

GUJARAT TECHNOLOGICAL UNIVERSITY**PDDC- SEMESTER-III - EXAMINATION – SUMMER 2017****Subject Code: X30904****Date: 02/06/2017****Subject Name: Electrical Power****Time: 02:30 PM to 05:00 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 hydro power station with schematic diagram. **07**
(b) Discuss the advantages and disadvantages of steam power station. Which points are to be considering for site selection of steam power station? **07**
- Q.2** (a) Explain nuclear power station with diagram. **07**
(b) Discuss the advantages and disadvantages of nuclear power station. Write the types of nuclear reactor. **07**
- OR**
- (b) What are the advantages of Solar energy? Also discuss its limitations. What are the applications of Solar energy? **07**
- Q.3** (a) Explain combined cycle power plant. **07**
(b) Explain skin effect and proximity effect. Also discuss the significance of these effects in power system. **07**
- OR**
- Q.3** (a) Discuss the merits and demerits of wind energy. Write the applications of wind energy. **07**
(b) Explain the wind turbine generator for power generation. **07**
- Q.4** (a) Explain gas turbine power plant with diagram. **07**
(b) Explain the types of distribution systems. **07**
- OR**
- Q.4** (a) Explain in detail clearly, what you understand by GMR and GMD of a transmission line. **07**
(b) Derive the expression for Capacitance per phase of a three phase transmission line with symmetrical spacing. **07**
- Q.5** (a) What is a substation? Explain classification of substation in detail. **07**
(b) What is a power factor? Discuss the disadvantages of low power factor. How power factor is improved? **07**
- OR**
- Q.5** (a) What is neutral earthing? Write the types of neutral earthing. Explain any one in detail. **07**
(b) Write the function of : (i) Economizer (ii) Moderator (iii) Control rods (iv) Surge tank (v) Super heater (vi) Spillway (vii) Fore bays **07**
