

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER-III EXAMINATION – WINTER 2015

Subject Code: X30904**Date: 29/12/2015****Subject Name: ELECTRICAL POWER****Time: 10:30pm to 01:00pm****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) Draw the schematic arrangement of steam power station. Also state the Equipment of Steam Power Station **07**
(b) Give Comparison of the Various Power Plants. **07**
- Q.2** (a) Draw and explain Nuclear Power Station **07**
(b) Explain the site selection, advantages and disadvantages of hydro power station. **07**
- OR**
- (b) Draw the schematic arrangement of gas turbine power plant. Also list out their equipments. **07**
- Q.3** (a) Explain solar photovoltaic system and also explain its use in solar pumping. **07**
(b) State merits and limitations of solar energy. **07**
- OR**
- Q.3** (a) Discuss the grid connected wind energy conversion system with help of schematic diagram. **07**
(b) Explain effects of wind speed on grid conditions with grid connected wind power systems. **07**
- Q.4** (a) Compare different parameters of overhead and underground power distribution system. **07**
(b) Explain different types of cables and their construction. **07**
- OR**
- Q.4** (a) Explain the following terms related to transmission line: **07**
(1) Transposition (2) Bundle conductor
(b) Explain the skin effect and Ferranti effect related to transmission line. **07**
- Q.5** (a) Explain the disadvantages of poor power factor. **07**
(b) The load on an installation is 800 KW, 0.8 lagging power factor which works for 3000 hours per annum. The tariff is Rs 100 per KVA plus 20 paise per KWh. If the power factor is improved to 0.9 lagging by means of loss-free capacitors costing Rs 60 per KVAR, calculate the annual saving effected. Allow 10 % per annum for interest and depreciation on capacitors. **07**
- OR**
- Q.5** (a) State and explain equipment used in substation. **07**
(b) Distinguish between isolated neutral and earthed neutral systems. **07**
