REFERENCE SYLLABUS

For

Power Engineer (5th Class)
Introduction

This Syllabus is intended to assist candidates studying for the Power Engineer (5th Class) Examination.

Recommended Study Program:
It is recommended that, before undertaking this examination, the candidate completes Power Engineering Course of study, offered through a recognized and approved technical institute or training provider which addresses the Syllabus Outline.
Reference Syllabus for Power Engineer (5th Class) Examination Candidates

Major Topic: Basic Physical Science, Safety, and Regulation for Facility Operations

Topic 1 Introduction to Thermodynamics
Topic 2 Fire Safety and Site Hazards
Topic 3 Building Safety
Topic 4 Confined Space Entry
Topic 5 Introduction to Occupational Health and Safety Legislation
Topic 6 Introduction to Heating Plant Safety
Topic 7 Handling of Dangerous Materials
Topic 8 Introduction to Electricity

Major Topic: Low Pressure Boiler Components and Operation

Topic 1 Watertube Boilers (Heating, Power, and Tubular)
Topic 2 Cast-Iron Sectional and Modular Boilers
Topic 3 Firetube Boilers (Heating and Power)
Topic 4 Electric Boilers
Topic 5 Basic Fittings for Steam Boilers
Topic 6 Basic Fittings for Hot Water Boilers
Topic 7 Low Water Fuel Cut-Offs and Feedwater Controls
Topic 8 Heating Boiler Operating Controls
Topic 9 Boiler Combustion Controls
Topic 10 Boiler Programming Controls
Topic 11 Basic Boiler Operation
Topic 12 Routine Boiler Maintenance and Inspection
Topic 13 Combustion and Draft
Topic 14 Burners for Boilers
Topic 15 Piping Materials and Connections
Topic 16 Piping Expansion, Support, and Insulation
Topic 17 Steam Traps
Topic 18 Introduction to Valves
Major Topic: Elements of Human Comfort in Facility Operation

Topic 1 Steam Heating Equipment
Topic 2 Steam Heating Systems
Topic 3 Hot Water Heating Systems
Topic 4 Hot Water Heating System Equipment and Operation
Topic 5 Warm Air Heating System Equipment
Topic 6 Warm Air Furnace Components and Maintenance
Topic 7 Ventilation and Air Filters
Topic 8 Electric Controls for Heating Systems
Topic 9 Refrigeration Theory
Topic 10 Refrigerants
Topic 11 Compression Refrigeration Systems
Topic 12 Refrigeration Compressors
Topic 13 Heat Exchangers for Refrigeration Systems
Topic 14 Refrigeration Accessories
Topic 15 Cooling Towers
Topic 16 Air Conditioning Systems
Topic 17 Air Compression