

2072
M.E. Electrical Engineering (Power Systems)
Second Semester
EE-8202: EHV AC Transmission

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt any five questions. All questions carry equal marks.

x-x-x

1	List the various issues encountered in EHV AC transmission and suggest measures to resolve those issues.
2 (a) (b)	Derive the formula for capacitance per phase per km of bundled conductor line. Enlist the various properties of bundled conductors.
3	Describe distribution of voltage gradients on sub-conductors of N-conductor bundle (where N=2,4, and 6) with the help of analytical and graphical representation.
4.	Write down the procedure for diagonalization of Inductance matrix of a transposed line $L = \begin{matrix} L_S & L_M & L_M \\ L_M & L_S & L_M \\ L_M & L_M & L_S \end{matrix}$
5	Discuss the formulae used for calculation of Corona Loss and Audible noise in EHV AC Transmission lines.
6	Discuss the impact of speed of circuit breaker on short circuit current and measure required to be taken for reduction of switching surges on EHV systems.
7. (a) (b)	Derive an expression for Maximum Charge Condition on a 3Phase Line. What is the purpose of synchronous condenser and how voltage profile increases using synchronous condenser?
8	State the reasons for existence of sub-synchronous resonance (SSR) in the steady state and transient conditions in series-compensated lines. Also suggest remedies to counteract SSR.

x-x-x