



C16-EE-403

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**BOARD DIPLOMA EXAMINATION, (C-16)
OCTOBER/NOVEMBER-2018
DEEE-FOURTH SEMESTER EXAMINATION**

POWER SYSTEMS-II

Time : 3 Hours]

[Total Marks: 80

PART-A

3X10=30

Instructions :

1. Answer **All** questions.
2. Each question carries **Three** marks.
3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. State Ferranti effect.
2. Mention six advantages of DC transmission system.
3. What is skin effect.
- * 4. Draw the schematic diagram of HVDC transmission system and label its parts.
5. State the need of cross arms.
6. Define string efficiency.
7. Classify the underground cables based on voltage rating.
8. State any six functions of a substation.
9. Define (a) feeder (b) distribution (c) service mains.
10. Compare radial and ring distribution systems any three aspects.

PART-B

10X5=50

Instructions : *

1. Answer any **Five** questions.
 2. Each question carries **ten** marks.
 3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer
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11. Derive an expression for loop inductance of a single transmission line.
 12. A single-phase line is transmitting 1100 KW power to factory at 11 kv and at 0.8pf lagging. It has a total resistance of 2 ohms and loop reactance of 3 ohms. Determine i) the voltage at the sending end, ii) Percentage regulation and iii) Transmission efficiency.
 13. (a) State the effects of corona and methods to reduce corona.
(b) Classify the types of distribution system.
 14. (a) Derive an expression for Sag when supports are at same level in a Transmission line.
(b) Compare pin type and suspension type insulators in any five aspects.
 15. State and explain the main components of Over head line.
 16. (a) Derive an expression for insulation resistance of a Cable.
(b) Compare Over head lines with underground cables.
 17. Explain various components used in substations.
 18. A Two-wire a.c feeder is loaded as shown in figure. The power factors are lagging and are referred to voltage at the respective load point. The section impedance $F A = 0.03 + j0.05$ and $A B = 0.05 + j0.08$ ohms. If the voltage at the far end is to be maintained at 230V, Calculate the voltage at the supply end.


