Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2015

Subject Code: 2142404 **Date: 26/05/2015**

Subject Name: BASIC POWER SYSTEMS

Time:10:30am-1.00pm **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 schematic arrangement of thermal power plant and list out its main components.	**07**
	(b)	Enlist the different methods of power factor improvement and explain any one in detail.	**07**
Q.2	**(a)**	What is sag? Explain the calculation of sag in transmission line.	**07**
	(b)	Draw and explain the typical layout of electrical power system from generation to distribution.	**07**
		OR	
	(b)	What is power factor? Draw and explain power triangle.	**07**
Q.3	**(a)**	What are the corona losses? Explain Peek's and Peterson's formula for calculating the corona loss.	**07**
	(b)	Derive the equation of the capacitance in case of single phase transmission line.	**07**
		OR	
Q.3	**(a)**	What is transposition? Discuss the importance of transposition in transmission line.	**07**
	(b)	Explain skin effect and proximity effect in ac supply system.	**07**
Q.4	**(a)**	Enlist the types of transmission line and explain nominal T model of the medium transmission line with necessary equations.	**07**
	(b)	Explain the bundled conductors in EHV transmission lines with its merits.	**07**
		OR	
Q.4	**(a)**	Explain the Ferranti effect with necessary diagram.	**07**
	(b)	What are the merits and demerits of HVDC transmission?	**07**
Q.5	**(a)**	Define the grounding and explain Neutral grounding.	**07**
	(b)	Explain the solid grounding with necessary diagram.	**07**
		OR	
Q.5	**(a)**	Compare the indoor and outdoor Sub-stations.	**07**
	(b)	Enlist the equipments along with its symbols used in Sub-stations.	**07**

****