Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (OLD) - EXAMINATION – SUMMER 2017

•			U5/U5/2U17	
	•	ct Name: Electrical Power Engineering 02:30 PM to 05:00 PM Total Marks	. 70	
	ime: struct		. 70	
	1. 2.	Attempt all questions.		
Q.1	(a)	Explain string efficiency and methods of improving it.	07	
	(b)	What is meant by Corona? What are the various factors which affect corona? How can the corona effect be minimized?	07	
Q.2	(a) (b)	Discuss the merits and demerits of Underground and Overhead systems. Explain importance of voltage control and method to achieve it. OR	07 07	
	(b)	Compare A.C and D.C power supply scheme.	07	
Q.3	(a)	Explain the working of a Nuclear Power Plant with its neat schematic	07	
	(b)	diagram. A diesel station supplies the following loads to various consumers: industrial load =1500 kw, commercial load=750 kw ,domestic power load=100 kw, domestic light load=450kw,If the maximum demand on the station is 2500 kw and the number of kwh generated per year is 45*10 ⁵ ,determine (1)the diversity Factor(2) annual load factor.	07	
Q.3		OR		
Q.S	(a)	Explain (1) Load factor (2) Demand factor (3) Diversity factor (4) Load (5) Duration curve.	07	
	(b)	A factory has an average demand of 50kw and annual load factor of 0.5. The power factor is 0.75 lagging .The tariff is Rs 100 per kva of maximum demand per annum plus 5 paise per kwh .If loss free capacitors costing Rs 600 per Kvar are to be utilized ,find the value of power factor at which maximum saving will result. The interest and Depreciation together amount to 10%. Also determine the annual saving effected by improving the p.f to this value.		
Q.4	(a) (b)	Write a note on Tap changing transformer. (ON load) What is load curve? State the information available from the load curve. OR	07 07	
Q.4	(a)	Classify the Underground cables. Also describe the general construction of an underground cable with neat sketch.	07	
	(b)	Explain different equipments used in substations with its symbols.	07	
Q.5	(a)	Explain the various methods of Power factor improvement.	07	

(b) Explain the working of a hydro Power Plant with its neat schematic diagram. 07 Also explain its merits and de-merits.

Q.5

(a) Derive the ABCD parameter for Nominal π Medium transmission line. 07

(b) Draw schematic diagram of Thermal Power Plant. Also explain functions of following: (1) Economiser (2) Air pre-heater (3) ID-fan & FD-fan
