



C16-EE-403

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BOARD DIPLOMA EXAMINATION, (C-16)
MARCH/APRIL—2018
DEEE—FOURTH SEMESTER EXAMINATION

POWER SYSTEMS—II (T & D)

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions** : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is skin effect?
2. State Ferranti effect.
3. Write the empirical formula for determining system voltage.
4. Write any three advantages of HVDC system.
5. Mention any four causes for failure of insulators.
6. State the need of cross arms and mention its types.
7. Write any three properties of insulating material used for underground cables.
8. Write any three differences between indoor and gas insulated substation.
9. Define the terms 'feeder', 'distributors' and 'service mains'.
10. What is secondary distribution system?

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PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11.** Derive the expression for capacitance of single-phase transmission system.
- 12.** What is corona in transmission line and how to reduce corona?
- 13.** (a) Write any five applications for hot line technique. 5
(b) Explain about radial and ring main distribution system. 5
- 14.** A transmission line has a span of 200 meters between level supports. The conductor has a cross-sectional area of 1.29 cm^2 , weights 1170 kg/km and has a breaking stress of 4218 kg/cm^2 . Calculate the sag for a safety factor of 5, allowing a wind pressure of 122 kg/m^2 .
- 15.** What are the main components in overhead transmission lines?
- 16.** Explain the construction of high-tension underground cable with a neat sketch.
- 17.** Explain the following equipments used in substation :
(a) Transformers
(b) Protective relays
(c) Lightning arrestors
(d) Fire-fighting equipment
- 18.** A two-wire distributor is fed at *A* and *B* with 510 volt and 500 volt respectively. Loads of 180 amp and 100 amp are taken at point *C* and *D*. Resistance of both the conductors between *AC* is 0.03 ohm between *CD* is 0.05 ohm and *DB* is 0.02 ohm. Find the value of current in each section of the distributor and voltage at each load point.
