

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER –IV• EXAMINATION – SUMMER - 2017

Subject Code: 361919**Date: 11-05 - 2017****Subject Name: Power Plant engineering****Time: 10:30 AM TO 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.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** (a) Explain solar thermal power plant **07**
 (b) Draw Benson boiler neat sketch and give advantage and disadvantage **07**
- Q.2** (a) Explain regenerative Rankin cycle with h-s and t-s diagram also give its advantages and disadvantages **07**
 (b) Explain any one method of improving Rankin cycle efficiency **07**
- OR
- (b) Explain simple Rankin cycle and analysis of simple Rankin cycle considering pump work **07**
- Q.3** (a) Explain pulverized fuel preparation system with sketch **07**
 (b) Explain cyclone furnace with neat sketch **07**
- OR
- Q.3** (a) Draw schematic diagram of modern thermal power plant and explain its parts **07**
 (b) Explain over feed stocker furnace with neat sketch **07**
- Q.4** (a) Explain nozzle control governing with neat sketch **07**
 (b) Explain hyperbolic cooling tower with neat sketch also give its advantages **07**
- OR
- Q.4** (a) Explain exhaust gas system of diesel power plant with sketch **07**
 (b) Explain tubular type combustion chamber with neat sketch **07**
- Q.5** (a) Explain fission and fusion reaction **07**
 (b) Write short note on nuclear fuels **07**
- OR
- Q.5** (a) Explain basic elements of hydro power plant with sketch **07**
 (b) A power plant using steam as working fluid operates on a Rankin cycle. The boiler and condenser pressures are 30bar and 1 bar. The condition of steam entering the prime mover having dryness fraction of 0.7.find the thermal efficiency of the cycle. **07**