

# C-21D REFRIGERATION AND AIR CONDITIONING MAINTENANCE CONTRACTOR

## SCOPE OF WORK

The repair and replacement of any parts of existing units or systems of air-conditioning and refrigeration, including the compressors, motors, relays, coils, heat exchangers and other appurtenances and equipment, but not the replacement of complete condenser assemblies on remote systems, air handlers or any work that may alter the design of an existing system.

# of Questions	Minimum Passing Score	Time Allowed
60	42	2 Hours

## CONTENT OUTLINE

Subject Area	# of Items
Systems/Components	20
Metering Devices/Troubleshooting	20
Controls and Wiring	10
Chilled Water	3
Refrigerants	3
Walk-in Refrigerators	1
Safety	3

## REFERENCE LIST

The reference material listed below was used to prepare the questions for this examination. The examination may also contain questions based on trade knowledge, or general industry practices. **Except for Code books**, you can use later editions of references as they become available. For Code questions, the examination will be based **only** on the edition of the Code book that is listed.

Candidates may use a silent, nonprinting, non-programmable calculator in the examination center.

This examination is OPEN BOOK.

*The following reference material is allowed in the examination center:*

1. *Uniform Mechanical Code, 1997*, International Association of Plumbing and Mechanical Officials, IAPMO World Headquarters, 5001 E Philadelphia St, Ontario, CA 91761 USA, 800.85.IAPMO, ISBN: 884590-77-2 www.iapmo.org

Reference material may be highlighted, underlined, and/or indexed. They must be otherwise unmarked (not written in) and may not contain additional papers (loose or attached). THESE REFERENCES WILL NOT BE AVAILABLE IN THE EXAMINATION CENTER.

*The following reference materials are not allowed in the examination center:*

1. *Modern Refrigeration and Air Conditioning*, Althouse, Turnquist, Bracciano, 2000, Goodheart-Willcox, ISBN: 1566377242
2. *Code of Federal Regulations - 29 CFR Part 1926* Revised as of 2002 or later (OSHA), Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954, OR *Code of Federal Regulations - 29 CFR Part 1926 Selections* as of 2003 by PSI, (800) 733-9267, (See order form at the end of the Candidate Information Bulletin.)
3. *Troubleshooting and Servicing Modern Air Conditioning and Refrigeration Systems* by John Tomczyk, 1995, ESCO Press, PO Box 521, Mount Prospect, IL 60056, ISBN: 1-930044-06-2

