



Name :
Roll No. :
Invigilator's Signature :

CS/M. Tech (EE)/SEM-2/PEM-204-A/2013

2013

HIGH VOLTAGE D.C. TRANSMISSION

Time Allotted : 3 Hours

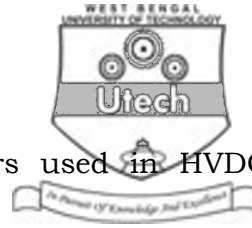
Full Marks : 70

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* of the following. $5 \times 14 = 70$

1.
 - a) What is the difference between HVDC and AC system ?
 - b) Briefly describe the application of HVDC transmission system.
 - c) Classify the HDVC links. $7 + 3 + 4$
2.
 - a) What is the advantage of 12 pulse converters ?
 - b) Draw and explain the Graetz circuit and their respective waveforms. $5 + 9$
3. Explain any *two* of the following : $7 + 7$
 - a) Converter Transformer
 - b) HVDC light
 - c) Current Commutated Converter.
4.
 - a) Write down the advantage of ground return path.
 - b) Draw the block diagram of a HVDC generating station and explain the DC system components and their function. $4 + 10$



5. a) Classify different types of insulators used in HVDC system.
- b) Why we use composite long-rod type insulator instead of pin type insulator ?
- c) Write down the disadvantages of HVDC transmission.
- 3 + 6 + 5
6. Explain any *two* of the following :
- 7 + 7
- a) Thyristor valves
- b) Back to back converters
- c) Lightning arresters for DC system.
7. a) Why we use reactive power controller in HVDC transmission system ?
- b) Why IGBT valves used in HVDC station instead of thyristor valves ?
- c) What is constant current control ?
- 5 + 5 + 4
- =====