Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (NEW) - EXAMINATION – SUMMER 2018

Subject Code:2142404 **Date:17/05/2018**

Subject Name:Basic Power Systems

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.**

Q.1	**(a)**	Discuss disadvantage of low power factor.	**03**
	(b)	List the advantages and disadvantages of Nuclear power station.	**04**
	(c)	Discuss the importance of power factor improvement. Derive the expression of most economical power factor.	**07**
Q.2	**(a)**	Define Corona. List factors affecting Corona.	**03**
	(b)	List out main components of overhead transmission line with its function.	**04**
	(c)	Discuss the advantages and disadvantages of (i) pin-type insulator (ii) suspension type insulators.	**07**
		OR	
	(c)	Discuss Main Components of Overhead Lines.	**07**
Q.3	**(a)**	Explain proximity effect in ac supply system.	**03**
	(b)	Explain end condenser method for medium transmission line.	**04**
	(c)	Derive the equation of an inductance of a conductor and loop inductance for single-phase two wire line.	**07**
		OR	
Q.3	**(a)**	What do you understand by long transmission line?	**03**
	(b)	What is the effect of load power factor on regulation of a transmission line?	**04**
	(c)	List the methods for solution of medium transmission lines. Explain nominal T method.	**07**
Q.4	**(a)**	Explain various methods to improving string efficiency.	**03**
	(b)	Explain types of DC links in brief.	**04**
	(c)	Explain the sending end circle diagram.	**07**
		OR	
Q.4	**(a)**	Explain voltage transformer earthing.	**03**
	(b)	Discuss advantages of HVDC transmission system.	**04**
	(c)	Draw the arrangement of main components of HVDC transmission system. Explain it in detail.	**07**
Q.5	**(a)**	What is power factor? Draw and explain power triangle.	**03**
	(b)	Define the grounding and explain solid grounding with diagram.	**04**
	(c)	What is reactance grounding? What are its advantages and disadvantages?	**07**
		OR	
Q.5	**(a)**	Explain the Ferranti effect.	**03**
	(b)	Define Sag. Derive the equation of sag, when supports are at equal level.	**04**
	(c)	Classify Sub-station. Explain it in detail.	**07**

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