

R09

Code No: C5608**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.Tech I Semester Examinations, March-2011****EXTRA HIGH VOLTAGE TRANSMISSION****(POWER SYSTEMS HIGH VOLTAGE)****Time: 3hours****Max. Marks: 60**

Answer any five questions
All questions carry equal marks

- - -

- 1.a) What are the problems encountered while transmitting power using EHV AC transmission?
 - b) Explain different mechanical considerations in the performance of EHV AC lines. [12]
- 2.a) What is a bundled conductor ? Explain its properties.
 - b) A 3- phase 750 KV horizontal line has minimum height of 14m, sag at mid span = 4m, phase spacing 17m. Conductors are 4x 0.035 m with bundle spacing if $B = 0.4572\text{m}$. Calculate per km, the values of zero, positive, and negative sequence inductances of a transposed line. [12]
3. Explain the diagonalization procedure of the capacitance matrix of transposed and un- transposed line. [12]
4. The outer cylinder of a cage is 2 meters in diameter. A single conductor 4cm in diameter is strung concentric with it and the arrangement is 30m long. Calculate
 - i) The surface voltage gradient (gradient factor) on the conductor.
 - ii) The capacitance of the arrangement, and
 - iii) The surge impedance. [12]
5. Obtain different types of corona loss formulas and discuss their limitations and advantages. [12]
6. Explain the generation and characteristics of audible noise EHV A.C. lines. What are the factors on which the audible noise depends upon? State the limits for audible noise. [12]
7. Explain Cascade connection of shunt and series compensation in voltage control of EHV A.C lines. [12]
8. Explain various types of SVC schemes used in EHV A.C lines. [12]
