

## **Syllabus for First Class Boiler Attendant**

A Candidate, in order to be qualified for a certificate of competency of the First Class, shall satisfy the examiners that in addition to the subject specified for candidates for certificate of competency of the Second Class, he has at least a rudimentary knowledge of the principal elementary facts relating to combustion, heat and steam; and that he is able to explain inter alia-

- a) The working and management of steam boilers, super heaters and economizer;
- b) The use and purpose of various valves, cocks, mounting fitting and other mountings fitting and other safety devices;
- c) Description and the functions of feed pumps, feed injector, feed regulators, feed water filters and softeners, feed heaters, air heaters, calorifiers, steam accumulators, force draught, induced draught and automatic draught control devices.
- d) Answer to question on fact relating to combustion, heat and steam and calculate consumption of coal and water and quantity of steam that may be generated from a given grate area of heating surface under the various systems of draught, in any land boiler and also calculate the overall efficiency of boiler plant;
- e) The significance of principal appliance in use for the prevention of smoke and the principle on which they work and give description of the principal mechanical stokers, pulverizers, gas, oil, and pulverized fuel systems in use;
- f) The need for periodical cleaning, the methods used for prevention of scale or other deposits of heating surfaces and the necessity for maintaining a certain PH value in feed water;
- g) Detection of defects in boilers and state the means and methods of rectifying them;
- h) The precautions to be taken for starting a boiler and economizer from cold or from banked firecondition;
- i) The procedure to be adopted in putting an economizer out of Commission while the boiler is on steam;
- j) The methods adopted for the achievements of fuel economy and the use of various instruments used in a Boiler House;
- k) The principal causes and effects of corrosion and incrustation and the usual remedies employed;
- l) The object of the use of water softeners;
- m) The principles on which feed pumps and injectors work;
- n) the principles on which appliances for the prevention of smoke works; and
- o) the purpose of super-heaters, economizers, feed heaters, feed filters, forced and induced draft appliances and mechanical stokers.