

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER • 2014****Subject Code: 151904****Date: 17-06-2014****Subject Name: Power Plant Engineering****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain with neat sketch, construction and working of La Mont Boiler. **07**
(b) Draw a steam power plant and discuss its advantages. **07**
- Q.2** (a) State general lay of modern steam power plant label major component and state function of each component. **07**
(b) Calculate the cost of generation per kWhr for a power station having following data: **07**
Installed capacity of plant =200MW; Capital cost=Rs400; crores Rate of interest and depreciation =12% Annual cost of fuel , salaries and taxation=Rs 5 crores; Load factor=50%. Also estimate the saving in cost per KW hr if annual factor is raised to 60%.
- OR**
- (b) Explain the constructional difference between Low pressure and High pressure boiler **07**
- Q.3** (a) What are the reasons of corrosion in a boiler and how it is control? **07**
(b) Derive an expression for maximum discharge through a chimney. **07**
- OR**
- Q.3** (a) Draw and explain diesel engine power plant. **07**
(b) Explain the working of Electrostatic precipitator with neat sketch. **07**
- Q.4** (a) Explain with neat sketch construction and working of CANDU type reactor. **07**
(b) Discuss bad effects of acid rains. How acid rains are controlled? **07**
- OR**
- Q.4** (a) Write short note on sodium zeolite ion exchange process. **07**
(b) Differentiate between Jet and Surface condensers. **07**
- Q.5** (a) Explain seawater treatment using reverse osmosis process. **07**
(b) Give the comparison between the following: **07**
(i) Nuclear power plant and thermal power plant
(ii) Diesel power plant and thermal power plant
- OR**
- Q.5** (a) What are fission fragment and fission product? Explain Fission Reaction with an example. **07**
(b) With neat sketch explain Pneumatic ash handling system. List its advantages and disadvantages. **07**
