

Total No. of Questions : 8]

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**EX-7102 (GS)****B.E. VII Semester**

Examination, December 2017

**Grading System (GS)****EHV AC and DC Transmission***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Total number of questions are eight.  
 ii) Attempt any five questions.  
 iii) All questions carry equal marks.

1. a) Explain the problems involved in EHV transmission. 7  
 b) Discuss the limitations and advantages of HVDC transmission. 7
2. a) Explain why it is necessary to use compensation of EHV AC lines. 7  
 b) Describe series compensation and list its merits and demerits. 7
3. a) Explain various kinds of DC links. 7  
 b) Explain the different converter faults and how the system is protected against these faults. 7
4. a) What are FACTS devices? Explain its importance. 7  
 b) Explain the problems associated with AC interconnection. How it can be overcome? 7

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5. a) Explain typical HVDC converter station with schematic diagram. 7  
 b) Explain the modern trends in DC transmission. 7
6. a) Explain the operation of Graetz circuit and derive expression for output voltage. 7  
 b) Compare the desired features of constant current control and constant extinction angle control of converter. 7
7. a) What are the causes of harmonics in HVDC system? Explain their adverse effects in HVDC system. 7  
 b) Explain the principle of operation of STATCOM and also discuss static VAR compensator (SVC). 7
8. a) Explain the terms attenuation and distortion of travelling waves propagating on overhead lines. 7  
 b) Explain in detail control of lightning and switching over voltages. 7

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