

STUDY GUIDE PLANT MAINTENANCE MECHANIC

TEST #2879

INTRODUCTION

The **Plant Maintenance Mechanic (2879)** 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.

All cellular/mobile phones, pagers or other electronic equipment will NOT be allowed in the testing area.

All questions on this test are multiple-choice or hot spot questions. Multiple choice questions have four possible answers. Hot spot questions have a picture, and you must click the correct spot on the picture to answer the question. All knowledge tests will be taken on the computer. For more information on this, please see the next section of this study guide on Computer Based Testing.

The test has a three hour time limit. A basic calculator will be provided for you to use during the test. You will NOT be able to bring or use your own calculator during testing.

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.

INFORMATION GUIDE FEEDBACK

At the end of this Guide you have been provided with an Information 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.

TEST TAKING STRATEGIES

INTRODUCTION

The **Plant Maintenance Mechanic Test (2879)** contains multiple-choice questions and may also contain hot spot questions. The purpose of this section is to help you to identify some special features of a multiple-choice test and 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 you can use before the test begins.

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 TIMES

Pace yourself carefully to ensure that you will have enough time to complete all items and review your answers.

READ CRITICALLY

Read all directions and questions carefully. Even though the first or second answer choice looks good, be sure to read all the choices before selecting your answer.

MAKE EDUCATED GUESSES

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

CHANGING ANSWERS

If you need to change an answer when testing on a computer, be sure that the new answer is selected instead of the old one.

RETURN TO DIFFICULT QUESTIONS

If particular questions seem difficult to understand, make a note of them, continue with the test and return to them later.

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. When testing on a computer, make sure each multiple choice question has a dot next to the correct answer.

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 **Plant Maintenance Mechanic Test (2879)** 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 **Plant Maintenance Mechanic Test (2879)** remains relevant to successful performance of the job.

There are a total of 117 items on the **Plant Maintenance Mechanic Test (2879)** and the passing score is 69%. This score was determined during the test validation process.

MECHANICAL SYSTEMS (26 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 for Mechanical Systems

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.

SAFETY AND WASTE DISPOSAL (17 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 for Safety and Waste Disposal

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.

MATH AND MEASUREMENT (19 ITEMS)

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

References for Math and Measurement

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.

MECHANICAL AND HYDRAULIC THEORY (12 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 for Mechanical and Hydraulic Theory

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.

PIPING AND 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 for Piping and Welding

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.

GENERAL MECHANICAL KNOWLEDGE (14 ITEMS)

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

References for General Mechanical Knowledge

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.

TOOLS (22 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 for Tools

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.

SAMPLE QUESTIONS

The following sample questions should give you some idea of the form the test will take.

1. Which of the following is generally used for breaking threaded fasteners free?

- a. Open end wrench
- b. Box end wrench
- c. Six point socket
- d. Twelve point socket

2. Of the following choices, what should NOT be used to extinguish an electrical fire?

- a. CO2
- b. Halon
- c. Water
- d. Dry chemical

3. 3/16 of an inch is equal to "X" hundredths?

- a. 188
- b. 18.7
- c. 1.87
- d. .187

4. Pliers are primarily classified type of "X" they have.

- a. finish
- b. handles
- c. jaws
- d. joints

5. Wire rope size is determined by:

- a. The number of wires and strands.
- b. Measuring the largest diameter.
- c. Measuring the smallest diameter.
- d. Breaking strength divided by the safety factor.

Sample Question Answers

1. B
2. C
3. D
4. C
5. B



STUDY GUIDE FEEDBACK

Please use this page to notify us of any changes in policies, procedures, or materials affecting this guide. Once completed, return to:

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Human Resources - Performance Assessment Services
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Rosemead, CA 91770

Test Name: Plant Maintenance Mechanic Test (2879)

If you have encountered any discrepancies in the test, please provide an explanation and the page number below.

COMMENTS