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(2063)

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B.Tech 4th Semester Examination

Distribution of Elect. Power

EE-4001

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/ continuation sheet will be issued.

Note : The question paper consists of five sections A, B, C, D and E. Section E is compulsory and select one question from each of the sections A, B, C and D.

SECTION - A

1. Discuss the structure of the power system. Explain the main and transfer bus system with a circuit diagram. **(20)**

2. Compare (i) radial distribution system (ii) ring distribution system. **(20)**

SECTION - B

3. What do you understand by electric potential? Derive an expression for electric potential and deduce the formula for capacitance for the following cases.

   (a) Single phase two conductor line

   (b) Three phase unsymmetrical spacing but transposed. **(20)**

4. A 50 Hz, 3-phase transmission line is 250 km long. It has a total series impedance of $(40+j100)\Omega$ and shunt admittance of $914\times10^{-6}\Omega$. It delivers 50 mW at 220 kV with power factor of 0.9 lag. Find (i) sending end voltage (ii) voltage regulation and (iii) transmission efficiency by nominal T method. **(20)**

SECTION - C

5. What is a stringing chart? Explain clearly the procedure adopted for stringing the power conductors on the supports. **(20)**

6. Explain working of different types of insulators used in overhead lines. Give their field of applications. **(20)**

SECTION - D

7. Describe the function of sheath in cables. How are sheath losses reduced in modern multicore cables? **(20)**

8. What are the disadvantages of corona? Explain how the corona considerations effect the design of a EHV transmission line. **(20)**

SECTION - E

9. Short answer type questions.

   (i) Why all overhead lines use ACSR conductors? **(2)**

   (ii) State any two advantages of rin-main distribution system. **(2)**

(iii)	Why skin effect is absent in dc system?	**(2)**
(iv)	Define Ferranti effect.	**(2)**
(v)	State any two merits of corona.	**(2)**
(vi)	Define surge impedance.	**(2)**
(vii)	Why armouring is not done in single core cables?	**(2)**
(viii)	Define sag of a Transmission line.	**(2)**
(ix)	What is the need of grading insulators?	**(2)**
(x)	What are types of pressure cables?	**(2)**