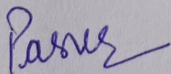
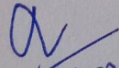


"PVC"NSSK Govt. Poly. Bilaspur		Department: Electrical Engg	Subject: EP-2
Theory -4 lecture/week Total Period-56			
week	THEORY		Recommended Books
	Lecture Day	Topic	
1	1	1.1 Single line diagram of Electrical Power Supply System	1. Electrical Power System and Analysis by CL Wadhwa, 3rd edition, New Age International Publishers, New Delhi
	2	1.2 Advantages of high voltage transmission	
	3	1.3 Various systems of electrical power transmission	
	4	DC system, 1-phase AC system	
2	1	do	Electrical Power System by JB Gupta, S K Kataria and Sons, New Delhi
	2	2-phase ac system, 3-phase AC system	
	3	do	
	4	1.4 Comparison between AC and DC system for transmission of electrical power	
3	1	2.1 Types of line supports	
	2	Types of conductors	
	3	earth wire and their accessories	
	4	2.2 Insulator, selection of insulator	
4	1	string efficiency of suspension type insulator	
	2	2.3 ACSR Conductor, Bundled conductors	
	3	Transposition of 3-phase line	
	4	2.4 Span length	
5	1	Sag and stress calculation	
	2	Stringing chart	
	3	Sag template, effects of wind and ice on Sag	
	4	Numericals	
6	1	3.1 Choice of working voltage for transmission	
	2	3.2 Economic size of line conductor- Kelvin's law	
	3	3.3 Inductance of a conductor due to internal flux and external flux	
	4	3.4 Inductance of a single phase two-wire line and of three phase line	
7	1	3.5 Capacitance of three phase line	
	2	charging current due to capacitance	
	3	3.6 Skin effect	
	4	Ferranti effect	


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8	1	proximity effect in conductors of transmission line	
	2	3.7 Corona: factor affecting	
	3	advantages and disadvantages, corona power losses and methods to reduce the corona	
	4	4.1 Substation: Indoor and outdoor substations	
9	1	equipment for substation	
	2	Auxillary supply	
	3	4.2 Distribution Systems: Radial, ring mains and inter-connected distribution system	
	4	4.3 Comparison of AC and DC distribution system	
10	1	5.1 Advantages and disadvantages of underground system with respect to overhead system	
	2	5.2 Underground Cables: Types of cables	
	3	construction of cables	
	4	grading of cables	
11	1	capacitance	
	2	ratings, thermal characteristics and applications	
	3	6.1 Necessity of EHV Transmission	
	4	6.2 Limitation of EHV-AC Transmission System	
12	1	6.3 Basic Concepts of HVDC System	
	2	6.4 Limitation of HVDC Transmission	
	3	6.5 Comparison between EHV-AC and HV-DC Transmission	
	4	7.1 Concept of power factor	
13	1	Causes	
	2	effects of low power factor in power system	
	3	Methods to improve power factor	
	4	Synchronous condenser	
14	1	Synchronous condenser VAR Static Compensators	
	2	Class test 1- 3 rd week of October	
	3	Class test 2- 4 th week of November	
	4	House test- 2 nd week of December	

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