NIMS Measurement, Materials & Safety Preparation Guide

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Overview

Introduction

This preparation guide is intended to help machinists study and prepare for the NIMS written credentialing exam. The sample test (available online) will help prepare machinists to take the actual credentialing exam by delivering questions similar to those on the official exam while using the exact same testing interface. None of the questions are duplicates from the actual exam. This preparation guide is useful for reviewing technical knowledge and identifying areas of strength and deficiency needed so the student has what is needed to do well on the exam.

Achieving a NIMS credential is a means through which machinists can prove their abilities to themselves, their instructors, their employers and/or to the customer. By passing the NIMS credentialing exam you will earn a valuable and portable credential. Due to the challenging nature of this test, it proves that a nationally accepted level of competency has been reached.

Who Wrote the Questions?

A panel of technical experts, from all areas of the metalworking industry, wrote the questions used on the actual credentialing exam. The panel of experts ranged from company presidents and owners, to engineers and quality personnel, to current machinists. Exam questions are designed to test the knowledge skills needed for entry-level machinists. They are written to deal with practical problems, computations, and decisions machinists encounter in their day-to-day work.

The technical experts must first validate the exam questions. Then, before the questions become part of the credentialing exam, qualified machinists and industry personnel validate them once again on a national level. Rejected questions are either rewritten or discarded altogether.

How to Prepare for the Credentialing Exam

Become familiar with the exam content and question format by utilizing the information provided in this preparation guide. The Areas of Knowledge portion in this guide contains a summary description of the content covered by the actual credentialing exam.

The question types vary from multiple choice, true or false, and drag and drop answers. Note that instructions may accompany some questions. Be sure to read each question carefully (twice, if necessary) so that you know exactly what is being asked. Check each answer and your work since an error in computation or understanding may make a wrong answer appear correct.

Four steps for effective preparation:

1. Study the content list for each exam you will attempt.
2. Complete the necessary lessons and exercises within the course content, being sure to get feedback from your instructor.
3. Complete the sample test online to become familiar with subject matter and question type. Retake the sample test as many times as necessary. Results are not saved from each attempt.
4. Repeat steps 1 through 3 and identify the area(s) where you may need additional review. Use the preparation guide as a self-diagnostic tool.

Areas of Knowledge Measured by the Exam

The exam is divided into five sections. They are:

- General Maintenance Tasks
- Industrial Safety & Environmental Protection Tasks
- Quality Control and Inspection Tasks
- Process Adjustment and Improvement Tasks
- Metals Classification, Properties, and Numbering Systems

Following is a list of the basic knowledge areas assessed by the exam:

Applying the Machinery's Handbook

The machinist must be able to reference and apply information found in the handbook to solve application problems. Referencing thread percentage, finish symbols, and allowances are some of the skills required.

Basic Mathematics

The exam will assess basic math knowledge of fraction/decimal conversion, addition and subtraction of decimals, and an understanding of percent.

Industrial Safety

The machinist must become familiar with Hazmat, SDS, basic personal protective equipment (PPE), and machine tool safety. Student assessment includes identification of a government body that regulates industrial safety – Occupational Safety and Health Administration (OSHA).

Maintenance

Student assessment includes elementary knowledge of referencing and researching maintenance procedures, hand tool maintenance and safety, and simple tool maintenance.

Process Adjustment

The exam presents basic problems of machining processes such as tapping, threading, drilling, milling, reaming, grinding, and filing in which a process

adjustment functions as the corrective action. Students must identify a basic goal of process improvement.

Materials

The exam will evaluate general knowledge of the classification, composition, numbering systems, heat treatment, properties, and appearance of commonly used metals in the machining industry.

Quality Control Procedures

The exam will evaluate knowledge of basic concepts of SPC and sampling plans. Basic knowledge of inspection plans includes rationale, criteria for choosing the correct measuring instrument, and organization. The evaluation includes basic knowledge of inspection setups and measuring instruments.

Before the Exam

- Get a good night's rest before the exam. Being well rested will make you more alert and efficient when taking the exam.
- Review any course material from your instructor. Review the information in this preparation guide and take the sample test online.
- Review the items allowed by NIMS in the testing area.
- If you wish to pace yourself, bring a watch, or be aware of the location of clocks at the test site. There is also a clock on the computer screen that shows the elapsed time out of the total allowed time (e.g. 0:35:00 / 1:30:00).
- Make sure to bring some form of photo identification and any required paperwork by your testing location.
- Arrive at the test site at least 10 to 15 minutes prior to the specified exam time.

At the Testing Site

When you arrive at the test center, wait in the assigned area until the proctor begins the test orientation and administration. The proctor will instruct you on the proper procedure for launching the exam, the time allotted for the exam, permitted reference materials, and if a calculator is allowed.

Once the exam has begun, keep track of time. Avoid spending too much time on any one question. Answer the questions you know the answers to and then go back to those you have difficulty with if time allows. Repeat this process for each section. Again, do not spend an excessive amount of time on any one question.

It is to your advantage to answer every question. Do not leave any answers blank. Answers that are left blank will be counted as incorrect. Your score will be based on the number of correct answers.

Access the Sample Test

You can take the sample test online in a few simple steps:

1. Register with NIMS for free as a candidate.
    a. If you already have a different type of account, contact NIMS staff to have the candidate role added.
    b. If you think you may already have an account, do not register for one again—contact NIMS staff to look up your account information.
2. Log in to the Testing Center.
3. Go to the Take Test page and click on the link to the sample tests.
4. Click Take Test beside the sample test you would like to take.
    a. You may retake sample tests as often as you want.
    b. The results are not saved from one attempt to the next, so you must immediately print the results screen (using the print function in your browser) if you want to save your results.

Printing the Sample Test

You are able to export the test to a printable version, as well as a version with answers to check your work. Keep in mind that accessing it online is the best way to get the most recent version from NIMS, as there may be new questions added or edits to the questions in the future.

To print the test, follow these steps:

1. Log in to the Testing Center as a candidate, or switch to candidate role.
2. Go to the Take Test page and click on the link to the sample tests.
3. Click Export beside the sample test you would like to print. The test will open in a new tab.
4. When that page finishes loading, use the print function in your browser to print the page. The keyboard shortcut is usually Ctrl + P (Cmd + P on Mac).

To print the test answers, follow these steps:

1. Log in to the Testing Center as a candidate, or switch to candidate role.
2. Go to the Take Test page and click on the link to the sample tests.
3. Click Export with Answers beside the sample test you would like to print. The test will open in a new tab, and the correct answers will be highlighted yellow and have a checkmark on that line.
4. When that page finishes loading, use the print function in your browser to print the page. The keyboard shortcut is usually Ctrl + P (Cmd + P on Mac).

