Reg. No. : | | | | | | | | | | |

Question Paper Code: 39312

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Elective

Electrical and Electronics Engineering

01UEE912 - HVDC TRANSMISSION

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List the advantages of DC transmission.
2. Mention the types of DC links.
3. Draw the LCC Bridge characteristics.
4. Draw the Graetz bridge circuit.
5. Classify the types of individual phase control and equidistant pulse control?
6. List any two single commutation failures.
7. Name the sources of reactive power.
8. Classify the types of filter?
9. What are the constraints in power flow analysis?
10. State the advantages of per unit system.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe with a neat diagram, the different configurations of asynchronous interconnection in HVDC system. (16)

Or

(b) (i) Explain the HVDC transmission based on VSC. (8)

(ii) Discuss about DC breakers and design problems. (8)

12. (a) Describe with a neat diagram, the operation of 6 pulse VSC circuit. (16)

Or

(b) Write short note on

(i) Converter bridge characteristics (8)

(ii) Choice of converter configuration (8)

13. (a) Illustrate the individual phase control method for generating gate pulse of HVDC valves. (16)

Or

(b) Describe the control circuit for the operation of Current source converter with neat sketch. (16)

14. (a) (i) Differentiate between SVC and STATCOM. (6)

(ii) Explain in detail the working and control characteristic of thyristor controlled reactor. (10)

Or

(b) How characteristics and non characteristics harmonics can be generated? Derive an expression for AC voltage harmonics. (16)

15. (a) Derive the discrete time converter model for 3 valve conduction. (16)

Or

(b) (i) Differentiate the simultaneous and sequential method of power flow analysis. (6)

(ii) Develop the flow chart of the AC-DC power flow. (10)

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