VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
M.E. (CBCS : EEE) I-Semester Make up Examinations, March-2017
(Power Systems & Power Electronics)
High Voltage DC Transmission

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. What are the different types of HVDC links?
2. With the help of neat sketch, give the major components of HVDC Converter station.
3. Mention the various types of DC filters that can be used for Harmonic elimination.
4. Explain pulse frequency control firing scheme.
5. Give the faults that occur frequently in HVDC system.
6. Explain about fast transients in dc lines.
7. Write a short notes on sources Reactive Power.
8. Draw the system model of AC-DC system.
9. Discuss advantages and disadvantages of series MTDC system.
10. Explain voltage limiting controller MTDC system.

Part-B (5 × 10 = 50 Marks)
(All bits carry equal marks)

11. a) What are the different types of applications of HVDC transmission system? Explain in detail.

    b) Write about converter harmonics in HVDC system.

12. a) For three phase six pulse Graetz's circuit, draw the timing diagram considering overlap angle is less than 60 degrees for voltage across load and pairs of conduction valves.

    b) Discuss about the constant $\propto$ control with neat circuit diagram.

13. a) What are the basic principles of over current protection?

    b) Explain various faults exists in converter station.

14. a) Explain the source of Reactive power requirements in HVDC converters.

    b) Discuss about the torsional interactions in HVDC system.

15. Explain in detail about
    a) Series MTDC System
    b) Parallel MTDC System

16. a) Compare between HVAC and HVDC Transmission systems.

    b) Explain the control schemes used for HVDC converters.

17. Write short notes on any *two* of the following:
    a) DC breakers
    b) Reactive power requirement.
    c) Microprocessor based digital control used in HVDC system.

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