Basic operational knowledge of calipers, micrometers, rulers, gauge blocks, optical flats, and surface plates.
- c. Care and handling of equipment.
- d. Environmental effects of measurements.

3. Electrical Metrology - 11.6%

In this section, candidates are tested on their knowledge of

- a. SI units of measure for electrical measurements
- b. SI prefix unit of measure conversion
- c. Ohms Law
- d. Basic measurement configurations

4. Force Metrology - 8.9%

In this section, candidates are tested on their knowledge of

- a. SI and Imperial units of measure for force
- b. Basic strain Gauge and bridge measurement theory
- c. Be familiar with ASTM E74
- d. Environmental effects on force measurements

5. Mass Metrology - 9.3%

In this section, candidates are tested on their knowledge of

- a. SI and Imperial units of measure for force
- b. The relationship between mass and weight

- c. Mass Metrology terms such as tare, zero, true mass, eccentricity, repeatability, local gravity and check weights.
- d. Be familiar with Mass metrology related acronyms such as NOAA, ASTM, OIML and the roles they play in mass metrology
- e. Environmental effects on mass measurements

6. Pressure Metrology - 9.8%

In this section, candidates are tested on their knowledge of

- a. SI and Imperial units of measure for pressure
- b. Key differences between absolute, relative, and vacuum measurements
- c. Basic pressure metrology terms like parallax, hysteresis, barometric pressure, atmospheric pressure, deadweight testers.
- d. Environmental effects on pressure measurements

7. Temperature Metrology - 12.0%

In this section, candidates are tested on their knowledge of

- a. SI and other units of measure for temperature
- b. Key differences between glass, PRT, Thermocouple, and infrared thermometers
- c. Be familiar with Mass metrology related acronyms such as ITS-90, PRT, SPRT
- d. Differences between absolute zero, 0 degrees, and the freezing point and boiling point of pure water.
- e. Different types of Thermocouples
- f. Environmental effects on temperature measurements

8. Torque Metrology - 8.9%

In this section, candidates are tested on their knowledge of

- a. SI and Imperial units of measure for pressure
- b. Understanding of the relationship between force and length
- c. Basic torque operation and care of equipment
- d. Environmental effects on torque measurements

9. Safety & Care Metrology - 12.4%

In this section, candidates are tested on their knowledge of

- a. General Safety in a calibration lab
- b. Be familiar with safety-related acronyms such as CPR, ESD, PPE, OSHA, ect
- c. Chemical and Vapor safety
- d. Electrical Safety
- e. Oxygen clean gauges