
HEAT, AIR CONDITIONING, VENTILATION, DUCT WORK. AND REFRIGERATION EXAMINATION

# of Questions	Minimum Passing Score	Time Allowed
50	35 (70%)	130 Minutes

CONTENT OUTLINE

Content Area	# Items Test
Electrical Knowledge, Motors, and Controls	7
Piping - Refrigeration, Hydronic, Steam, Process	7
Heating and Cooling Principles, Theory, and Equipment	8
Refrigerants and Refrigeration	8
Fuel and LP Gas	5
Combustion Air, Chimneys, Flues and Vents	5
Ducts, Ventilation and Exhaust	5
Load Calculations	5

EXAMINATION STUDY MATERIALS

The reference materials listed below were 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 base your answers on later editions of references as they become available. For Code questions, the examinations will be based only on the edition of the Code book that is listed.

This examination is OPEN book. The following references are allowed in the test room.

International Mechanical Code, 2021, International Code Council, (800) 786-4452, www.iccsafe.org

International Fuel Gas Code, 2021, International Code Council, (800) 786-4452, www.iccsafe.org

Manual J - Residential Load Calcs, reprinted 2016, Air Conditioning Contractors of America (ACCA), 2800 Shirlington Road, Suite 300 Arlington, VA 22206, (703) 575-4477, www.acca.or

Modern Refrigeration and Air Conditioning, 20th or 21st Edition, The Goodheart-Willcox Company, (800)323-0440, www.goodheartwillcox.com

HVAC Duct Construction Standards, Metal and Flexible, 2005, 3rd edition, Sheet Metal and Air Conditioning Contractors' National Association, Inc.,(703) 803-2980, www.smacna.org

Ugly's Electrical References, George V. Hart, 2014, 2017, or 2020 edition, Jones and Bartlett, (800) 832-0034, www.uglys.net

Candidates are responsible for bringing their own references to the examination center. Reference materials may be highlighted, underlined, **annotated**, and/or indexed prior to the examination session. However, references may not be written in during the examination session. Any candidate caught writing in the references during the examination will have the references confiscated and will be reported to the department. Furthermore, candidates are not permitted to bring in any additional papers (loose or attached) with their approved references. Any additional materials will be removed from the references and confiscated. References may be tabbed/indexed with permanent tabs only. Temporary tabs, such as Post-It notes, are not allowed and must be removed from the reference before the exam will begin.