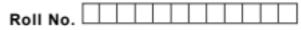


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Total No. of Questions : 18

Total No. of Pages : 02

B.Tech. (EE) (2012 Onwards E-III) (Sem.-7) HIGH VOLTAGE DIRECT CURRENT TRANSMISSION Subject Code : BTEE-805B M.Code : 71943

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Write briefly :

- Differentiate the AC and DC transmission system.
- 2. Enlist any two applications of HVDC transmission system.
- 3. Draw the circuit diagrams of different type of DC links.
- 4. State briefly the process of starting and stopping of DC links during operation.
- 5. What are the surge arresters?
- 6. What is the effect of proximity of AC and DC transmission lines?
- 7. What are the two measures of reliability of HVDC system?
- 8. "Increase in voltage level is always feasible or not". Give you comment.
- 9. Draw the distance verses cost graph of AC and DC transmission system.
- 10. What is selective harmonic elimination in HVDC system?



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SECTION-B

- How will you select the converter configuration of HVDC system? What is the effect of proximity of AC and DC transmission lines?
- 12. Why reactive power requirement is high in DC system? What is the effect of firing angle over the power factor angle of the system?
- Describe the modeling of AC and DC networks. Explain the planning and recent development in HVDC system in details.
- 14. Explain the principle of DC link control. Draw the equations for DC current in HVDC link.
- What are modern trends in HVDC transmission system? Explain any three with suitable example.

SECTION-C

- Analyze the 3-phase converter circuit with 6-pulses. Find the effective communication resistance of a 6-pulse rectifier, which is fed from 400kV, 3-phase AC voltage, when the DC current in HVDC link is 3kA and the rectifier DC voltage is 500kV at firing angle of 15°.
- Describe the converter bridge characteristics. Explain the working of 12-pulse voltage source converter with and without overlap, in detail.
- What is the insulation coordination and smoothing reactor? Explain the protection against over current and over voltage in a converter station.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.



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