REFERENCE SYLLABUS

For

Power Engineer (1st Class)
Introduction

This Syllabus is intended to assist candidates studying for the Power Engineer (1st 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 (1st Class) Examination Candidates

Major Topic: Applied Thermodynamics and Plant Cycles

Topic 1 Rankine and Brayton Cycles
Topic 2 Thermodynamics of Steam
Topic 3 Steady Flow Process Calculations
Topic 4 Thermodynamics of Perfect Gases
Topic 5 Expansion and Heat Transfer
Topic 6 Refrigeration Calculations

Major Topic: Principles of Applied and Fluid Mechanics

Topic 1 Lifting Machines
Topic 2 Energy and Momentum
Topic 3 Centripetal Force and Acceleration
Topic 4 Torque and Torsion
Topic 5 Stress and Strain
Topic 6 Static Fluids
Topic 7 Fluids in Motion

Major Topic: Applied Engineering Technologies

Topic 1 Metallurgy
Topic 2 Corrosion, Chemistry and Processes
Topic 3 Boiler Corrosion
Topic 4 Corrosion Monitoring and Prevention Techniques
Topic 5 Corrosion Prevention Programs
Topic 6 Fuel Types
Topic 7 Burner Design
Topic 8 Combustion Optimization
Topic 9 Combustion Safety and Emissions
Topic 10 Water Pre-Treatment
Topic 11 Internal Water Treatment
Topic 12 Water Treatment Management
Topic 13 Non-Boiler Water Treatment
Major Topic: Power Plant Operations
Topic 1 Electrical Energy Management
Topic 2 Plant and Equipment Efficiencies
Topic 3 Power Plant Construction
Topic 4 Commissioning and De-Commissioning
Topic 5 Retrofitting

Major Topic: Legislation and Codes for Industrial Equipment
Topic 1 Codes, Acts and Regulations
Topic 2 ASME Section I
Topic 3 ASME Section VIII and IX
Topic 4 CSA B-51 and B-52
Topic 5 Piping and API Codes