GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV (New) EXAMINATION – WINTER 2019

Subject Code: 2142404   **Date: 07/12/2019**
Subject Name: Basic Power Systems
Time10:30 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 in brief the power generating station.	**03**
	(b)	List the advantages and disadvantages of Hydro power station.	**04**
	(c)	Classify Sub-station. Explain comparison between indoor and outdoor substation.	**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)	Derive the equation of an inductance of a conductor and loop inductance for single-phase two wire line.	**07**
		OR	
	(c)	Explain constants of a Transmission Line in detail.	**07**
Q.3	**(a)**	Explain proximity effect in ac supply system.	**03**
	(b)	Explain end condenser method for medium transmission line.	**04**
	(c)	State and explain symmetrical components.	**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)	Explain bundled conductors in detail.	**07**
Q.4	**(a)**	Discuss various methods to improving string efficiency.	**03**
	(b)	Give the classification of DC links and explain any one in detail.	**04**
	(c)	Explain the receiving end circle diagram.	**07**
		OR	
Q.4	**(a)**	Explain voltage transformer earthing.	**03**
	(b)	Explain merits 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 transposition? Discuss the importance of transposition in transmission line.	**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 skin effect in brief.	**03**
	(b)	What is Sag. Derive the equation of sag, when supports are at equal level.	**04**
	(c)	Discuss the importance of power factor improvement. Derive the expression of most economical power factor.	**07**

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