

Study Guide

For

Plant Maintenance Mechanic

Knowledge Test

TEST NUMBER: 2879

INTRODUCTION

The test is a job knowledge test designed to cover the major knowledge areas necessary to perform the job. This Guide contains strategies to use for taking tests and a study outline, which includes knowledge categories, major job activities, and study references.

TEST SESSION

It is important that you follow the directions of the Test Administrator exactly. If you have any questions about the testing session, be sure to ask the Test Administrator before the testing begins. During testing, you may NOT leave the room, talk, smoke, eat, or drink. Since some tests take several hours, you should consider these factors before the test begins.

Mobile phones or other electronic equipment will NOT be allowed in the testing area.

The test has a time limit of six hours and is broken into two parts. When you reach the end of Part I, you will have to submit your answers to reach Part II. You will not be able to change any of your answers from Part I after you submit your answers. Once you have submitted Part I, you have the option to take a 30-minute break. If you chose not to take that break, you can proceed directly to Part II by pressing Submit on the break screen.

The test has a three hour time limit. A calculator will be provided for you to use during the test.

You will receive a Test Comment form so that you can make comments about test questions. Write any comments you have and turn it in with your test when you are done.

STUDY GUIDE FEEDBACK

At the end of this guide, you have been provided with a Study Guide Feedback page. If a procedure or policy has changed, making any part of this guide incorrect, your feedback would be appreciated so that corrections can be made.

ASSESSMENT TAKING STRATEGIES

The test contains multiple-choice questions. The purpose of this section is to suggest techniques for you to use when taking one. Your emotional and physical state during the test may determine whether you are prepared to do your best. The following list provides common sense techniques.

CONFIDENCE

If you feel confident about passing the test, you may lose some of your anxiety. Think of the test as a way of demonstrating how much you know, the skills you can apply, the problems you can solve, and your good judgment capabilities.

PUNCTUALITY

Arrive early enough to feel relaxed and comfortable before the test begins.

CONCENTRATION

Try to block out all distractions and concentrate only on the test. You will not only finish faster but you will reduce your chances of making careless mistakes. If possible, select a seat away from others who might be distracting. If lighting in the room is poor, sit under a light fixture. If the test room becomes noisy or there are other distractions or irregularities, mention them to the Test Administrator immediately.

BUDGET YOUR TIME

Pace yourself carefully to ensure that you will have enough time to complete all tasks/functions.

READ CRITICALLY

Read all directions and questions carefully.

Remember that the techniques described in this section are only suggestions. You should follow the test taking methods that work best for you. If particular questions seem difficult to understand, make a note of them, continue with the test and return to them later.

MAKE EDUCATED GUESSES

Make an educated guess if you do not know the answer or if you are unsure of it.

DOUBLE-CHECK MATH CALCULATIONS

Use scratch paper to double check your mathematical calculations.

REVIEW

If time permits, review your answers. Do the questions you skipped previously.



Make sure each multiple-choice question has your correct answer selected.

Remember the techniques described in this section are only suggestions. You should follow the test taking methods that work best for you.

JOB KNOWLEDGE CATEGORIES AND STUDY REFERENCES

Below are the major job knowledge areas (topics) covered on the test and the associated study references. Listed next to each knowledge category is the number of items on the exam that will measure that topic. You can use this information to guide your studying. Some exams also contain additional pretest items. Pretest items will appear just like all of the other items on your exam, but they will not affect your score. They are an essential part of ensuring the test remains relevant to successful performance of the job.

There are a total of 105 items on the test. The passing score is 69%.

A. Mechanical Systems (24 items)

Knowledge of mechanical systems including engines, air compressors, and pumps. Also knowledge of motor shaft alignment techniques, fuel type, power curve of engines, basic generator parts, NOX basics, air flow, and pressurized systems.

References:

Davis, T. B, & Nelson, C. A. (2010). Audel Millwrights and Mechanics Guide. (5th Edition). Audel.

Kemp, A. W. (2008). Industrial Mechanics. (2nd Edition). ATP publications.

Dempsey, P. (2008). Troubleshooting and Repairing: Diesel Engines. (4th Edition). McGraw Hill.

B. Safety and Waste Disposal (14 items)

Knowledge of safety and waste disposal in accordance with safe work practices including knowledge of personal protective equipment and their use, equipment tags, waste disposal procedures, rigging, and safe use of tools and equipment.

References:

Davis, T. B, & Nelson, C. A. (2010). Audel Millwrights and Mechanics Guide. (5th Edition). Audel.

Kemp, A. W. (2008). Industrial Mechanics. (2nd Edition). ATP publications.

CalOSHA. Title 8. Section 5194: Hazard Communication.

National Fire Protection Association (NFPA). 704: Standard Systems for the Identification of the Hazards of Materials for Emergency Response.

C. Math and Measurement (19 items)

Knowledge of math and measurement including basic geometry skills, valves, gauge reading, micrometers, and different units of measurement.

References:

Walker, J. R. (2004). Machining Fundamentals. (8th Edition). Goodheart-Willcox Co.

Kemp, A. W. (2008). Industrial Mechanics. (2nd Edition). ATP publications.

Prindle, K., & Prindle, A. (2003). Math the Easy Way. (4th Edition). Barron's Publications.

D. Electrical Mechanical and Hydraulic Theory (10 items)

Knowledge of mechanical and hydraulic theory including troubleshooting, fluid systems and flow, oil compatibility, pneumatic pressurized systems, torque/torque sequence, and basic electrical theory.

References:

Kemp, A. W. (2008). Industrial Mechanics. (2nd Edition). ATP publications.

Davis, T. B., & Nelson, C. A. (2010). Audel Millwrights and Mechanics Guide. (5th Edition). Audel.

Oberg, E., & Jones, F. D. et al. (2008). Machinery's Handbook. (28th Edition). Industrial Press Inc.

E. Piping-Welding (7 items)

Knowledge of piping and welding including pipe thread standards, pipe size and measurement, TIG and stick welding, and metal types associated with welding.

References:

Davis, T. B., & Nelson, C. A. (2003). Mechanical Trades Pocket Manual. (4th Edition). Audel.

Davis, T. B., & Nelson, C. A. (2010). Audel Millwrights and Mechanics Guide. (5th Edition). Audel.

Ashton, B. J., & Garby, R. G. (1993). IPT's Metal Trades Handbook. IPT Publishing and Training.

F. General Ability (11 items)

General Mechanical knowledge including knowledge of print reading, understanding of the differences between mechanical and electrical issues, and mechanical systems/equipment troubleshooting.

References:

Kemp, A. W. (2008). Industrial Mechanics. (2nd Edition). ATP publications.

Davis, T. B, & Nelson, C. A. (2010). Audel Millwrights and Mechanics Guide. (5th Edition). Audel.

G. Tools (20 items)

Knowledge of tools and their functions including wrenches, screw drivers, pneumatic tools, peen hammers, hand tools, micrometers and measuring tools, drill press, dial indicators, hacksaws, and hand grinders.

References:

Davis, T. B, & Nelson, C. A. (2010). Audel Millwrights and Mechanics Guide. (5th Edition). Audel.

Kemp, A. W. (2008). Industrial Mechanics. (2nd Edition). ATP publications.

Walker, J. R. (2004). Machining Fundamentals. (8th Edition). Goodheart-Willcox Co.

STUDY GUIDE FEEDBACK

Please email to notify us of any changes in policies, procedures, or materials affecting this guide.

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