



COLLEGE OF ENGINEERING & TECHNOLOGY

Department : Electrical & Computer Control Engineering

Lecturer : Prof Hussien Dessuki

Course Electrical Power

Time: 120 Min.

Course Code: EE 448

Date : 14/1/2015

Final Exam Paper

Answer the following questions:

Question (1):

a- A 2 wire DC distribution cable "AB" is 2 Km long and supplies load of 100A, 150A, 200A and 50A located 500 m, 1000 m, 1600m, and 2000m from feeding point "A" each conductor has a resistance of $0.01 \Omega/\text{Km}$.

Calculate the potential difference at each point if the voltage at point "A" is maintained at 500V. **(5 Marks)**

b- A 2 Km long single phase AC distributor supplies a load of 120A at 0.8 lagging power factor at its far end and a load of 80A at 0.9 lagging power factor at its middle point. Both power factors are assumed to be referred to the voltage at the far end. The resistance and reactance per Km (**go and return**) are 0.05Ω and 0.1Ω respectively. If the voltage at the far end is maintained at 220V

Calculate

- The voltage at send end.
- Phase angle between voltages at two ends. **(5 Marks)**

Question (2):

a- Draw single line diagram of single-phase single-core cable indicating its main parts. **(5 Marks)**

b- An OHTL is supported between two towers with 150 m between them. Also, there is a vertical difference between the two towers of 10 m. the specific weight of the conductor is $0.006 \text{ Kg/mm}^2/\text{m}$ and the maximum tension must not exceed 10 Kg/mm^2 . What will be the position of the lowest point of the conductor relative to both supports and the actual length of the TL? **(5 Marks)**

Members of course Examination Committee:	Signature:	Date:
Lecturer:	H. Dessuki	22/12/14
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