TEST INFORMATION GUIDE

This test information guide provides a summary of concepts that are tested on the written (multiple choice) examination for the **Electronics Technician** job. This information can be reviewed in combination with the class specification and examination announcement to assist you in preparing for the examination.

I. OPERATION OF ELECTRICAL EQUIPMENT (22 Questions)

This job requires the employee to have detailed knowledge of the operation of electronic equipment in order to maintain equipment, diagnose mechanical problems and minimize equipment downtime. Employees in this job may evaluate and make recommendations for the purchase of new equipment and use electronic test equipment for performance testing and evaluation of electronic devices. Employees may also modify, adapt and install electronic equipment or design, develop and assemble specialized electronic and electromechanical devices. These critical tasks require one to possess the ability to operate electrical and electronic equipment. Test question topics covered in this section include:

- Use of amplifiers and power supplies;
- Use and characteristics of transistors;
- Measuring power loss and power output;
- Factors affecting the resistance of electrical wire;
- Capacitive reactance;
- Purpose of electric transformers, rectifiers and generators;
- Measuring resistance, power, current voltage;
- Use and characteristics of oscillators, oscilloscopes and potentiometers.

II. EVALUATE & REPAIR ELECTRONIC EQUIPMENT (18 Questions)

A majority of an employee's job time in this position requires testing, repairing, and calibrating various types of electronic equipment. Thus, it is important that one be able to evaluate and repair a variety of electronic equipment. This section of the exam will test your ability to evaluate and diagnose problems with electronic equipment and your ability to effectively make repairs to this equipment. Test question topics in this section of the exam include:

- Using oscilloscopes, milliameters, voltmeters;
- Testing for blown fuses;
- Repairing a broken or cracked foil strip on a printed circuit board;
- How to increase the range of direct current ammeters;
- Troubleshooting problems in radio receivers and amplifiers;
- Determining power outputs in amplifiers;
- Troubleshooting problems with condensors;
- Main purpose for soldering connections between conductors.

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III. ELECTRONIC CIRCUITRY (10 Questions)

This job requires employees to read schematic circuit diagrams to gain an understanding of circuit operation as necessary for repairs. Employees must follow wiring diagrams and product literature in order to install and connect equipment and may need to fabricate electronic circuits and equipment from pencil layouts and schematic drawings. In order to perform these tasks effectively, the employee must be knowledgeable of electrical and electronic energy and circuitry. The questions in this section of the exam test cover topics such as:

- Definitions of electronic terms such as capacitance, impedance, current, inductance;
- Purpose and use of electrical schematics;
- Common symbols used in electronic circuit schematics (i.e., symbols used to denote diodes, transmitters, transistors; amplifiers, etc.);
- Use of switches in electrical circuits;
- Measuring circuit resistance and electric current;
- Changing alternating current into direct current;
- Definition of frequency tolerance.