Seat No.:	Enrolment No

## GUJARAT TECHNOLOGICAL UNIVERSITY PDDC-SEMESTER IV-• EXAMINATION - SUMMER - 2016

Date:21/11/2016

**Subject Code: X41903** 

**Subject Name: Power Plant Engineering** Time:02:30 PM to 5:00 PM **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. Discuss the factors which are considered while selecting a site for a thermal power plant. 07  $\mathbf{O.1}$  (a) Explain Benson boiler with neat sketch 07 **(b)** What are the advantages and disadvantages of pulverized coal firing? 07 Q.2(a) Explain the working of a ball & race mill with neat sketch. **(b)** 07 How the dust collectors are classified? Explain the working of cyclone dust collector. **(b)** 07 Discuss the working of an evaporative condenser with neat sketch Q.307 (a) Why draught is necessary in boilers? Explain natural draft with suitable illustration. **(b)** 07 Classify steam condensers and explain shell and tube type condenser with neat sketch. 07 0.3(a) The following observations were taken during a test on surface condenser: 07 (1) Vacuum in condenser=71.5 cm of Hg (2) Barometric reading = 76.5 cm of Hg (3) Temperature of condensate=32°C (4) Hot well temperature=30°C Calculate: (1) Partial pressure of air in bar (2) Mass of air in kg/m3 of condenser volume (3) Vacuum efficiency Write short notes on cyclone burner. 0.4 (a) 07 Explain single retort stocker with neat sketch **(b)** 07 OR Discuss the various effect of pollutants on human being. 07 0.4 (a) **(b)** Explain the following terms: 07 1. Diversity factor 2. Load factor 3. Maximum demand 4. Utilization factor 0.5 Explain working of CANDU type reactor with neat sketch. 07 (a) Explain with neat sketch arrangement of a diesel power plant and function of each system **(b)** 07 OR Compare mechanical draught and natural draught cooling tower. 07 Q.5 (a) Explain sea water treatment using reverse osmosis process. **(b)** 07

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