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BIEEE-008

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

Term-End Examination

00683

December, 2016

BIEEE-008 : FLEXIBLE AC TRANSMISSION SYSTEM

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt **five** questions in all. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) Draw and explain the voltage and current profile for uncompensated transmission lines under no load. 7

(b) Compare Active and Passive compensators. 7

2. (a) Explain the constraints of maximum transmission line loading. 7

(b) Explain transient free switching in TSC. 7

3. (a) Explain STATCOM in detail. 7

(b) Discuss the working of UPFC with the help of a neat diagram. 7

4. (a) What are custom power devices ? Mention their examples and explain any one of them in brief. 7

(b) Explain Thyristor Controlled Braking Resistor (TCBR) in terms of equal area criterion for transient stability. 7

5. (a) Discuss in detail the operation of Interline Power Flow Controller (IPFC) and its importance. 7

(b) What are shunt reactors ? How are multiple reactors placed to achieve line compensation ? 7

6. (a) Explain the need of filters in thyristor based compensators. 7

(b) Give the principle, operation and control of TCVR with the help of a suitable diagram. 7

7. (a) With a relevant diagram, explain the construction and working of Static Series Synchronous Compensator (SSSC). 7

(b) Compare TCR-TSC on the basis of VI and VQ characteristics and losses. 7
