



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS / M.TECH (EE-NEW) / SEM-2 / EDPM-205(a)/ 2011**

**2011**

**HIGH VOLTAGE DC TRANSMISSION SYSTEM**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

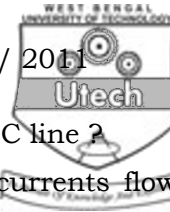
Answer any *five* questions.

5 × 14 = 70

1. Draw and analyse the Graetz circuit without overlap.
2.
  - a) What are the advantages & disadvantages of HVDC ? 4
  - b) Write down the names of different types of DC link.  
Discuss briefly with proper diagram. 7
  - c) What are modern trends in HVDC transmission ? 3
3.
  - a) What are the methods of IPC firing schemes ? Briefly  
explain them. 7
  - b) What are the drawbacks of IPC scheme ? How the  
problem of harmonics instability can be overcome ? 7
4.
  - a) What are the DC components used in HVDC  
transmission ? 4
  - b) Write their functions & characteristics in brief with  
proper diagram. 10

30324 (M.TECH)

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5.
  - a) Why does harmonic current flow in HVDC line ? 3½
  - b) What are the bad effects of harmonic currents flow in HVDC line ? 3
  - c) Write down the characteristics of DC filters. 4
  - d) What is the expression of DC harmonic current flow in transmission line ? 3½
6.
  - a) What types of faults occur in converters in HVDC transmission ? 2
  - b) Why is overvoltage & overcurrent protection required in converter ckt used in HVDC line ? 6
  - c) What protection scheme is applied against overvoltages & overcurrents ? Discuss briefly with proper diagram. 6
7. Explain the principles of a two-terminal DC link control with proper diagram & educations.

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