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PROVA P2- Geração Transmissão e Distribuição de Energia Elétrica-ELT344

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Aluno: Matrícula:
Data: 24/02/2022 Nota:

INFORMAÇÕES IMPORTANTES:

-A prova pode ser apresentada no word ou pdf, sem copias de texto de livros;
-A prova pode ser desenvolvida em equipe, mas ao apresentar no Pvanet Moodle, cada aluno envia sua prova.

1. Determine the inductance of 3-phase line arranged, as shown in Figure 10.20. The radius of each conductor is 0.03 m. The spacing between phase conductors is 40cm and distance between the phases (D) is equal to 6 m.

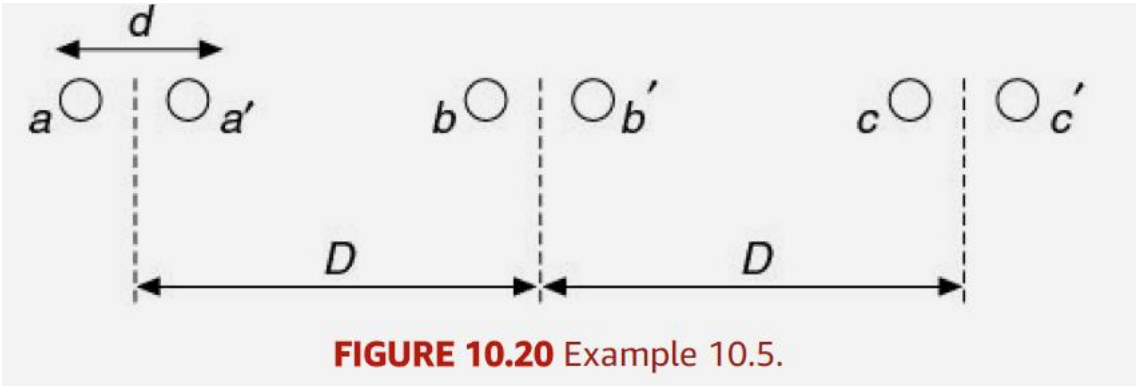


FIGURE 10.20 Example 10.5.

2. A single-phase 20-km line is 10 m above the ground. The diameter of the conductors is 2 cm and is separated by 4 m horizontally. Find: (a) Capacitance between conductors (b) Capacitance between phase and neutral plane (c) Capacitance when effect of ground is neglected (d) Charging current when the line is charged at 33-kV, 50-Hz supply.

3. Determine the capacitance per phase of a 3-phase transmission line shown in Figure 10.31. Diameter of conductors is 2.5 cm. Assume the line is transposed.

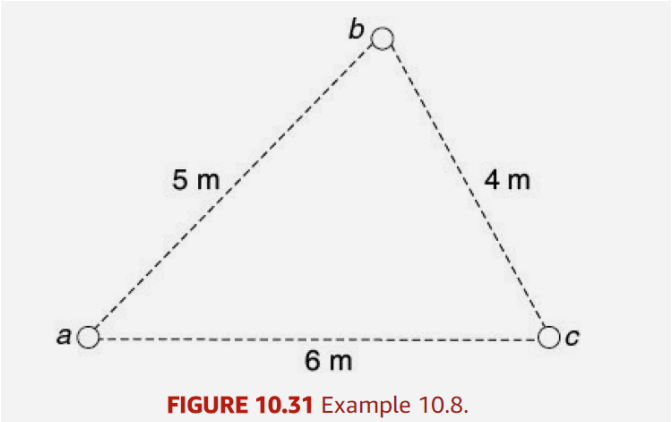
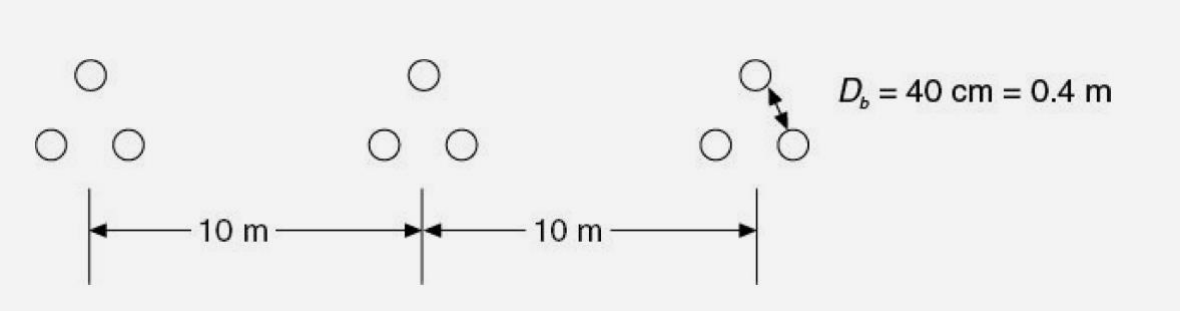


FIGURE 10.31 Example 10.8.

4. A 50-Hz 3-phase line (transposed) composed of one ACSR Moose conductor (overall Dia. = 31.8 mm) per phase has flat horizontal spacing of 10 m between adjacent conductors. Compare the inductive and capacitive reactances in ohms per kilometre per phase of this line with that of a line (transposed) using a three-conductor bundle of ASCR lynx conductor (each having overall Dia. = 19.6 mm) having 10 m spacing measured from the centre of the bundles. The bundle conductors in each phase are arranged in an equilateral triangle formation with spacing between conductors in the bundle as 40 m. Solution Case– I Unbundled (single) Moose conductor.



5. Determine the capacitance and inductance per kilometre length of a double-circuit three-phase line, as shown in Figure 10.37. The transmission line is transposed. The diameter of each conductor is 25 mm.

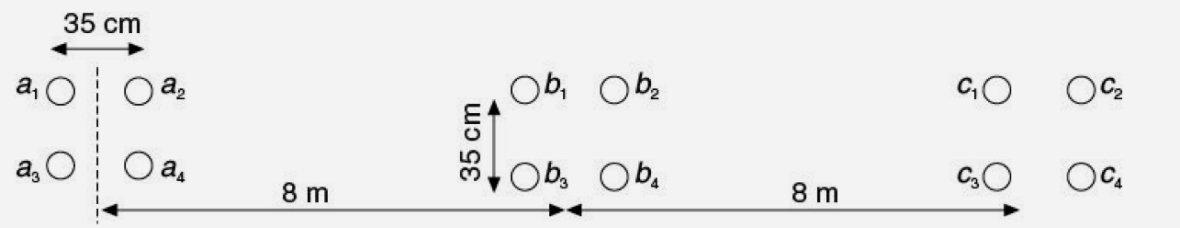


FIGURE 10.37 Problem 10.8.