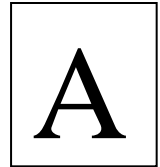




Reg.No:

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SNS College of Technology, Coimbatore-35
(Autonomous)
B.E/B.Tech- Internal Assessment Examination-I
Academic year 2024-2025 (ODD)
Fifth Semester
Electrical and Electronics Engineering
19EET302 / POWER SYSTEM - I



Time: 1 1/2 Hours

Maximum Marks: 50

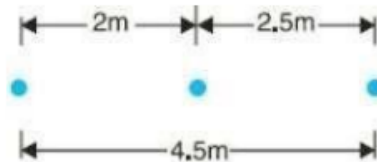
Answer ALL questions

PART - A (5x 2 = 10 Marks)

- | | | | |
|----|--|-----|-----|
| 1. | Point out the Need for EHVAC Transmission system. | CO1 | U |
| 2. | Sketch the Equivalent circuit of Transmission line and list its parameters. | CO1 | R |
| 3. | A three-phase transmission line has its conductors at the corners of an equilateral triangle with side 3m. The diameter of each conductor is 1.2 cm. Find the inductance per phase per km of the line. | CO1 | App |
| 4. | Differentiate GMD and GMR. | CO1 | R |
| 5. | Interpret how the Voltage Regulation and Transmission efficiency defines the performance of Transmission line. | CO2 | U |

PART – B (2x 13 = 26 Marks & 1x 14 = 14 Marks)

- | | | | | |
|----|--|----|-----|-----|
| 6. | (a) Build a single line diagram to discuss about the bulk power transmission to the end user using a structured Modern Electric Power system.
(or) | 13 | CO1 | U |
| | (b) Identify the types of Talcher-Kolar HVDC link and list out the various operating links of HVDC transmission system with its merits and uses. | 13 | CO1 | App |
| 7. | (a) Develop an expression for inductance of a 3Φ transmission line of an unsymmetrical Transposed system.
(or) | 13 | CO1 | App |
| | (b) Construct an expression for Capacitance of a 3Φ transmission line of a symmetrically spaced system. | 13 | CO1 | App |
| 8. | (a) Show a representation of the facility's block diagram for the Mettur Thermal Power Plant and describe the individual roles played by each part of the thermal power plant.
(or) | 14 | CO1 | App |
| | (b) A 3-phase, 50 Hz, 66 kV overhead line conductors are placed in a horizontal plane as shown in Fig. The conductor diameter is 1.25 cm. If the line length is 100 km, calculate (i) capacitance per phase, (ii) charging current per phase, assuming complete transposition of the line. | 14 | CO1 | App |





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B

Time: 1 1/2 Hours

Maximum Marks: 50

Answer ALL questions

PART - A (5x 2 = 10 Marks)

1. List the various HVDC links available in India. CO1 R
2. Identify the impacts of Skin and proximity Effects in transmission conductors. CO1 App
3. A three-phase transmission line has its conductors spaced at a distance of $D_{ab} = 2\text{m}$, $D_{bc} = 3\text{m}$, $D_{ac} = 4\text{m}$. The diameter of each conductor is 1.63cm. Find the inductance per phase per km of the line. CO1 App
4. What is an ACSR conductor? List its Merits. CO2 U
5. Classify Transmission lines. CO2 U

PART – B (2x 13 = 26 Marks & 1x 14 = 14 Marks)

6. (a) Using the Suzlon Wind Energy Conversion System as a case, Illustrate the block diagram and explain the operation of each component within the system 13 CO1 App
(or)
(b) Outline the Necessity for EHVAC Transmission system and discuss in detail about transmission of Electric power from Generation to load end. 13 CO1 U
7. (a) Develop an expression for Capacitance of a 3Φ transmission line of a symmetrically spaced system. 13 CO1 App
(or)
(b) Build an expression for inductance of a 3Φ transmission line of an unsymmetrical spacing Transposed system. 13 CO1 App
8. (a) A 220kV, 50Hz, 200km long three phase line has its conductors on the corners of a triangle with sides 6m, 6m and 12m. The conductor radius is 1.81cm. Find the (i) capacitance per phase per km. (ii) Capacitive reactance per phase, (iii) charging current and (iv) Charging Mega volt-amperes. 14 CO1 App
(or)
(b) Identify the types of Rihand-Delhi HVDC link and list out the various operating links of HVDC transmission system with its merits and uses. 14 CO1 App

