

M.E. Second Semester (Electrical Engg. (Electrical Power System))

HVDC Transmission : EP2204

P. Pages : 1

AU - 3428

Time : Three Hours



Max. Marks : 80

- Notes :
1. Assume suitable data wherever necessary.
 2. Illustrate your answer necessary with the help of neat sketches.
 3. Use of pen Blue/Black ink/refill only for writing book.

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|-----------|----|--|----|
| 1. | a) | With neat sketch explain the construction & operation of Homopolar D.C. link. | 7 |
| | b) | Explain the need for HVDC system. | 7 |
| OR | | | |
| 2. | | With neat sketch draw the complete layout of HVDC system including converter & inverter station and explain the operating principle of it. | 14 |
| 3. | | With neat sketches explain the zero sequence representation of transformer for various winding arrangements. | 13 |
| OR | | | |
| 4. | a) | What are sequence components & how they are represented. | 7 |
| | b) | Explain the need of bundle conductors in transmission system. | 6 |
| 5. | a) | Explain the construction & operation of thyristor also draw its characteristics. | 6 |
| | b) | Draw the schematic circuit diagram of 6 pulse Graetz's Circuit. | 7 |
| OR | | | |
| 6. | | Explain the construction & working of single phase full controlled bridge rectifier. | 13 |
| 7. | | Explain Power Flow analysis of AC/DC system. | 13 |
| OR | | | |
| 8. | a) | Explain series operation of converters. | 7 |
| | b) | Explain parallel operation of converters. | 6 |
| 9. | a) | Explain Audible Noise : Generation & characteristics. | 7 |
| | b) | Explain corona loss & factors affecting corona loss. | 6 |
| OR | | | |
| 10. | a) | Explain the calculation of voltage Gradients of conductors. | 7 |
| | b) | Explain Electrostatic field of EHV lines. | 6 |
| 11. | a) | Explain the mechanism of Lightning Phenomenon. | 7 |
| | b) | Explain Simpson's theory of charge formation in clouds. | 7 |
| OR | | | |
| 12. | a) | Explain the Wilson's theory of Charge formation or separation in clouds. | 7 |
| | b) | What are the properties of Lightning discharge. | 7 |
