

**TAMIL NADU PUBLIC SERVICE COMMISSION**  
**SYLLABUS**

**BOILER ATTENDANT CERTIFICATE Grade II**  
**(CERTIFICATE COURSE)**

**CODE: 451**

**UNIT-I : WATER CHARACTERISTICS**

Boiler feed water - Boiler water and blow down water - Treatment of raw water (R.O water and D.M / soft water).

**UNIT-II : FUEL CHARACTERISTICS**

Types of fuel (F.O / Bio mass / Coal / Gas) - Fuel calorific value / moisture / sulphur / ash - Air fuel ratio.

**UNIT-III : UNITS OF MEASUREMENT**

Temperature - Pressure - Air measurement - Dryness fraction - Calorific value.

**UNIT-IV : BOILER MOUNTINGS**

Feed check valve - Safety valve - Pressure Gauge - Water level gauge - Start-up vent - Air vent - Fusible plug - Mobery switch - Blow off valve - Man hole.

**UNIT-V : BOILER ACCESSORIES**

Super heater - Economiser - Air pre heater - ID & FD Fans - Soot blower - Dosing system - Ash handling system - Strainer - Oil pre heater - Steam traps.

**UNIT-VI : TYPES OF BOILER**

Fire tube boiler - Water tube boiler - Waste heat recovery - Drum types - Combined fuel type boiler - Oil fired boiler - FBC boiler - Grate boiler - Gas fired boiler.

## **UNIT-VII : TYPES OF STEAM & TYPES OF AIR DRAUGHT**

Wet steam - Dry steam - Super-heated steam – Negative Air draught -  
Balanced Air draught – Positive Air draught.

## **UNIT-VIII : BOILER ECONOMICS**

Steam fuel ratio - Thermal efficiency - Thermal losses - Critical steam  
temperature and pressure.

## **UNIT-IX : BOILER OPERATING PROCEDURE & INSPECTION**

Start-up procedure - Shut down procedure - Monitoring parameters during  
operation - Period of inspection - Inspection preparedness - Hydro test  
procedure - Open test procedure.

## **UNIT-X : EMERGENCY PREPAREDNESS**

Tube puncture - Safety and blowdown valve leakages - Fusible plug blown  
- Low water level - Excess drum pressure - High flue gas temperature -  
Back firing - Water carryover in steam.